SUPPLEMENT NO. 2

FOR

2009 SRF PROJECT PLAN

FOR IMPROVEMENTS TO THE

NORTHEAST SEWAGE DISPOSAL SYSTEM

INCLUDING MILK RIVER SYSTEM

WAYNE COUNTY DEPARTMENT OF PUBLIC SERVICES

JUNE 28, 2012

ORCHARD, HILTZ & McCLIMENT, INC.
34000 PLYMOUTH ROAD
LIVONIA, MI 48150

HUBBELL, ROTH & CLARK, INC.
420 MICHIGAN BUILDING
220 BAGLEY
DETROIT, MI 48226

OHM Project No. 0144-11-0041

Robert A. Ficano
County Executive

June 26, 2012

Ms. Karen Totzke Nickols, SRF/DWRF Project Manager
Michigan Department of Environmental Quality
Resource Management Division, Revolving Loan Section
Constitution Hall - 3rd Floor South
P.O. Box 30241
Lansing, MI 48909-7741

Subject: Supplement No. 2
2009 SRF Project Plan for Improvements to the Northeast Sewage Disposal System including the Milk River System
Submitted under State Revolving Fund Program

Dear Ms. Nickols:

On behalf of the communities served by the Milk River Intercounty Drain Drainage District, the Wayne County Department of Public Services is pleased to submit the attached Supplement No. 2 to the "2009 SRF Project Plan for Improvements to the Northeast Sewage Disposal System including the Milk River System" (2009 Project Plan) for consideration under the State Revolving Fund Loan (SRF) Program administered by the Michigan Department of Environmental Quality (MDEQ).

As you are aware, Supplement No. 2 was prepared in response to Enforcement Notice EN-000114 for the Milk River System. This document revises the sections in the 2009 Project Plan relating to the Milk River Intercounty Drain Drainage District to include additional improvements and to alter the dates for completing system improvements. We request that you review this document and include appropriate projects proposed for Fiscal Year 2014 funding during development of the Project Priority List for Fiscal Year 2014. Supplement No. 2 includes a Milk River Intercounty Drain Board resolution dated June 12, 2012 adopting these revisions to the 2009 Project Plan.

If you have any questions regarding this submittal, please contact Mr. David Lakin (dlakin@co.wayne.mi.us or 313-224-8283). We look forward to your favorable review of this material.

Sincerely,

Lavonda Jackson, Esq.
Wayne County Drain Commissioner / Deputy Director, Department of Public Services

Enclosure
CC: Ms. Kerreen Conley, Ms. Kelly Cave, Mr. Firooz Fath-Azam, Mr. Dan Alford, Mr. David Lakin: WCDPS; Mr. Greg Kacvinsky, OHM

DEPARTMENT OF PUBLIC SERVICES • ENVIRONMENTAL SERVICES GROUP
400 MONROE, SUITE 400 • DETROIT, MICHIGAN 48226 • (313) 224-8279 • FAX (313) 224-0045

Michigan Department of Environmental Quality
Rick Snyder, Governor
Dan Wyant, Director

http://www.michigan.gov/deq

Clean Water Revolving Funds
SRF/SWQIF Project Plan Submittal Form

Name of the Project Supplement No. 2 for 2009 SRF Project Plan for Improvements to the Northeast Sewage Disposal System Including Milk River System	**Applicant's Federal Employer Identification Number (EIN)** 38-6004895	
Legal Name of Applicant (The legal name of the applicant may be different than the name of the project. For example, a county may be the applicant for bonding purposes, while the project may be named for the particular village or township it serves.) **Wayne County / Department of Public Services / Environmental Services Group**	**Areas Served by this Project** Counties Wayne, Macomb Congressional Districts 9 and 14 State Senate Districts 2 and 8 State House Districts 1 and 18	
Address of Applicant (Street, PO Box, City, State & Zip) 400 Monroe Street, Suite 400 Detroit, MI 48226		
Brief Description of the SRF Project Upgrades to the Milk River RTB sanitary and storm water pumping systems, disinfection pumping system, flushing systems for the underground storage tanks, and the aeration system. Associated upgrades will also be made to the electrical and automation systems, buildings, and the Milk River recirculation system.		
Estimated Total Cost of the SRF Project $15,920,000	**SRF Construction Start Target Date** 4th Quarter, 2014	
Brief Description of the SWQIF Project		
Estimated Total Cost of the SWQIF Project	**SWQIF Construction Start Target Date**	
Name and Title of Applicant's Authorized Representative Ms. Lavonda Jackson, Wayne County Drain Commissioner, Deputy Director of DPS		
Address of Authorized Representative (if different from above)	**Telephone** 313-224-8469	**FAX** N/A
	E-Mail Address ljackso1@co.wayne.mi.us	
Signature of Authorized Representative		**Date** June 26, 2012
Joint Resolution(s) of Project Plan Adoption/Authorized Representative Designation attached check here ☒		

A final project plan, prepared and adopted in accordance with the Department's *Clean Water Revolving Funds (SRF and SWQIF) Project Plan Preparation Guidance*, must be submitted by July 1st in order for a proposed project to be considered for placement on a Project Priority List for the next fiscal year. Please send your final project plan with this form to:

REVOLVING LOAN SECTION
RESOURCE MANAGEMENT DIVISION
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
PO BOX 30241
LANSING MI 48909-7741

(EQP 3523 03/11)

Table of Contents

Page No.

SECTION 1 - INTRODUCTION AND EXECUTIVE SUMMARY 1-1
1.1. Introduction 1-1
1.2. Priority 1 Projects 1-1
1.3. Recommendations 1-2
1.4. User Costs 1-5
SECTION 2 - PROJECT BACKGROUND 2-1
2.1. Introduction 2-1
2.2. Study Area Characteristics 2-1
2.2.1. Delineation of Study Area 2-1
2.2.2. Land Use in Study Area 2-2
2.2.3. Surface and Groundwater 2-2
2.2.4. Economic Characteristics 2-4
2.2.5. Population Data 2-6
2.3. Existing Facilities 2-6
2.3.1. Collection System 2-6
Collection System 2-12
2.4. Environmental Setting 2-19
2.4.1. Cultural Setting 2-19
2.4.2. Natural Environment 2-19
SECTION 3 - NEED FOR PROJECT 3-1
3.1. Compliance Status 3-1
3.2. Orders 3-1
3.2.1. Milk River CSO RTB 3-1
3.3. Water Quality 3-1
3.4. Projected Needs 3-2
3.4.1. Expected Flows and Loadings 3-2
3.4.2. Operational Goals 3-2
3.5. General Assessment of Existing NESDS (Milk River) Facilities 3-2
3.6. Assessment of Existing NESDS (Milk River) Facilities 3-3
3.6.1. Milk River Pumping Station and CSO RTB 3-3
3.6.2. Milk River Recirculation Systems 3-26
3.6.3. Milk River Drain Enclosure 3-28
SECTION 4 - ALTERNATIVE ANALYSIS 4-1
4.1. General 4-1
4.2. Regional Alternatives 4-1
4.3. "No Action" Alternatives 4-1
4.3.1. "No Action" Alternative Improvements 4-1
4.4. Flushing Compartment Improvement Alternatives 4-2
4.4.1. Alternative Option for Flushing Compartment No. 1 4-2
4.4.2. Alternative Option for Flushing Compartment No. 2 4-3
SECTION 5 - RECOMMENDED PROJECTS 5-1
5.1. General 5-1
5.2. Monetary Cost Estimates 5-1
5.3. Authority to Implement Selected Alternative 5-3
5.4. Water Quality Management Plans 5-3
5.5. User Costs 5-3

Page No.

SECTION 6 - ENVIRONMENTAL IMPACTS 6-1
6.1. General 6-1
6.1.1. Long-Term Impacts 6-1
6.1.2. Short-Term Impacts 6-1
6.1.3. Irreversible Impacts 6-1
SECTION 7 - MITIGATION 7-1
7.1. General 7-1
7.2. Mitigation of Long-Term Impacts 7-1
7.3. Mitigation of Short-Term, Construction-Related Impacts 7-1
SECTION 8 - PUBLIC PARTICIPATION 8-1
8.1. General 8-1
8.2. Public Hearing 8-1
8.3. Resolution 8-1
SECTION 9 - GLOSSARY 9-1

APPENDICES:

A. Cost Estimates
B. Project Planning Correspondence (includes site photos)
C. Public Hearing Advertisement, Public Hearing Transcript, Resolutions

LIST OF FIGURES:

	Page No.
Figure 2-1 - Project Area Map	2-3
Figure 2-2 – Interceptor Profile	2-7
Figure 2-3 - NESDS Schematic	2-8
Figure 2-4 – Harper Woods Flow Control	2-10
Figure 2-5 – Wet Weather Flow Allocation	2-11
Figure 2-6 - MRPS Tributaries	2-13
Figure 2-7 - Sewer System Tributary to the Detroit Sewer System	2-14
Figure 2-8 - Milk River, Post-1990 Improvements	2-17
Figure 2-9 - Milk River Facility Location Map	2-18
Figure 3-1: Flushing Compartment #1 Tank Plan	3-5
Figure 3-2: Flushing Compartment #2 Tank Plan	3-7
Figure 3-3: Mechanical Disinfection Schematic	3-9
Figure 3-4: Mechanical Sampling Schematic	3-11
Figure 3-5: Dewatering Pipe Gallery Section	3-14
Figure 3-5a: Dewatering System - Gravity Component	3-15
Figure 3-6: Milk River Recirculation Pumping Station	3-29

LIST OF TABLES:

	Page No.
Table 1-1: Recommended Improvement Projects for the MRIDDD	1-3
Table 1-2: Cost Summary for Recommended Projects (All NESDS Projects)	1-4
Table 1-3: Estimated User Costs: Priority 1B Milk River Facility System Upgrades	1-5
Table 1-4: Estimated User Costs: Priority 1A *and* 1B Upgrades (NESDS + MRIDDD)	1-6
Table 2-1: Household Income Information	2-4
Table 2-2: Employment Data Communities Tributary to the Milk River Facilities	2-5
Table 2-3: Population Data for the Communities Tributary to Milk River Facilities	2-6
Table 5-1: Cost Summary for Recommended Projects	5-2
Table 5-2: Estimated Cost for Typical Residential	5-3

Section 1 - Introduction and Executive Summary

1.1. Introduction

In 2009, Wayne County submitted the document "2009 State Revolving Fund (SRF) Project Plan for Improvements to the Northeast Sewage Disposal System (NESDS) including Milk River System" (2009 Project Plan) to the Michigan Department of Environmental Quality (MDEQ). The Plan serves as a comprehensive strategy of planned improvements to the NESDS and wastewater facilities owned by the Milk River Intercounty Drain Drainage District (MRIDDD) over a 20 year period to ensure reliable operation of these systems and compliance with current and future regulatory requirements. These improvements were categorized into four sets of Priority Projects that would be completed for the NESDS and MRIDDD facilities.

In 2010 Wayne County submitted to MDEQ revisions to the 2009 Project Plan based on community comments received during the public comment process. The revisions included amendments to the schedule for implementing the wastewater system improvements. The first of the projects was scheduled for the Project Priority Listing (PPL) by MDEQ for fiscal year (FY) 2015.

In March 2011, the Wayne County Department of Public Services-Environmental Services Group (WCDPS-ESG) received Enforcement Notice EN-000115 for the NESDS from MDEQ. Enforcement Notice EN-000114 was also issued to the MRIDDD for their facilities. Both Enforcement Notices included draft Administrative Consent Orders (ACO). Actions required in the draft ACO were generally consistent with the improvements identified in the Project Plan. During negotiations of the respective ACOs with MDEQ, it was determined that the 2009 Project Plan would be revised to include additional improvements and to move forward the start dates for completing the improvements to the NESDS and MRIDDD facilities. These revisions will be completed as follows:

1. Project Plan Supplement 1: The Supplement No. 1 document revised the 2009 Project Plan relating to improvements to the NESDS. Project Plan Supplement No. 1 was submitted to MDEQ by July 1, 2011 such that NESDS improvement projects were considered by MDEQ during development of the Project Priority List (PPL) for FY2012.

2. Project Plan Supplement 2: The Supplement No. 2 document will revise the 2009 Project Plan relating to improvements to the MRIDDD. Project Plan Supplement No. 2 will be submitted to MDEQ by July 1, 2012 such that MRIDDD improvement projects will be considered by MDEQ during development of the PPL beginning in FY2014.

Supplement 2 to the Project Plan for Improvements to the Northeast Sewage Disposal System (NESDS) including Milk River System is presented herein.

1.2. Priority 1 Projects

The 2009 SRF Project Plan identified six (6) major components of the NESDS as Priority 1 Projects as follows:

1. Grosse Pointe Interceptor Sewer (GPI)
2. Marter Road Booster Pumping Station (MRBS)
3. Milk River Pumping Station & Combined Sewer Overflow (CSO) Retention Treatment Basin (MRRTB)
4. Kerby Road Pumping Station (KRPS)

5. Harper Woods Connection and Flow Control
6. Milk River Recirculation System

The ACO for the NESDS has been entered. The ACO for the MRIDDD is currently under negotiation. To meet the requirements of the NESDS ACO, four of the Priority 1 Projects were refined as part of Supplement No. 1 and have been designated as Priority 1A Projects: the GPI, the MRBS, the KRPS and the Harper Woods Connection projects. The remaining two projects are intended to meet the anticipated requirements of the ACO for the MRIDDD and are being addressed as part of this Supplement No. 2.

For the purposes of Supplement No. 2, the updates to the Priority 1B projects for the MRIDDD include adjusting cost estimates to a construction cost index (CCI) in line with the new project schedule and the addition of several new components at the Milk River facilities. In summary, the new components include:

- Upgrade flushing system
- Replace elevator
- Rebuild storm pumps
- Extend / modify sanitary pump guiderails
- Dewatering pump upgrades
- Replace disinfection pumping system
- Rebuild flushing and groundwater pumps
- Modify check valves and piping for dewatering pumps
- Isolate sanitary pump wet well with sluice gate
- Upgrade electrical / lighting systems
- Repair building architectural and structural components
- Repair and upgrade aeration system
- Upgrade river recirculation system
- Upgrade the SCADA system

These improvements have been identified as necessary to meet the requirements of the draft ACO.

1.3. Recommendations

Wayne County has the necessary legal, institutional, financial, managerial authority, and resources to build, operate, and maintain the Milk River facilities. It is recommended that the governing agencies approve and adopt this Plan to ensure improvements necessary for proper operation of the MRIDDD and to allow for low-interest financing under the Michigan Department of Environmental Quality's State Revolving Fund program.

Table 1-1 summarizes the recommended projects and associated costs that are required to meet the needs of the draft ACO for the purposes of this Supplement No. 2. Table 1-2 includes an overview of all NESDS projects, as represented by Supplement Nos. 1 and 2.

Table 1-1: Recommended Improvement Projects for the MRIDDD

Priority 1B Projects (FY 2014 - FY 2015)	Capital Cost
Flushing system improvements (Basins #1 and #2)	$ 2,380,000
Disinfection system improvements	$ 1,550,000
Sampling system improvements	$ 490,000
Dewatering system improvements	$ 320,000
Sanitary pump station improvements	$ 250,000
Storm pump station improvements	$ 2,020,000
Aeration system improvements	$ 370,000
Electrical system	$ 3,700,000
SCADA system	$ 410,000
Architectural / Structural / Misc. Building Repairs	$ 2,410,000
River recirculation system (incl. electrical and SCADA)	$ 1,880,000
Post-Construction TCR/DO Monitoring	$ 140,000
Total Priority 1B Projects	***$15,920,000***

Priority 2B Projects (FY 2015 - FY 2019)	Capital Cost
Architectural / Structural / Misc. Building Repairs	$ 749,000
Drain Enclosure Condition Assessment and Repairs	$ 353,000
Total Priority 2B Projects	***$ 1,102,000***

Priority 3B Projects (FY 2020 - FY 2024)	Capital Cost
Architectural / Structural / Misc. Building Repairs	$ 261,000
Replace Raw Sewage Pumps	$ 1,173,000
SCADA system - Milk River RTB/CSO facility	$ 800,000
SCADA system upgrades - river recirculation system	$ 277,000
Total Priority 3B Projects	***$ 2,510,000***

Priority 4B Projects (FY 2025 - FY 2029)	Capital Cost
Replace Intake Pipe (72-inch diameter)	$ 2,960,000
Total Priority 4B Projects	***$ 2,960,000***

Table 1-2: Cost Summary for Recommended Projects (All NESDS Projects)

	Priority 1 Projects (FY 2012 to 2015)	Capital Cost
1A	Grosse Pointe Interceptor Sewer	$ 118,000.00
	Marter Road Booster Pumping Station	$ 5,034,000.00
	Kerby Road Pumping Station	$ 5,225,000.00
	Harper Woods Connection & Flow Control	$ 590,000.00
	Cook Road PS Metering Facility	$ 145,000.00
	Total NESDS Priority 1A Projects	***$ 11,112,000.00***
1B	Milk River Pumping Station & CSO RTB	$ 14,040,000.00
	Milk River Recirculation System	$ 1,880,000.00
	Total Milk River Priority 1B Projects	***$ 15,920,000.00***
	Total Priority 1 Projects	***$ 27,032,000.00***
	Priority 2 Projects (FY 2015 to 2019)	**Capital Cost**
2A	Marter Road Booster Pumping Station	$ 338,000.00
	Kerby Road Pumping Station	$ 42,000.00
	Total NESDS Priority 2A Projects	***$ 380,000.00***
2B	Milk River Pumping Station & CSO RTB, Drain Enclosure Condition Assessment and Repairs	$ 1,102,000.00
	Total Milk River Priority 2B Projects	***$ 1,102,000.00***
	Total Priority 2 Projects	***$ 1,482,000.00***
	Priority 3 Projects (FY 2020 to 2024)	**Capital Cost**
3A	Grosse Pointe Interceptor Sewer	$ 151,000.00
	Marter Road Booster Pumping Station	$ 1,302,000.00
	Milk River Pumping Station & CSO RTB	$ 2,054,000.00
	Kerby Road Pumping Station	$ 5,331,000.00
	Harper Woods Connection & Flow Control	$ 238,000.00
	Total NESDS Priority 3A Projects	***$ 9,076,000.00***
3B	Milk River Pumping Station & CSO RTB	$ 2,510,000.00
	Total Milk River Priority 3B Projects	***$ 2,510,000.00***
	Total Priority 3 Projects	***$ 11,586,000.00***
	Priority 4 Projects (FY 2025 to 2029)	**Capital Cost**
4A	Grosse Pointe Interceptor Sewer	$ 37,381,000.00
	Marter Road Booster Pumping Station	$ 2,084,000.00
	Total NESDS Priority 4A Projects	***$ 39,465,000.00***
4B	Milk River Recirculation System	$ 2,960,000.00
	Total Milk River Priority 4B Projects	***$ 2,960,000.00***
	Total Priority 4 Projects	***$ 42,425,000.00***
	TOTAL ALL PROJECTS (FY 2012-2029):	**$ 82,525,000.00**

1.4. User Costs

The user costs to finance the Priority 1 projects have been determined assuming State Revolving Fund financing with a 2.5% interest rate and a 20-year debt retirement. Improvements included within this project plan are not expected to materially change the current operation and maintenance budget for the Milk River facilities.

Priority 1B costs calculated for the SCADA system improvements and the storm pump station improvements were adjusted to reflect lower contingencies and engineering costs, as those items represent operational upgrades for which implementation costs are more predictable (see Appendix A for cost details on these items).

Estimated costs for Priority 1B projects reflect 3.5% annual inflation to FY2015. It is assumed that design would occur in 2013 with construction spanning 2014 and 2015. Due to the construction staging necessary to accommodate ongoing facility operations (i.e. working around wet weather flows), it will likely be necessary to split the Priority 1B improvements over a 2-year period. Estimated costs for projects under Priorities 2-4 are based on the same inflation rate projected to the corresponding implementation year.

The cost to the typical residential user in each community is shown in Table 1-3. The costs will vary depending upon individual household water usage as well as the allocation of costs to the industrial and commercial customers within each community. Table 1-4 lists the combined impact of Supplement No. 1 projects ***and*** Supplement No. 2 projects for the communities tributary to the Milk River facilities. This provides an overview of the total impact on user fees upon the full implementation of all NESDS projects.

Table 1-3: Estimated Cost for a Typical Residential Customer
Priority 1B Milk River Facility System Upgrades

Community	***Annual Cost for Typical Residential Customer****
St. Clair Shores	$ 0.21
Grosse Pointe Woods	$ 113.88
Harper Woods	$ 74.88

* *Based upon an average household of three people*

Table 1-4: Estimated Cost for a Typical Residential Customer
Priority 1A *and* 1B Upgrades: Milk River Facility (Supplement No. 2) *and* Supplement No. 1

	Annual Cost for Typical Residential Customer[*]		
Community	***PRIORITY 1B Milk River Facility Improvements (Supplement No. 2)***	***PRIORITY 1A NESDS Improvements (Supplement No. 1)***[**]	***Total Additional Costs for NESDS Improvements***[***]
St. Clair Shores	$ 0.21	$ 12.69	$ 12.90
Grosse Pointe Woods	$ 113.88	$ 12.36	$ 126.24
Harper Woods	$ 74.88	$ 8.61	$ 83.49
Eastpointe	$ 0	$ 12.66	$ 12.66
Roseville	$ 0	$ 12.66	$ 12.66
Grosse Pointe Shores	$ 0	$ 19.44	$ 19.44

* *Based upon an average household of three people*
** *Based on annual costs reported in Supplement No. 1*
*** *Includes all proposed projects from Supplement Nos. 1 and 2*

Section 2 - Project Background

2.1. Introduction

In 2009, Wayne County submitted the document "2009 State Revolving Fund (SRF) Project Plan for Improvements to the Northeast Sewage Disposal System (NESDS) including Milk River System" (2009 Project Plan) to the Michigan Department of Environmental Quality (MDEQ). The Plan serves as a comprehensive strategy of planned improvements to the NESDS and wastewater facilities under the jurisdiction of the Milk River Intercounty Drain Drainage District (MRIDDD) over a 20 year period to ensure reliable operation of these systems and compliance with current and future regulatory requirements. These improvements were categorized into four sets of Priority Projects that would be completed for the NESDS and MRIDDD facilities.

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2. Project Plan Supplement 2: The Supplement No. 2 document will revise the 2009 Project Plan relating to improvements to the MRIDDD. Project Plan Supplement No. 2 will be submitted to MDEQ by July 1, 2012 such that MRIDDD improvement projects will be considered by MDEQ during development of the PPL beginning in FY2014.

Supplement No. 2 to the Project Plan for Improvements to the Northeast Sewage Disposal System (NESDS) including Milk River System is presented herein.

2.2. Study Area Characteristics

2.2.1. Delineation of Study Area

The Wayne County operated NESDS includes:

Southeast Macomb Sanitary District (SEMSD):

- City of Eastpointe
- City of Roseville
- City of St. Clair Shores

- Village of Grosse Pointe Shores

Milk River Intercounty Drain Drainage Distric (MRIDDD)t:

- City of Harper Woods
- City of Grosse Pointe Woods
- City of St. Clair Shores (southern fringe of city only)

This report focuses on the Milk River Drainage District facilitation only, which includes the MRRTB, pumping station and Recirculation facilities only. See Figure 2-1 for a location map of the Milk River facilities with respect to the NESDS service area. The remaining Wayne County facilities were addressed in Supplement No. 1.

2.2.2. Land Use in Study Area

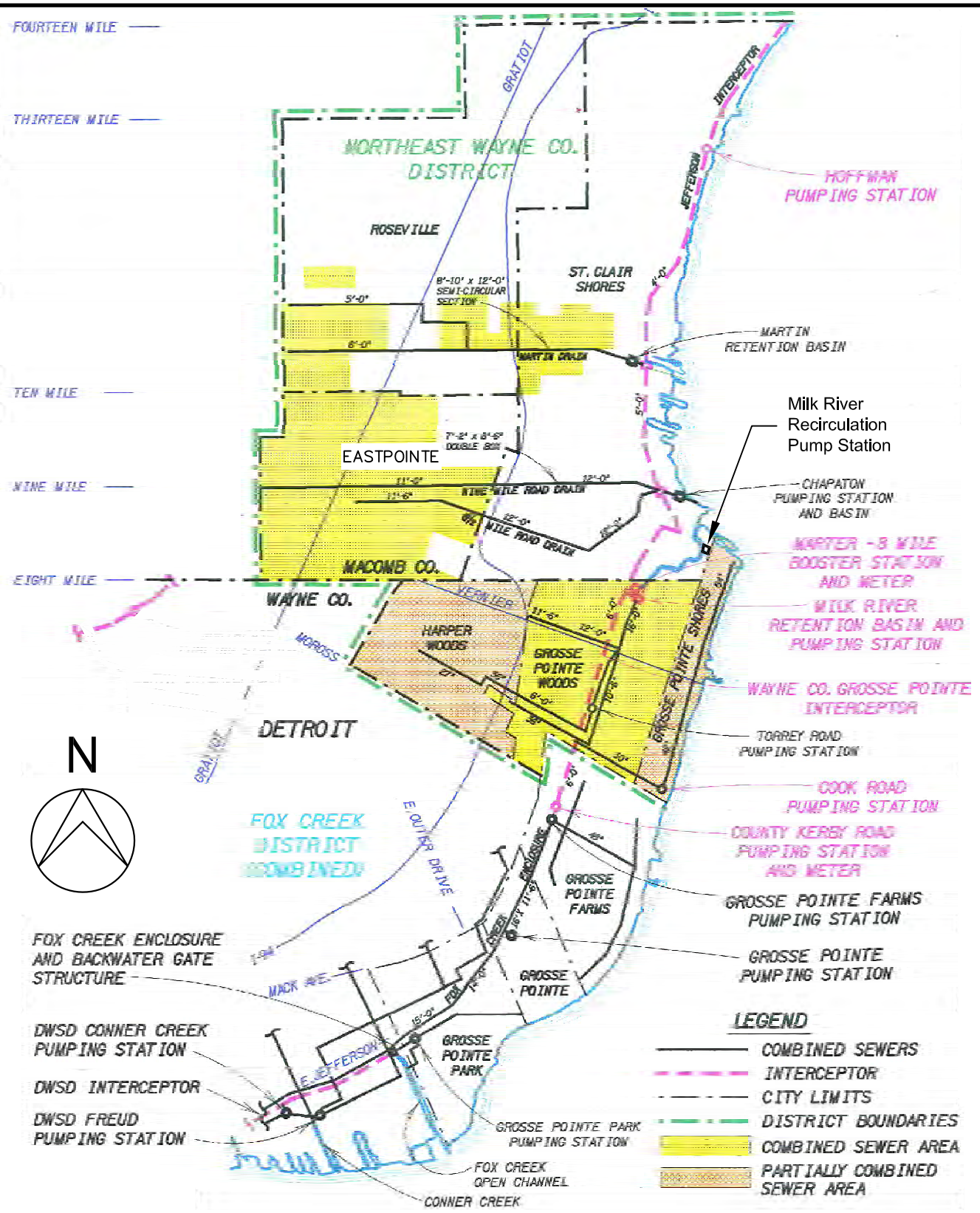
The Cities of Harper Woods, Grosse Pointe Woods and Grosse Pointe Shores are essentially completely developed residential areas located in suburban northeastern Wayne County, Michigan. The cities are zoned for limited local retail business concentrated along four main arterial highways, Vernier Road (M-29), Mack Avenue, Kelly Road, and the northerly extension of the Edsel Ford Expressway (I-94). The only other notable physical features of the area are a private golf course (Lochmoor Country Club), a large retail business area (Eastland Shopping Center) and several relatively small school sites and municipal parks. Any significant changes in the area would likely consist of commercial and residential redevelopment.

The land use in the service area is considered to be saturated according to present zoning.

2.2.3. Surface and Groundwater

There are large volumes of water available from the Great Lakes and extensive distribution systems from the City of Detroit to provide potable water in the areas tributary to the MRRTB service area. Future dependency on groundwater supplies is not anticipated.

Lake St. Clair is located in the study area. The lake is used for recreational boating, fishing and swimming. The downstream portion of the Milk River (downstream of Jefferson Avenue) contains a marina. Upstream of Jefferson access to the Milk River is limited. There are no motorized watercraft along the Milk River. Homeowners use the river as a source of water for sprinkler systems and recreational purposes.



NORTHEAST SEWAGE DISPOSAL SYSTEM

REV	DATE	JOB NO. 20110177	OHM / HRC HUBBELL, ROTH & CLARK, INC Consulting Engineers	FIG. 2–1
		DATE 6–15–11		

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2.2.4. Economic Characteristics

Although there is a well publicized decline in the national and local economies, it is assumed to be negligible from the 2009 Project Plan for the purposes and timeframe relative to this Supplement No. 2.

Table 2-1 includes the median household incomes for the NESDS communities tributary to the Milk River facilities, and the percentage of households with incomes below the poverty level. The data were obtained from the 2010 Census.

Table 2-1: Household Income Information

Community	Median Household Income	Households in Poverty
St. Clair Shores	$57,875	3.7%
Grosse Pointe Woods	$92,698	2.4%
Harper Woods	$55,187	5.1%

* *Based on 2010 Census data*

Table 2-2 includes a summary of the SEMCOG forecast of employment by class in the NESDS communities' tributary to the Milk River facilities.

Table 2-2: Employment Data
Communities Tributary to the Milk River Facilities

	Gross Pointe Woods			Harper Woods			St. Clair Shores		
Jobs By Industry	2005	2035	Change: 2005-2035	2005	2035	Change: 2005-2035	2005	2035	Change: 2005-2035
Natural Resources & Mining	0	0	0	0	0	0	C	C	C
Manufacturing	93	45	-48	17	10	-7	1,696	881	-815
Wholesale Trade	75	45	-30	33	4	-29	469	266	-203
Retail Trade	571	368	-203	2,759	1,975	-784	3,250	2,291	-959
Transportation & Warehousing	109	130	21	C	C	C	498	486	-12
Utilities	0	0	0	0	0	0	C	C	C
Information	59	53	-6	16	14	-2	47	44	-3
Financial Activities	796	748	-48	326	308	-18	3,233	2,975	-258
Professional, Scientific, & Technical Services	169	181	12	262	264	2	1,149	1,107	-42
Management of Companies & Enterprises	C*	C	C	C	C	C	C	C	C
Administrative, Support, & Waste Services	326	388	62	207	228	21	1,514	1,855	341
Education Services	794	874	80	510	561	51	1,836	2,002	166
Health Care & Social Assistance	1,235	2,256	1,021	619	939	320	2,505	4,064	1,559
Leisure & Hospitality	1,064	1,071	7	461	474	13	2,348	2,227	-121
Other Services	618	603	-15	105	109	4	1,714	1,645	-69
Public Administration	C	C	C	C	C	C	C	C	C
Total**	**6,090**	**6,938**	**848**	**5,675**	**5,274**	**-401**	**20,677**	**20,207**	**-470**

Source: SEMCOG Community Profile Data (www.semcog.org) - extracted from SEMCOG website April 9, 2012

** - "C" indicates data blocked due to confidentiality concerns of ES-202 files*

*** - Total employment numbers include blocked data*

2.2.5. Population Data

The population of the area tributary to the MRRTB / Recirculation facilities ("service area") has been updated with 2010 Census data. Population Projections for the service area have been determined for the years 2012 and 2030, based on SEMCOG data. Table 2-3 shows the current population estimate and the 2030 forecast for the service area.

Table 2-3: Population Data for the Communities Tributary to Milk River Facilities

Community	2010	2012*	2020	2030	2035
South Macomb Sanitary District					
St. Clair Shores	59,715	60,135	61,815	61,997	62,234
Wayne County NESDS					
Grosse Pointe Woods	16,135	16,065	15,787	15,742	15,690
Harper Woods	14,236	13,909	12,600	12,674	12,568
TOTAL	90,086	90,109	90,202	90,413	90,492

** Interpolated value between 2010 and 2020*

2.3. Existing Facilities

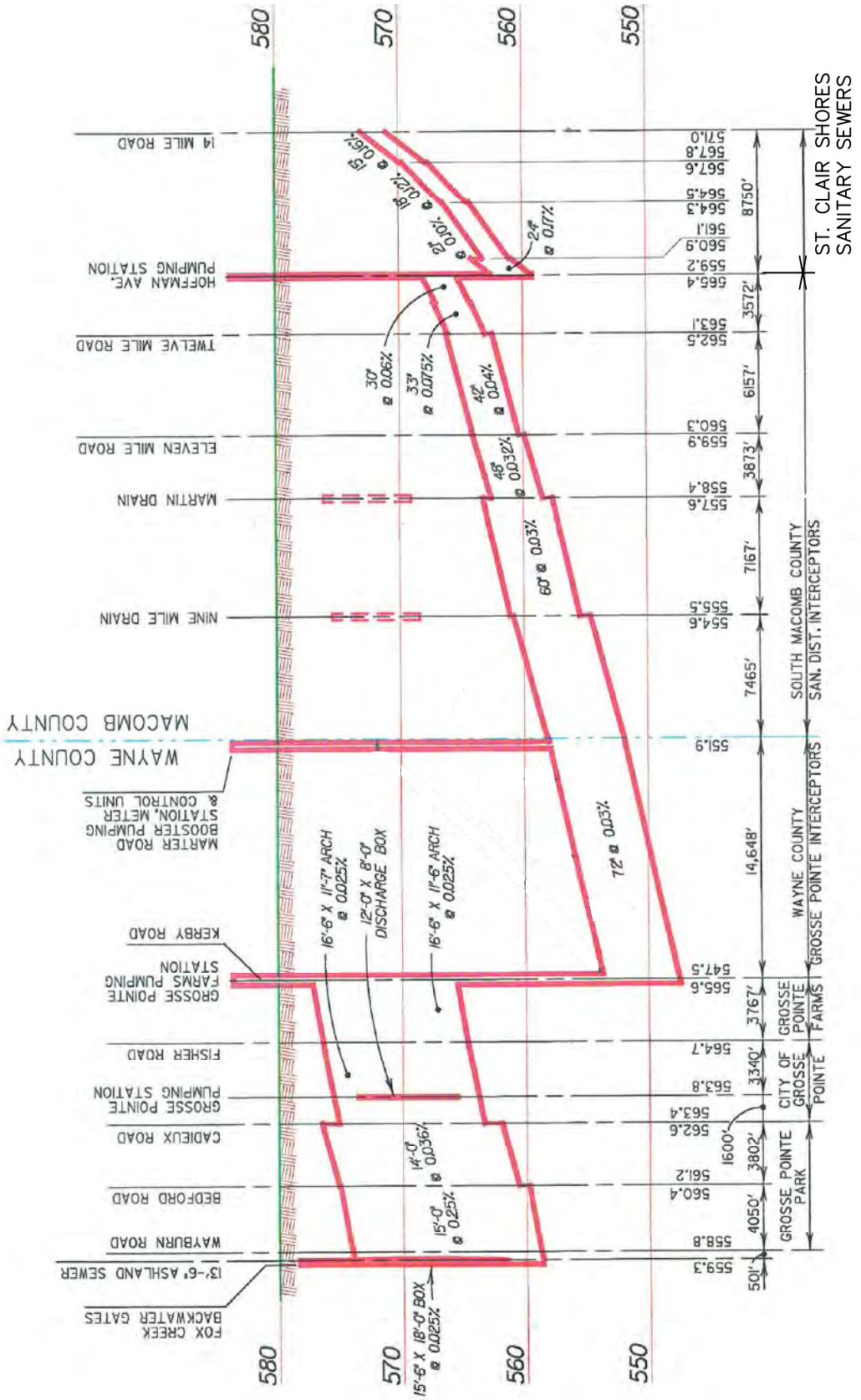
2.3.1. Collection System

General Description

The attached Overview Plan (Fig. 2-1) and Interceptor Profile (Fig. 2-2) contain the basic layout of the Wayne County NESDS interceptors and combined sewers serving the area.

The Wayne County NESDS and the SEMSD cooperate to deliver wastewater from Roseville, Eastpointe and St. Clair Shores in Macomb County and Harper Woods, Grosse Pointe Woods and Grosse Pointe Shores in Wayne County to the City of Detroit system, via the Fox Creek Drain Enclosure, for treatment at the Detroit Metro Wastewater Plant. Figure 2-3 contains a schematic of the NESDS.

A system of combined sewers serves part of Roseville and St. Clair Shores and most of Eastpointe in Macomb County. The wastewater collected by these combined sewers and the separate sanitary sewers is conveyed, during dry weather, by two interceptors to the Grosse Pointe Interceptor (GPI) at the Macomb County / Wayne County border. The Jefferson Interceptor and the Jefferson Relief Drain are operated by the SEMSD.



NORTHEAST SEWAGE DISPOSAL SYSTEM

REV	DATE	JOB NO. 20110177	OHM / HRC HUBBELL, ROTH & CLARK, INC Consulting Engineers	FIG. 2–2
		DATE 6–15–11		

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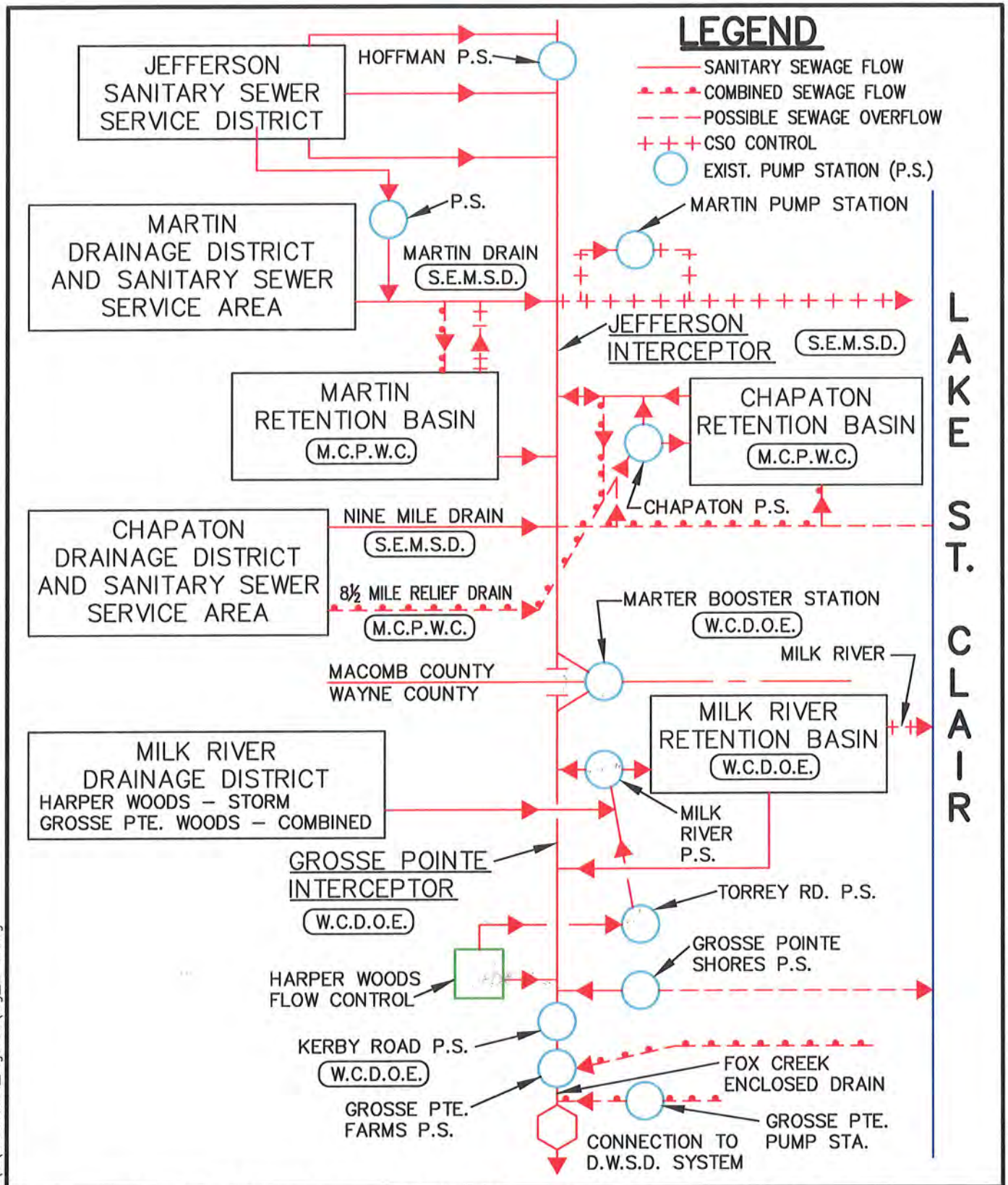

NORTHEAST SEWAGE DISPOSAL SYSTEM

REV	DATE	JOB NO.		SHEET NO.
		20090224	OHM / HRC HUBBELL, ROTH & CLARK, INC Consulting Engineers	FIG. 2–3
		DATE		
		4–11–09		

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The Macomb County wastewater flows by gravity through the GPI except for peak periods of flow when the Wayne County MRBS is activated to increase the flow to the GPI by surcharging. Maximum capacity of the MRBS is 102 cfs.

The Wayne County GPI extends from the MRBS at the Macomb-Wayne County line to the Wayne County KRPS located in Grosse Pointe Farms. The KRPS lifts the flow to the enclosed Fox Creek Drain Enclosure and then to the City of Detroit System.

Grosse Pointe Interceptor (GPI)

The GPI was constructed in 1942. The interceptor is a 6-foot diameter tunnel sewer constructed of monolithic unreinforced concrete. Its length is approximately 14,800 feet (2.8 miles).

A 36-inch sewer from the Milk River Pump Station taps into the interceptor near its northern end. Farther south, the 30-inch Cook Road Sewer enters the system.

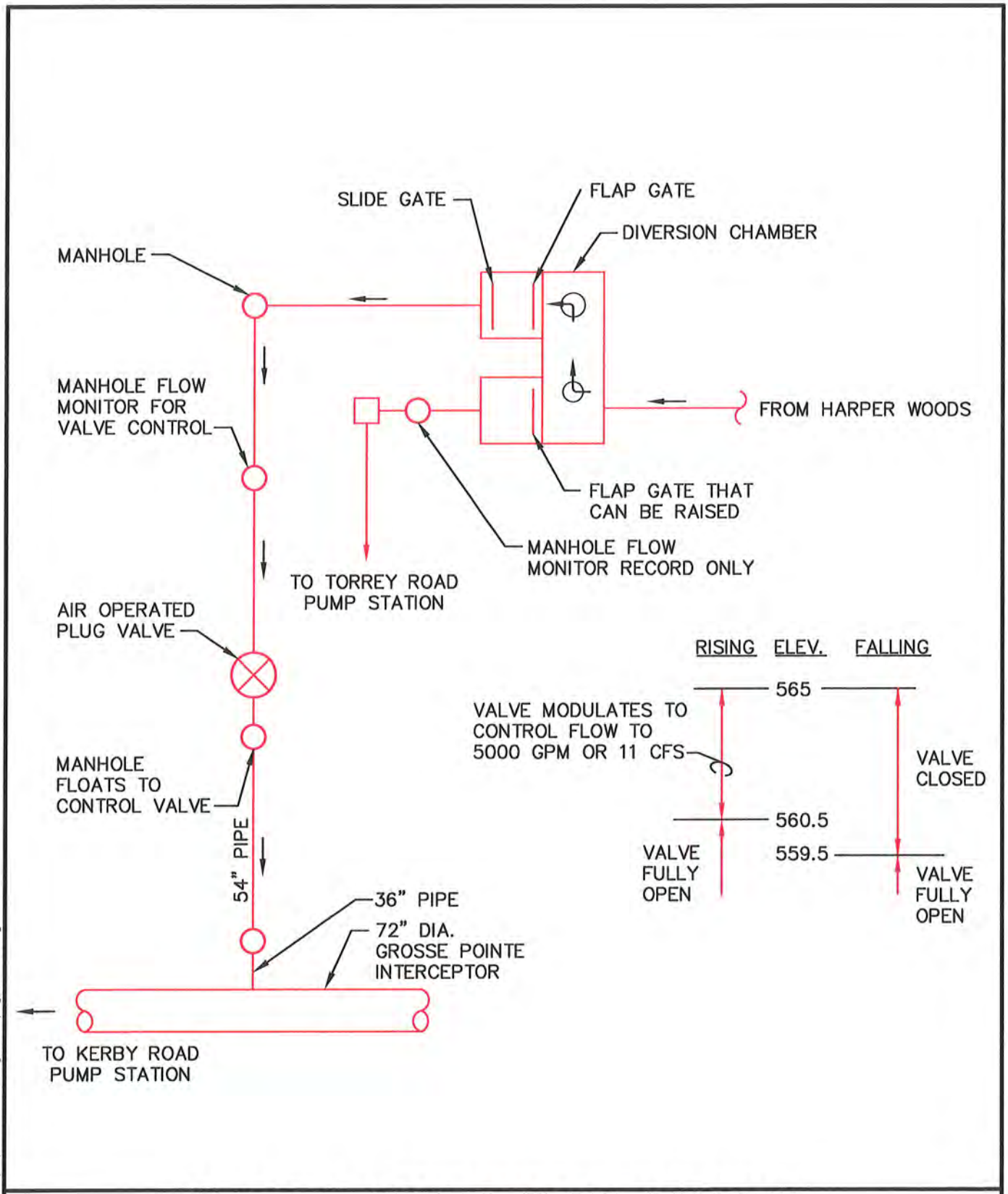
A third connection to the interceptor was added in the 1990s as part of the Milk River SRF Project. Sanitary sewage from Harper Woods will flow directly into the Grosse Pointe interceptor (Figure 2-4). If the hydraulic gradient in the GPI is below its design level, the sewage flow will be unrestricted. If the hydraulic gradient in the interceptor rises above the design level, a pneumatically operated valve will partially close and modulate to limit the flow to 11 cfs. If the level in the GPI rises above elevation 565 (NGVD 29), the valve will completely close to protect the basements in Harper Woods from backing up. An alarm will sound at the Milk River Pumping Station if this occurs.

Flow capacity in the GPI is allocated as follows (Figure 2-5):

SEMSD.....102 cfs (65.9 MGD)
Milk River / Harper Woods..... 22 cfs (14.2 MGD)
Grosse Pointe Shores (via Cook Road Sewer) ..... 3 cfs (1.9 MGD)
Kerby Road Pumping Station.....127 cfs (82.1 MGD)

The flowing full capacity of the GPI is 73 cfs. During and following storms, however, the interceptor often functions as a pressurized sewer. Then flow rates may reach 127 cfs. All flow rates into and out of the interceptor are metered. When the interceptor is pressurized, its hydraulic gradient lies above the crown of the pipe. However, the highest point on the gradient is sufficiently below ground to be within safe limits.

Dry weather flow rates are seldom much over 50 cfs. At the MRBS, dry weather sewage flows by gravity into the interceptor. This flow is continuous. It varies from about 20 cfs in early morning to about 40 cfs later in the day. From the Milk River Station, dry weather flows are intermittently pumped. One sanitary pump usually delivers 11 cfs on an intermittent basis. From Grosse Pointe Shores, dry weather flows are also intermittent. One sanitary pump delivers 3 cfs for about 20 minutes every hour. Sewage in the interceptor flows to the KRPS.



HARPER WOODS FLOW CONTROL

REV	DATE	JOB NO. 20090224	SHEET NO. FIG. 2-4
		DATE 4-13-09	

OHM

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Consulting Engineers

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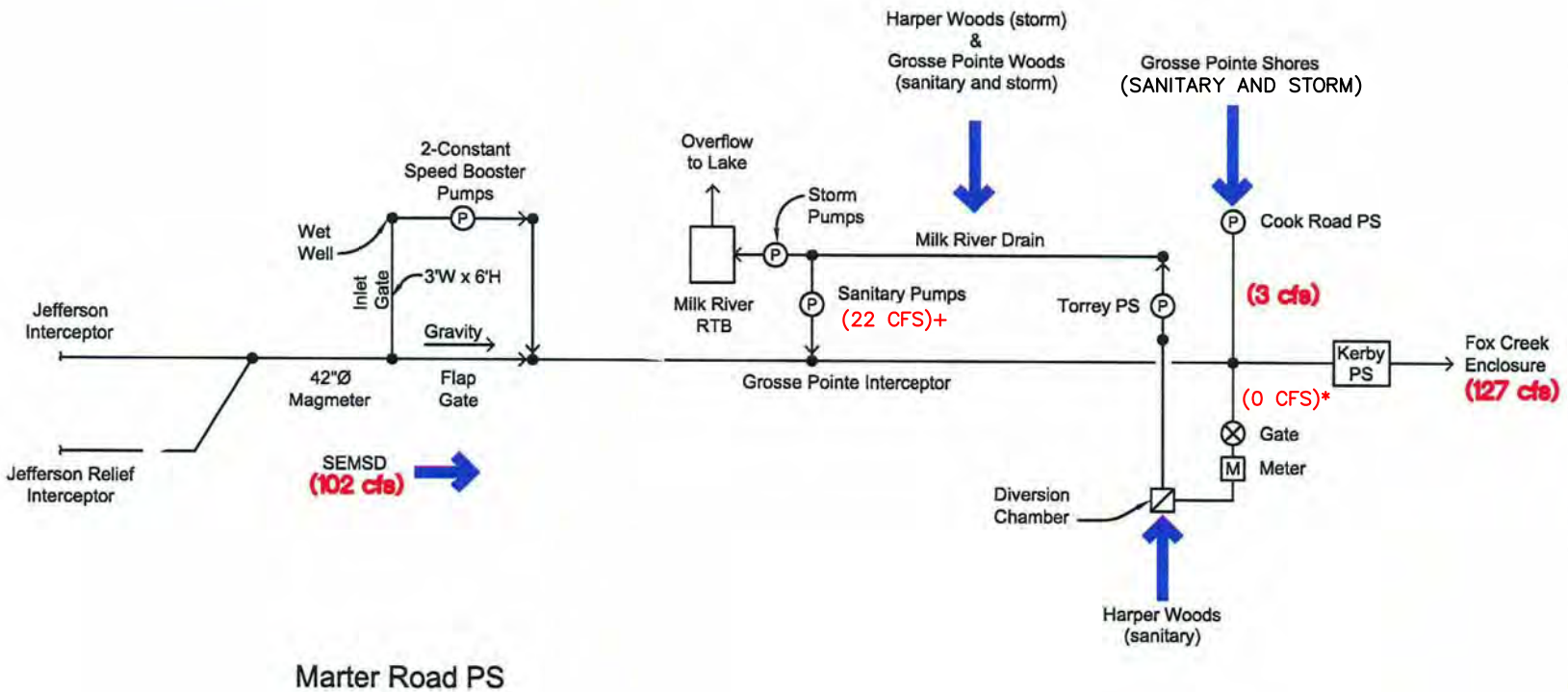
WET WEATHER FLOW ALLOCATION



\+ 11–22 CFS COORDINATED WITH HARPER WOODS FLOW CONTROL DIVERSION

* 0–11 CFS ALLOWED DURING WET WEATHER

OHM

HRC

HUBBELL, ROTH & CLARK, INC
Consulting Engineers

JOB NO. 20110177
DATE 4-3-2012

REV	DATE

FIG. 2-5

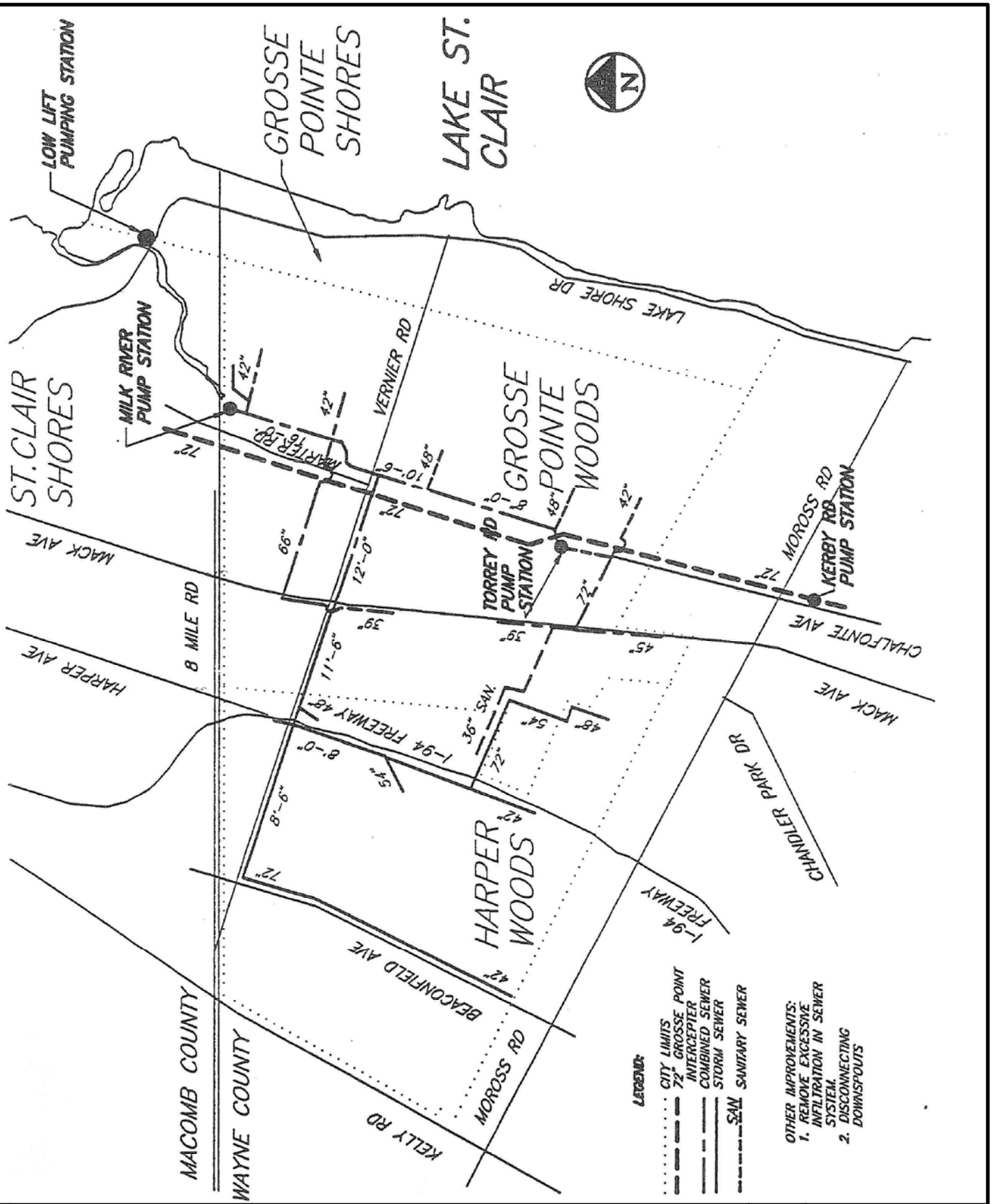
Collection System

Original Facilities Prior to 1990s SRF Expansion Project

The Milk River is an open waterway located primarily in southeast Macomb County. Its total length is about 6,500 feet, beginning at the Milk River facility (MRRTB) and emptying into Lake St. Clair. The major input to the Milk River is combined sewer overflows (CSO) from the Milk River pump station. There are also a few small storm drains tributary to the Milk River from separate storm sewer systems. Therefore, the focus of existing water quality concerns on the Milk River is combined sewer overflows from the Milk River pump station.

The MRPS serves an area of slightly less than 4,000 acres consisting primarily of the Cities of Grosse Pointe Woods and Harper Woods. The interceptors tributary to the Milk River pump station are combined sewers, carrying both storm and sanitary flow in one pipe. The sewers tributary to the interceptors are also combined sewers in Grosse Pointe Woods. Harper Woods is served by separate storm and sanitary sewers. However, both storm and sanitary sewers outlet to the combined sewers. The existing major interceptors tributary to the Milk River pump station are shown in Figure 2-6. The tributary area is almost completely developed. Development is mostly residential with some commercial areas.

The outlet from the Milk River pump station is the 72-inch Grosse Pointe Interceptor (GPI). This interceptor was constructed in 1942. Flow from the GPI is pumped by the KRPS into the Fox Creek interceptor which is tributary to the City of Detroit sewer system. A schematic of the system is shown in Figure 2-7. The firm pumping capacity of the Milk River pump station to the GPI is 10,000 gallons per minute (gpm) or 22 cfs. Firm pumping capacity is the capacity of a pumping station with its largest pump out of service.



EXISTING MAJOR SEWERS TRIBUTARY TO MRPS

REV	DATE	JOB NO.		FIG.
		20110177	OHM HRC HUBBELL, ROTH & CLARK, INC Consulting Engineers	2–6
		DATE		
		6–15–11		

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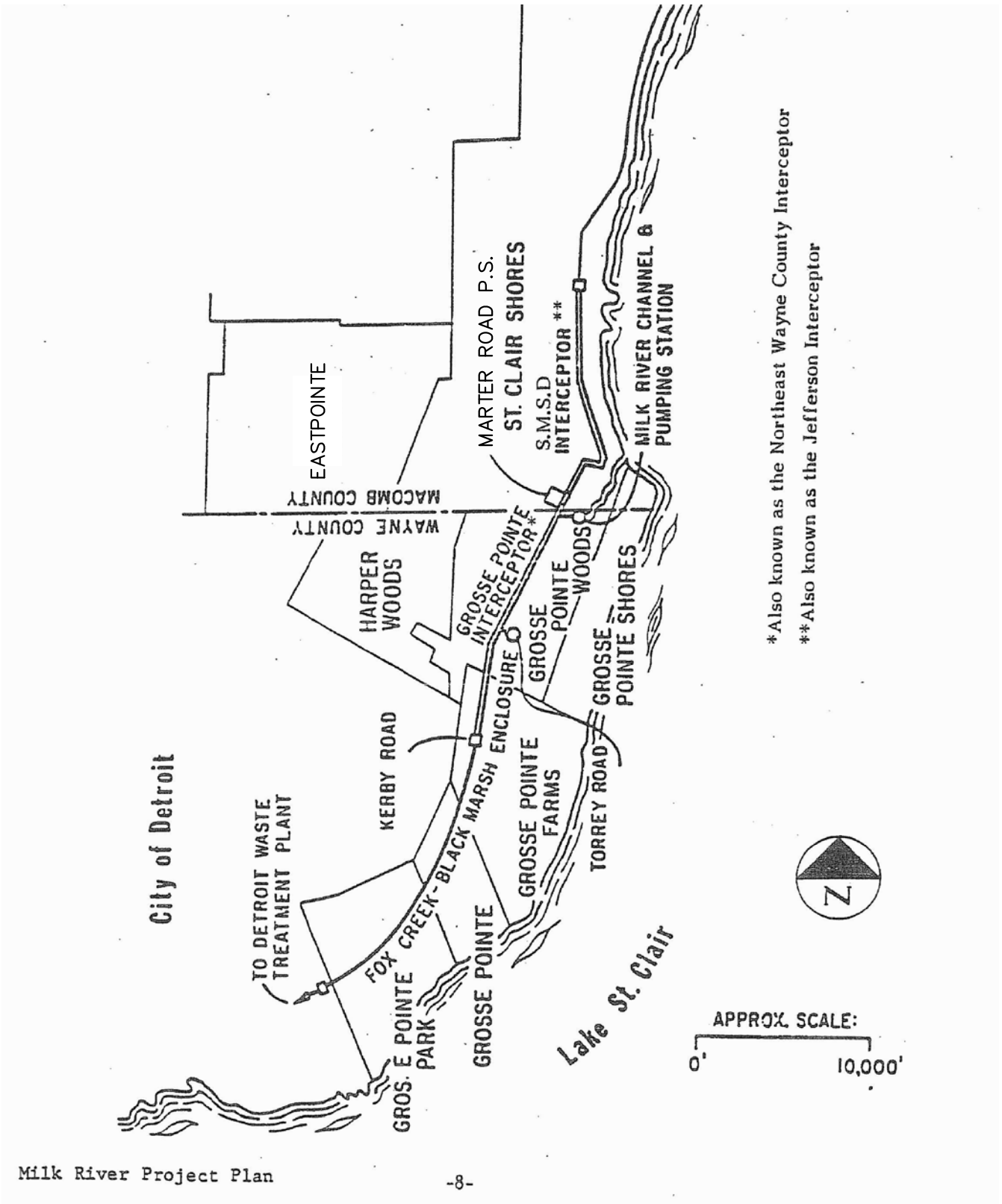

Milk River Project Plan

-8-

SEWER SYSTEM TRIBUTARY TO THE DETROIT SEWER SYSTEM

REV	DATE	JOB NO. 20110177	OHM / HRC HUBBELL, ROTH & CLARK, INC. Consulting Engineers	FIG. 2-7
		DATE 6-15-11		

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During dry weather all flow from the MRRTB system discharges directly to the GPI. The only time dry weather overflow was experienced in recent years was when influent into the GPI was limited due to failed pumps at the KRPS.

During wet weather, when the capacity of the dry weather pumps is exceeded, the large storm pumps are utilized to pump flow into the 3.8 million gallon retention basin. For very small rain events, all flow is captured in the basin and subsequently dewatered to the GPI as capacity is available. The basin dewatering is partially by gravity (gravity discharge when the tank is full, pumped discharge for the lower portion of the basin) and, therefore, the rate of outflow can be limited if the hydraulic grade in the GPI is high enough to restrict gravity discharge from the MRRTB. For moderate or large rain events, the retention basin will fill to capacity and begin to discharge treated overflow (settled, skimmed and disinfected) to the Milk River. After the rain event, the sewage captured in the basin is dewatered to the interceptor.

Present Facilities

As a result of the 1990 Project Plan and Subsequent SRF Construction Project, the Milk River system now includes (Figure 2-8):

- Milk River Pumping Station (1958)

  The Milk River Pumping Station sanitary flow discharge to the 72-inch GPI is pumped by three 5,000 gpm (11 cfs) pumps for a firm capacity of 10,000 gpm (22 cfs). During storm events, the Milk River Pumping Station uses seven additional storm pumps (three at 184,000 gpm each and four at 137,000 gpm each for a total pumping station firm capacity of 926,000 gpm) which discharge to the retention basins. The wet weather total pumping station firm capacity was calculated with one of the three 5,000 gpm sanitary pumps and one of the three 184,000 gpm storm pumps out of service.

- First Flush Retention Basin

  This retention basin has a nominal capacity of 7.0 million gallons. The basin includes a flushing system consisting of both gravity and pumped basin dewatering (metered) to the GPI. The flushing system consists of a series of flushing headers and nozzles that are supplied flushing water from the flushing pumps. Each header is controlled through a motor operated butterfly valve located within a manhole structure. Basin No. 1 contains 14 flushing header and manhole structures. The majority of the flushing valves and operators have failed and are inoperable, thus not allowing for the proper flushing operation and maintenance of the Basin.

- Second Retention Basin

  This basin has nominal capacity of 12.0 million gallons and receives inflow after Basin No. 1 is full. Basin No. 2 includes a nozzle type flushing system that is used to clean Basin No. 2 once storm flow conditions have abated. Basin No. 2 is dewatered through Basin No. 1 and then routed to the GPI. When Basin No. 2 is filled it overflows to an aeration tank where aeration and sodium hypochlorite disinfection occurs before discharge to the Milk River. Similar to Basin No. 1, Basin No. 2 is provided with flushing headers and nozzles that are supplied water from the flushing pumps. Each header is controlled through a motor operated butterfly valve located within a manhole structure.

- Sodium Hypochlorite System

  The chemical feed system for feeding sodium hypochlorite consists of two 21,000-gallon chemical storage tanks and nine chemical feed pumps. There is one chemical feed pump dedicated to each storm pump with two redundant chemical feed pumps. These backup pumps must be manually engaged. The chemical feed pumps are located on an intermediate mezzanine level approximately 15 feet above the bottom of the chemical storage tanks. This has caused the chemical feed system to have issues regarding the priming of the pumps. The self priming canister leaks and flushing water must be manually added by the operators to assist with pump startup. The chemical storage tanks use an air mix system for mixing of the bulk chemical. The use of air with sodium hypochlorite mixing has been shown to adversely affect the chemicals strength and is no longer a recommended method of mixing.

- Sampling System

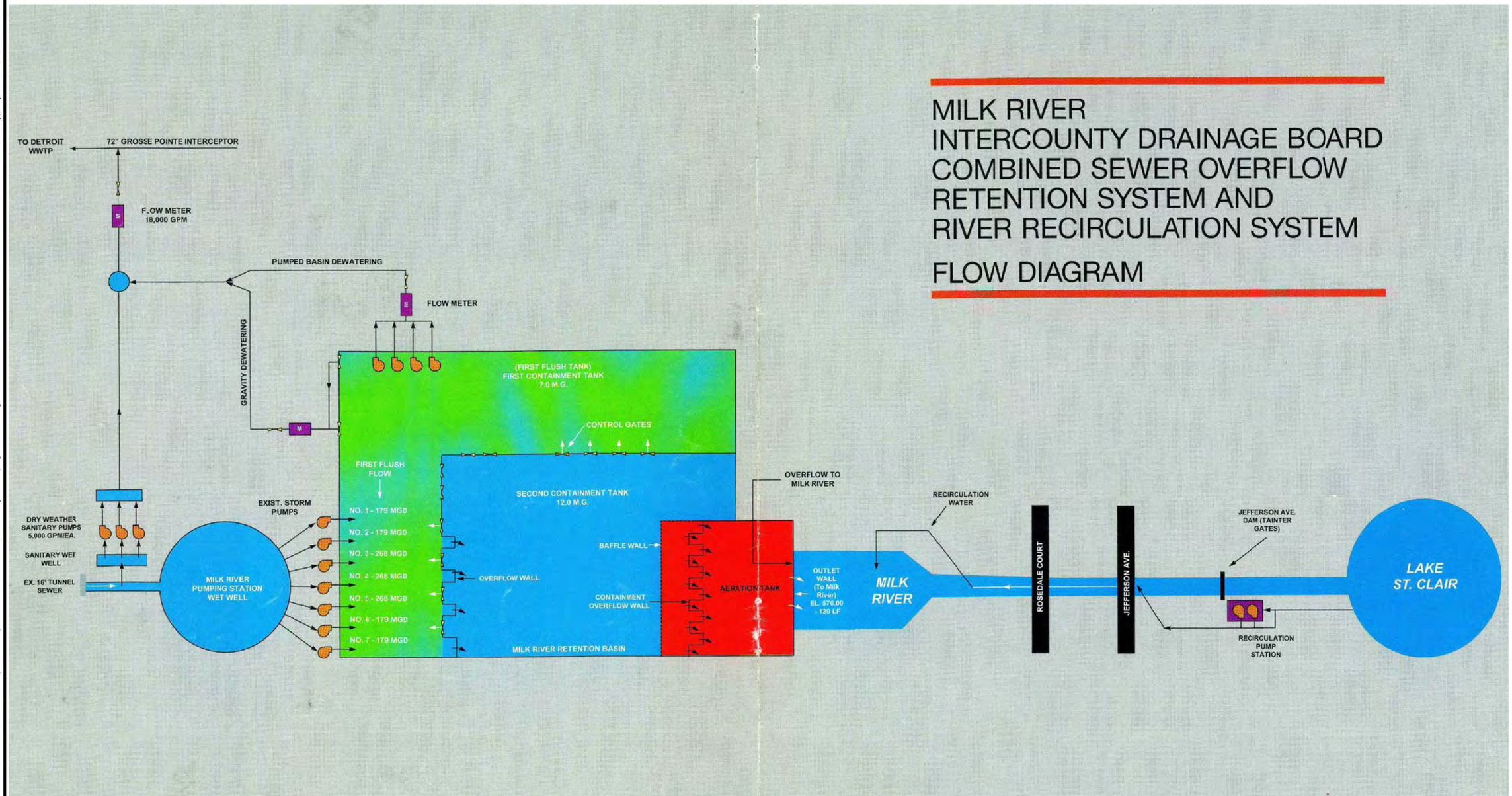
  Influent and effluent samples are collected throughout a storm event to track total residual chlorine and other parameters that are being discharged to the Milk River. The influent sampling pump is mounted upstream of the storm pumps. The effluent sample pump is a submersible pump that is mounted at Compartment 2. Additionally, there is no redundancy with the influent/effluent pumps and failure of this pump during storm events would make it extremely difficult for the County to sample for compliance with NPDES permit.

- River Recirculation System

  The recirculation system consists of a pumping station located east of Jefferson Avenue; a 72-inch diameter CMP intake line from Lake St. Clair built in 1958 and a 42-inch diameter discharge line to the MRRTB aeration tank. The pumping station is equipped with two (2) 14 MGD each pumps which can recirculate either 14 MGD or 28 MGD of Lake St. Clair water to the aeration tank. This recirculation flow (which varies by season) is designed to assist in the control of adequate dissolved oxygen levels in the Milk River between the CSO RTB basin and Lake St. Clair.

MILK RIVER INTERCOUNTY DRAINAGE BOARD COMBINED SEWER OVERFLOW RETENTION SYSTEM AND RIVER RECIRCULATION SYSTEM

FLOW DIAGRAM



RETENTION BASIN AND RECIRCULATION SYSTEM				
REV	DATE	JOB NO. 20110177	OHM HRC HUBBELL, ROTH & CLARK, INC Consulting Engineers	FIG. 2–8
		DATE 6–15–11		

Path: P:\0126_0165\0144110040_Milk_River_PP2_EWRG\2012 Supplement No 2\GIS FIGURES FOR REPORT\Figure 2-9.mxd

0 520 1,040 1,560 2,080 Feet

FIGURE 2-9
Milk River Facility Locations

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OHM
888.522.6711
ohm-advisors.com

2.4. Environmental Setting

2.4.1. Cultural Setting

The State Historic Preservation Officer has been contacted to identify the existence of any known historical and archaeological sites located within the study area.

2.4.2. Natural Environment

a. Climate

A national weather station is located in Grosse Pointe Farms, which monitors climatological data. Precipitation averages 31.65 inches per year, ranging from a low monthly average of 1.61 inches in February to a high monthly average of 3.49 inches in June.

The annual average temperature as recorded at the Grosse Pointe Farms Weather Station is 49.9°F, ranging from a low average of 25°F for the month of January and a high average of 73.3°F in July.

Prevailing winds are from the southwest with an average annual speed of 10 knots (11.5 mph). These prevailing winds limit the effects of Lake St. Clair to local lake breezes and to storm tracks that blow in from the east.

b. Air Quality

Wayne County, and the entire state of Michigan, currently meet the National Ambient Air Quality standards for carbon monoxide, nitrogen dioxide, sulfur dioxide, lead, and PM_{10} (particulates less than 10 micrometers in diameter). However, current monitoring data indicates that portions of Wayne County do not meet the Annual $PM_{2.5}$ National Ambient Air Quality standard (particulates equal or less than 2.5 micrometers in diameter.) The entire Metro-Detroit area is included in the designation. Nine Michigan Counties, including Wayne County, also do not meet the 8-hour Ozone National Ambient Air Quality standard.

c. Wetlands

Wetland maps prepared by the Michigan Resource Information System, Land and Water Management Division of the MDEQ show that no wetland areas exist within the study area.

d. Coastal Zones

Portions of the study area are located within the Great Lakes Coastal Zone Region. The MDEQ has been contacted to review the proposed project to determine whether it would be consistent with the Michigan Coastal Management Program.

e. Floodplains

The Flood Insurance Rate Map (FIRM) was updated for Wayne County, with a new effective date of February 2, 2012. There is no mapped floodplain or floodway along the Milk River within the boundaries of Wayne County. The Macomb County FIRM, last updated on September 29, 2006, shows a 100-year floodplain with an elevation of approximately 579 feet, immediately north of the Milk River CSO/RTB facility. The Milk River CSO/RTB facility is not within the mapped 100-year floodplain boundary.

f. Natural or Wild and Scenic Rivers

According to the Natural Rivers Unit of the Land and Water Management Division of the MDEQ, there are currently no natural or wild and scenic rivers within the study area.

g. Major Surface Waters

The Milk River is the only major surface water source within the study area. Lake St. Clair is, however, located in close proximity to the study area, separated by the City of Grosse Pointe Shores to the east and St. Clair Shores to the north.

h. Recreational Facilities

Local parks and playgrounds, such as Ghesquieve and Sweeney Parks, offer recreational facilities to local residents. Boating, swimming, and fishing are available in nearby Lake St. Clair.

i. Topography

The study area is located on a flat glacial lake plain. The topography within the study area ranges from low points of approximately 580 feet (above mean sea level) along the east side of the study area in Grosse Pointe Woods to high points of approximately 590 feet along the west side of the study area in Harper Woods.

j. Geology

The bedrock of the study area is predominantly of middle Paleozoic origin. The kinderhook formation is the rock group of the area. The formation stage is composed of Antrim Shale. This information is capable of producing shale for cement, brick and tile.

k. Soils

The soil types within the study area are primarily silty clay loams and clay loams, such as Toledo silty Clay Loam (Ts) and Lenawee Clay Loam (Lh) typical of the lake plains. Ts soils are characterized by high water table, very slow permeability with moderate limitations for crops. Lh soils are characterized as somewhat poorly drained, high water table and compatible for crops and sod production.

l. Agricultural Resources

The study area is entirely urbanized. There is no agricultural land within the study area.

m. Existing Plant/Animal Communities

There are no rare, threatened, or endangered plant or animals species habitat located within the MRRTB study area. Existing animal species are typical for urbanized areas; therefore, there are no animals of economic or sport value within the study area.

A review of protected species was also made in November 2008 using the U.S. Fish and Wildlife Service's website for Endangered Species Section 7(a)(2) Consultation Process

(www.fws.gov/midwest/endangered/section7/index.html.) Endangered species listed as having a presence in Wayne County include the Indiana bat and Northern Riffleshell. Candidate species include the Eastern Massasauga and Rayed bean. Threatened species include the Eastern Prairie Fringed Orchid.

Indiana bats hibernate in caves and/or abandoned mines and live in the summer in wooded areas. Eastern Massasaugas live in wet areas, including wet prairies, marshes and low areas along rivers and lakes. The Eastern Prairie Fringed Orchid's habitat includes prairies, wetlands, meadows, marshes and bogs. These species will not be impacted by the proposed work because there is no habitat of these types in the vicinity of the proposed work.

The Northern Riffleshell and Rayed bean are kinds of mussels that are usually found in small streams or near shoal or riffle areas, and in the shallow, wave-washed areas of glacial lakes. Substrates typically include gravel and sand. These species will not be impacted because the proposed work is all on land; there will be no work performed in the surrounding surface waters.

All earth work will also require proper controls to prevent soil erosion and sedimentation from entering surface waters and will be performed in accordance with all regulatory requirements.

To summarize, the proposed work is located in an urban area where no suitable wildlife habitat is present for the listed species. We therefore conclude that the proposed work will have "no effect" on the listed species, their habitats, or proposed or designated critical habitat.

n. Aesthetic Qualities

The area within the City of St. Clair Shores where the Milk River enters Lake St. Clair is a very picturesque setting along the lakefront with nearby marinas.

Section 3 - Need for Project

3.1. Compliance Status

Enforcement Notice No. EN-000115 was issued to Wayne County Department of Public Services in March 2011. The Notice included a draft Administrative Consent Order (ACO) that identified a set of stipulations, findings and a compliance program relative to the Northeast Sewage Disposal System (NESDS). These issues were addressed in Supplement No. 1.

Enforcement Notice No. EN-000114 was issued to the Milk River Intercounty Drain Drainage Board (MRIDDD) in March 2011. The Notice included a draft Administrative Consent Order (ACO) that identified a number of stipulations, findings and a compliance program relative to the Milk River CSO Retention Treatment Basin (Milk River CSO RTB).

3.2. Orders

3.2.1. Milk River CSO RTB

The regulatory order driving these projects is the draft ACO (ACO-000114) referenced in Section 1.

3.3. Water Quality

The Detroit River extends approximately 32 miles linking Lake St. Clair and Lake Erie. The Detroit River Area of Concern (AOC) is a bi-national AOC that drains approximately 700 square miles to the river from both Michigan and Ontario.

Eleven beneficial use impairments have been identified in the Detroit River. The known causes of impairments include urban and industrial development in the watershed, bacteria, PCBs, PAHs, metals, and oils and greases. Combined sewer overflows (CSOs) and municipal and industrial discharges are major sources of contaminants within the AOC. Storm water runoff and tributaries in Michigan are also major sources of contaminants. Additional environmental concerns include invasive species, changes in the fish community structure, and reductions in fish and wildlife habitat.

The Detroit River Remedial Action Plan (RAP) Stage I document was originally completed in 1992 to address the water quality issues associated with the Detroit River. In 1996, a RAP update was developed as a bi-national effort led by the MDEQ to address the impairments and water use goals. Approximately104 recommendations were developed with the goal of restoring and maintaining the integrity of the Detroit River ecosystem to a standard that will provide a safe, clean, and self-sustaining natural environment. In 1999, the Detroit River Canadian Cleanup Committee completed an updated report on the Detroit River AOC, but the report was not ever formally adopted by the parties to the Four Agency Agreement. The RAP was updated again in 2002 to report on restoration activities, new data, and the status of beneficial use impairments. In 2005, the Friends of the Detroit River agreed to become the lead local organization for the Detroit River AOC.

3.4. Projected Needs

3.4.1. Expected Flows and Loadings

Data obtained from SEMCOG indicates that the population in the NESDS service area is anticipated to decrease very slightly through 2030, as described in the Section 2 of this Plan. Since the population of the service area is not expected to increase, flows within the NESDS can be expected to remain relatively constant. This assumption assumes no major climate change which could lead to increased rainfall patterns between now and the year 2030. The lack of flow increase in the system indicates that no expansion of the existing facilities will be required. This statement is based on the assumption that NPDES permit limits are not made more stringent.

3.4.2. Operational Goals

The operational goals for this Project Plan will be to maintain the existing facilities in the condition necessary to continue to operate efficiently and meet NPDES permit limits. The facilities equipment and items discussed herein need to be replaced because the systems are requiring excessive maintenance and have reached their useful service life. This Project Plan will also identify improvements to provide cost savings and energy efficiencies for its customers for the continued maintenance and operation of the facilities.

3.5. General Assessment of Existing NESDS (Milk River) Facilities

3.5.1. Overview

The major facilities which are still in use and their construction dates are as follows:

Facility	Construction Date
Grosse Pointe Interceptor (GPI)	**1942**
Dry weather flow to GPI, wet weather flow to open ditches	**1942-1955**
Enclosure of open ditches	**1958**
Milk River Pumping Station & Original Retention Basin	**1958**
Kerby Road Pumping Station Upgrade	**1960**
Marter Road Pumping Station	**1960**
Milk River CSO RTB Expansion	**1992**
New Kerby Road Pumping Station	**1994**
Harper Woods direct connection to GPI	**1990**

3.5.2. Capacity

The sanitary flows being delivered to the Fox Creek Drain Enclosure for treatment in the City of Detroit WWTP were established by contract in 1961. The total flow rate of 127 cfs (see Figure 2-5 for breakdown) is pumped to the Fox Creek Drain Enclosure by the current KRPS. The capacity and components of the Milk River CSO RTB were established by the Project Plan for those facilities SRF No. 5057-03.

3.5.3. Operation

In many cases, NESDS equipment has been serviced and/or repaired numerous times, with replacement of components of the existing equipment as necessary. The auxiliary components of a pump station or a CSO RTB are equally as important as the main equipment for they protect

this equipment from the elements and/or the environment. Some of the items below may protect components in various means from decay, may improve energy efficiency, or lower operating costs which is a goal for institutions and industry alike.

3.6. Assessment of Existing NESDS (Milk River) Facilities

Various equipment and facilities are currently at or beyond their service life. This situation will continue to worsen over the time it takes to plan, design, and construct the improvement projects. The net effect of this will be declining operating hours, increased equipment and process shut down, and eventually (if not concurrently) a decline in the quality of the CSO RTB overflow quality.

Process and ancillary equipment is reviewed within the plan. Instrumentation and automation as well as the need for standby electrical power systems assessment are presented with each facility. This assessment groups the projects into four, five-year planning periods. Priority 1B improvements are proposed to be implemented within the first five-year period (2010-2014), Priority 2 improvements in the second five-year period (2015-2019), Priority 3 in the third five-year period (2020-2024), and Priority 4 in the last five-year planning period (2025-2030). This Project Plan Supplement No. 2 anticipates funding of the Priority 1B improvements beginning in the fourth quarter of the 2014 SRF PPL.

3.6.1. Milk River Pumping Station and CSO RTB

Since the 2009 Project Plan, a more comprehensive review has been conducted on the Milk River facilities, particularly in looking at outdated equipment and components which are no longer functioning as originally intended. The following text details changes to the prioritization of facility improvements. This list supersedes the recommended improvements in the 2009 Project Plan.

Flushing System Improvements - Compartment No. 1

There are two compartments at the Milk River CSO RTB. Compartment No. 1 receives incoming flow from the Milk River Pumping Station (MRPS) where it is stored in the 7.0 million gallon compartment to an elevation of 578.00 (depth = 20.0 feet) where it will then overflow into the 12.0 million gallon Compartment No. 2.

Compartment No. 1 serves as a first flush compartment retaining the majority of the solids. Due to the configuration of the compartment, flushing is labor intensive and time consuming. In order to effectively clean and maintain this compartment various automated flushing devices were reviewed. Several alternatives were considered for flushing system improvements including rehabilitation of the existing system, replacement of the existing system with tipping buckets, or replacement with flushing gates. Tipping buckets were found to not be feasible due to the basin geometry. Flushing gates and system rehabilitation were both found to be feasible alternatives. Cost-effectiveness analyses for both alternatives are presented in section 4.4.

The existing flushing system includes the following components:

- Two (2) flushing water pumps.
- 14-inch flushing header piping from the pumps that supplies flushing water to the flushing valve and operator connections.
- Fifteen (15) flushing valve connections consisting of a 12-inch motor operated butterfly valve in a 6-foot diameter manhole structure.
- Flushing headers with nozzles mounted along the bottom slab of Compartment No. 1.

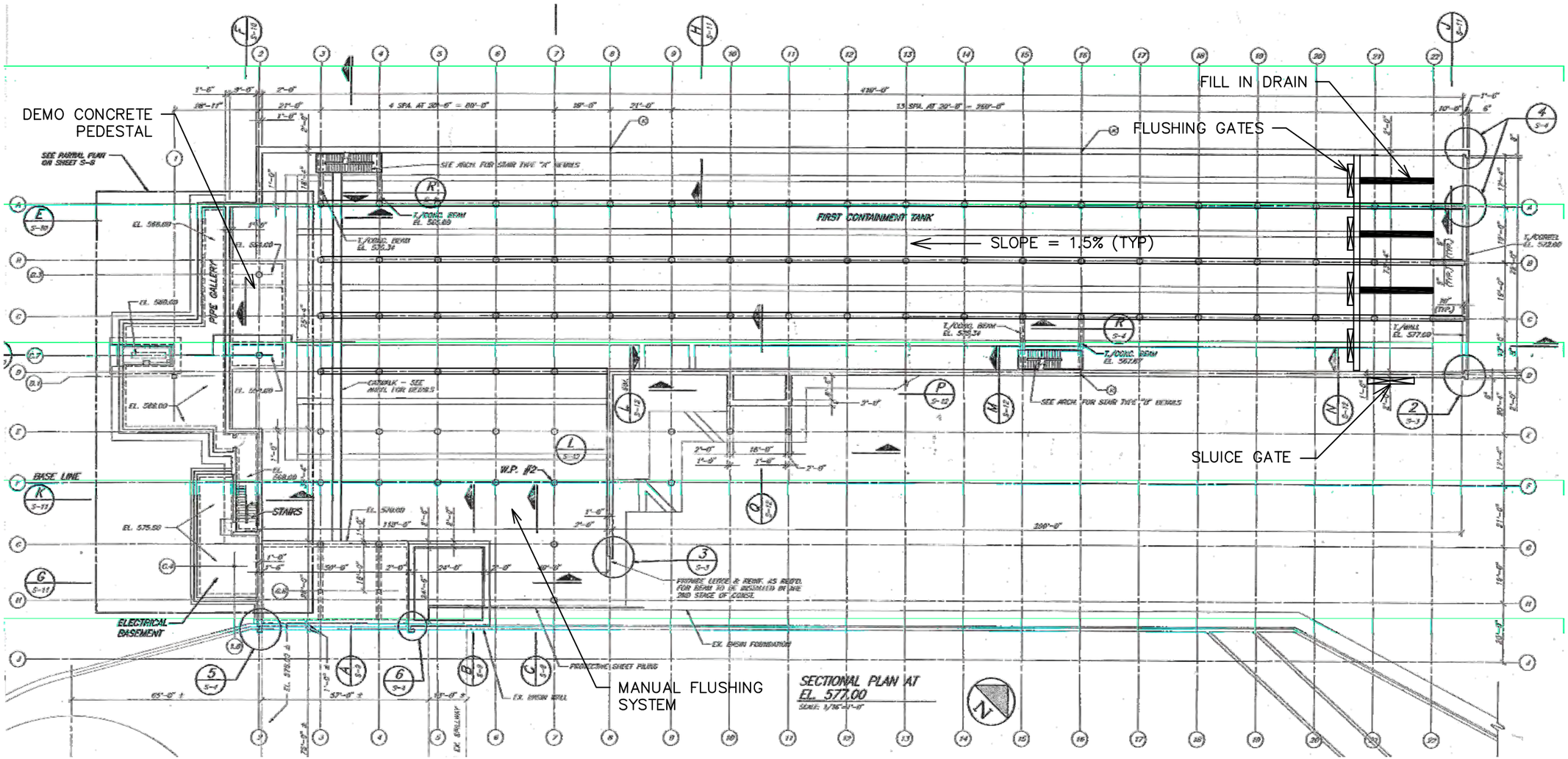
- Electrical conduit and wiring located in a common conduit to supply power to the individual valves.

Recognized problems with the system:

1. The flushing valve actuators for the Milk River CSO RTB Flushing Compartment No. 1 are currently inoperable, thus preventing the automated cleaning of Basin No. 1 following its usage.
2. Motor operators are corroded and inoperable.
3. The manhole structures are located adjacent to a local community Department of Public Works Facility and stored materials are often stored on top of the structures. Large quantities of the DPW's stored materials have ended up in the bottom of the manhole structures.
4. The structures are often buried and on-site drainage is routing storm water runoff into the manhole structures. Significant inflow into the manhole through manhole joints, adjusting rings and covers is visible. No method to drain the manhole structures appears to have been provided.
5. The single electrical conduit that supplies power and control to the motor operated flushing valves has settled and cracked in several locations, exposing the wiring to the elements.
6. Compartment No. 1 is accessed through an aluminum roof scuttle. These units have been damaged over the years and are no longer operating as intended. The closing mechanism is inoperable and the hatch does not stay shut without being weighed down.

PRIORITY 1B: Improvements recommended include (Figure 3-1):

- Remove the existing flushing piping and nozzles and replace with automated flushing gates.
- Modify the concrete sump area by the existing dewatering pumps to accommodate a flushing cycle.
- Provide a sluice gate opening from Compartment No. 2 to Compartment No. 1 flushing water area to allow for the use of water stored in Compartment No 2 for flushing.
- Remove the flushing valve actuators, piping and manhole structures.
- Replace the aluminum roof scuttles on Compartment No. 1.
- Modify existing walkways to accommodate the flushing system.



CONCEPTUAL FLUSHING GATE LAYOUT

REV	DATE	JOB NO. 20110177	OHM / HRC HUBBELL, ROTH & CLARK, INC Consulting Engineers	FIG. 3–1
		DATE 4–10–12		

Flushing System Improvements - Compartment No. 2

Compartment No. 2 receives overflow from Compartment No. 1 once it reaches its capacity of 7.0 million gallons. The second compartment utilizes a spray water nozzle system that flushes sediment to a sump that is then directed to Compartment No. 1 through four (4) sluice gates located at the sump. As with Compartment No. 1, several alternatives were considered for flushing system improvements including rehabilitation of the existing system, replacement of the existing system with tipping buckets, or replacement with flushing gates. Replacement and improvement of the existing system is recommended based on current operating practices associated with cleaning the compartment, along with the configuration of the basin which was problematic and expensive to retrofit for an automated flushing system. Therefore, system rehabilitation was determined to be the most feasible alternative. Cost-effectiveness analyses for both alternatives are presented in section 4.4.

The flushing system includes the following components (Figure 3-2):

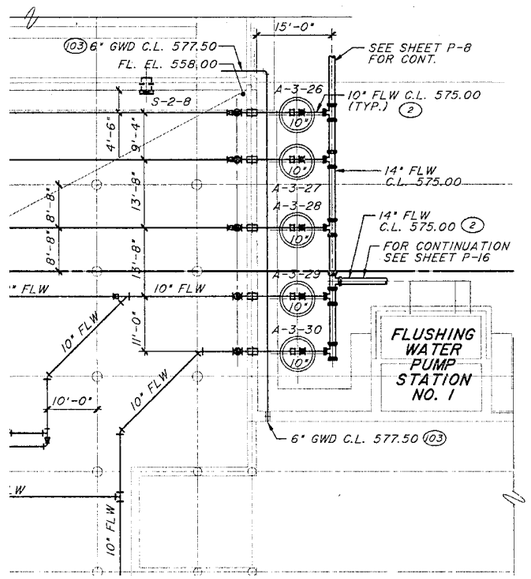
- Two (2) flushing water pumps that supply water for flushing from the aeration tank.
- 14-inch flushing header piping from the pumps that supplies flushing water to the flushing valve and operator connections.
- Twenty-seven (27) flushing valve connections consisting of a 12-inch motor operated butterfly valve in a 6-foot diameter manhole structure.
- Flushing headers with nozzles mounted along the bottom slab of Compartment No. 2.
- Electrical conduit and wiring located in a common conduit to supply power to the individual valves.
- The flushing valves operators for the Milk River CSO RTB Flushing Compartment No. 2 were replaced approximately seven (7) years ago and are still in good shape, with minimal corrosion present. During that upgrade, the operators and disconnect boxes were replaced.

Recognized problems with the system:

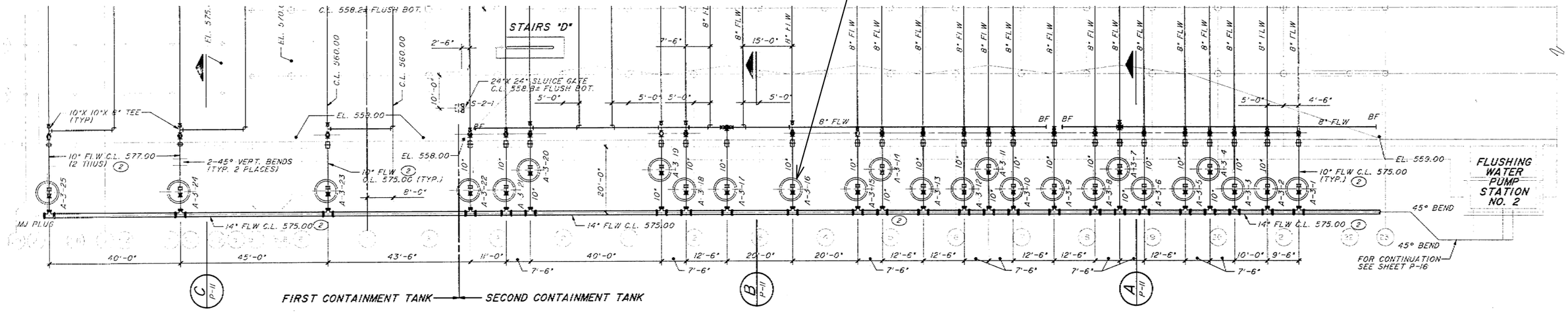
1. The existing flushing lines and nozzles may be filled with zebra mussels. The mussels are introduced into the flushing system from the recirculation system and flushing water pumps and have overtaken the system causing hydraulic restrictions in the pipeline and nozzles.
2. The manhole structures are located within a greenbelt area and flush with grade. Inflow into the manhole through manhole joints, adjusting rings and covers appear to be visible. Waterproofing the manhole structures may be prudent and minimize excess future maintenance issues.
3. No method to drain the manhole structures appears to have been provided.
4. The roof scuttles on Compartment No. 2 have similar issues with closing as Compartment No. 1 and should be replaced for safety concerns.

PRIORITY 1B: Improvements recommended include:

- The existing pipelines need to be thoroughly cleaned and the zebra mussel infestation removed.
- Remove and replace the existing nozzles with better efficiency ones.
- Replace the Flushing Pump guide rails and mounting system.
- Line the existing flushing valve/actuator structures for watertightness to protect the existing equipment.
- Provide drainage system for the existing flushing valve/actuator structures.
- Replace the aluminum roof scuttles on Compartment No. 1.



EXISTING FLUSHING STRUCTURE W/MOTOR OPERATED BUTTERFLY VALVE, TYPICAL (27)



FLUSHING COMPARTMENT #2 TANK PLAN

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DATE 6-15-11

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FIG. 3-2

Disinfection System Improvements

The sodium hypochlorite system has been in service since 1990 and system modifications are required to ensure reliable operation. The chemical system is a corrosive environment and the equipment is subjected to an abusive environment. It is the goal of these improvements to provide the infrastructure for system that is consistent in its operation with other similar facilities that the County operates. The Disinfection Building recently experienced flooding (2010) which resulted in the motors, actuators, switches and other electrical components being rewired. These components would not need to be replaced during the Priority 1B improvements. The sodium hypochlorite system includes (Figure 3-3):

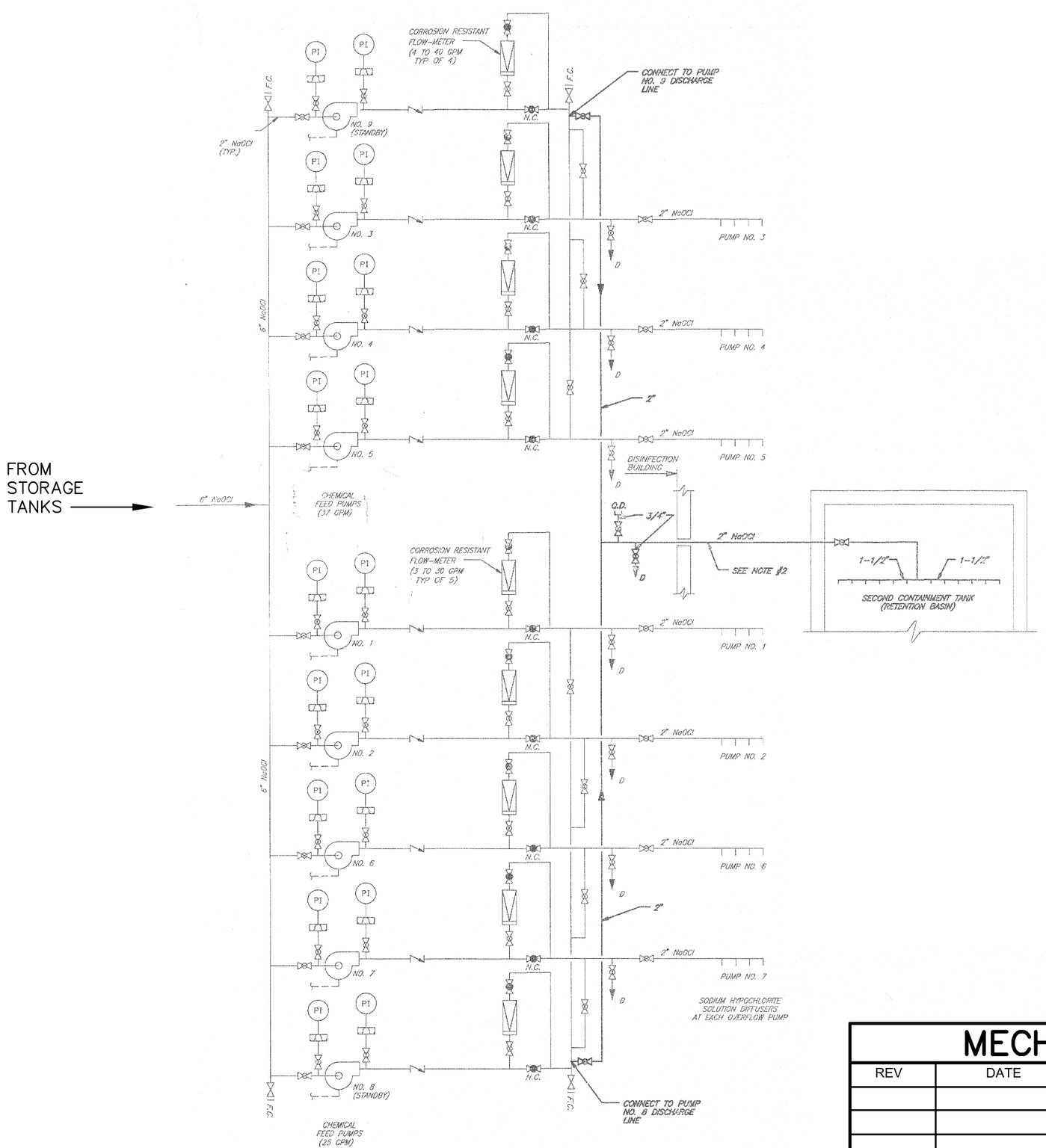
- Two 21,000 gallon bulk storage tanks with level sensors, fill, drain and vent lines.
- Four (4) chemical feed pumps rated for 37 gpm for Pump Nos. 3 – 5 with one chemical feed pump serving as a standby.
- Five (5) chemical feed pumps rated for 25 gpm for Pump Nos. 1 and 2, and 6 and 7, with one chemical feed pump serving as a standby.
- A site glass style flow meter rated for 0 to 40 gpm at each of the chemical feed pumps.

Known (visible) problems with the system:

1. Three of the pumps have been replaced over the years. The remaining pumps are in need of replacement due to the corrosive nature of the environment they serve.
2. The pumps are plagued with issues related to the pump priming. The self priming canisters that are used for this purpose leak and need to be replaced. Additionally, the installation of a check valve to the suction line is recommended to maintain the water column in the suction line and to aid in reducing the amount of priming required with each pump cycle.
3. The bulk storage drain line valves are faulty and are in need of replacement.
4. Each unloading line is dedicated to a bulk storage tank, thus eliminating operational flexibility. Pipe interconnections are recommended.
5. Each bulk storage tank has no method of mixing and no means to transfer chemical between tanks. Chemical transfer pumps are recommended at the facility.
6. Sample connections at the bulk storage should be provided to allow for operators to safely sample the chemical concentration. Accurate chemical concentration is essential to ensure the correct chemical dosage during wet weather events.
7. The emergency shower eyewash operates; however, it is not connected into the SCADA system to alert others during an emergency situation. Since the station often only has a single operator, this is critical for operator safety.

PRIORITY 1B: Improvements recommended include:

- Remove and replace the chemical feed pumps. An evaluation of available chemical feed pumps should be completed during design to ensure the appropriate technology and system is applied.
- Remove and replace piping, valves, and meters for each of the chemical feed pumps.
- Remove and replace self priming system, if required, depending upon the type of pumps selected.
- Install automatic bulk storage transfer system including automated sampling system.
- Reline the first sodium hypochlorite tank. The second tank was relined in 2012.
- Upgrade unloading facility and emergency eye/body wash station.
- Provide magnetic flow meters for chemical metering.
- Use the proposed upgraded SCADA system to allow for flow-paced sodium hypochlorite dosing (this will require utilizing inputs from the storm pumps, bleach pump flow meters, inputted bleach tank concentration data and inputted desired sodium hypochlorite dose).



MECHANICAL DISINFECTION SCHEMATIC

REV	DATE

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DATE 6-15-11

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FIG. 3-3

Sampling System Improvements

Influent and effluent sampling are provided by a single influent and single effluent pump. Effective sampling is critical to the operation of the facility in order to effectively maintain a total chlorine residual as required by NPDES permit during overflow events. The sampling system includes (Figure 3-4):

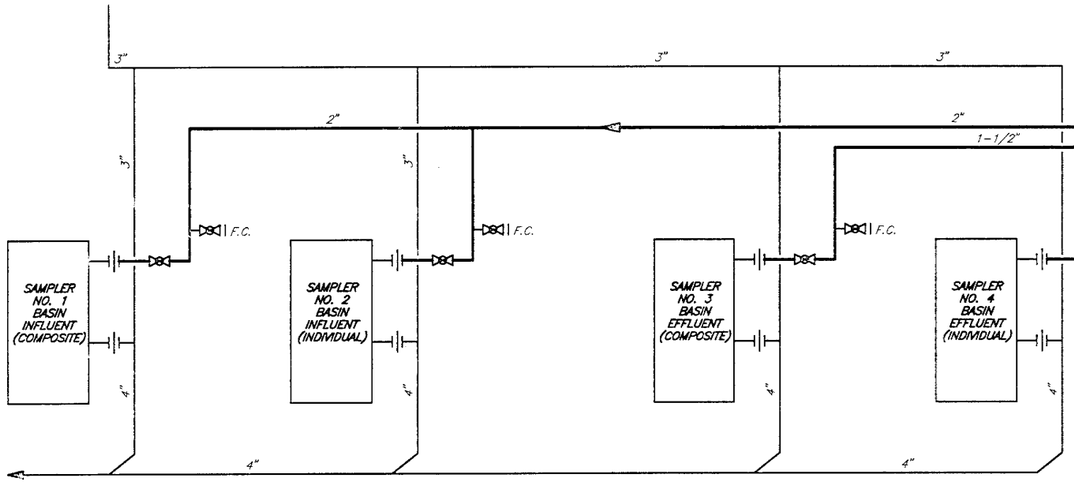
- One (1) influent submersible sampling pump located in the pump station wet well.
- One (1) effluent submersible sampling pump located at the effluent end of the aeration tank.
- Four sampler units designated for use with the following samples:
  - Influent Composite Sample
  - Influent Individual Sample
  - Effluent Composite Sample
  - Effluent Individual Sample

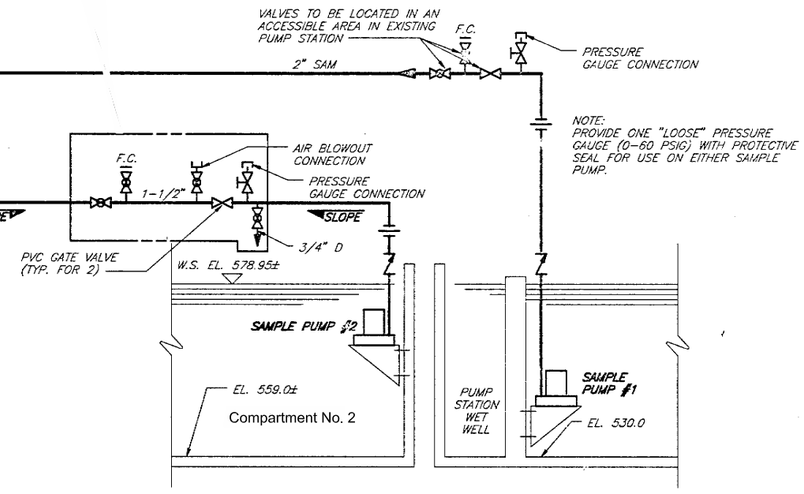
Known (visible) problems with the system:

1. Accessibility to pumps is difficult both for operation and maintenance. Access should be improved.
2. A method for addressing a pump failure should be considered at each sampling location.
3. The existing sampling units are not used. Modification of the existing units or replacement should be considered to accommodate the selected operating scheme.
4. The sampling system is integral to proper operation of the station along with the sodium hypochlorite system. Currently the two systems are separate independent systems that require constant operator attention for proper operation during wet weather events. A control system integrating the two systems is recommended that would reduce operator attention and provide the means to quickly evaluate and determine chemical dosages for the system.

PRIORITY 1B: Improvements recommended include:

- Improve access to sampling system.
- Provide a redundant second submersible pump (either installed or on the shelf) at each of the sampling locations; influent and effluent.
- Relocate the effluent sampling pump to provide better effluent sampling. The current location is not directly at the effluent weir. Consider use of a self-contained, prepackaged self-priming centrifugal pump station with redundant pumps at the proposed location.
- Provide permanent or portable hoisting equipment for the County's use during pump replacement at effluent pump
- Provide a means for dry weather testing in accordance with Wayne County Standard Operating Procedures at each sample location.
- Implement a post-construction monitoring program for Dissolved Oxygen (DO) and Total Residual Chlorine (TRC) downstream of the overflow to the Milk River. This program will include DO and TRC measurements during wet weather events to evaluate the effectiveness of the disinfection and aeration systems and will be used to satisfy the requirements of the draft ACO.





MECHANICAL SAMPLING SCHEMATIC

REV	DATE

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FIG. 3-4

Dewatering System Improvements

To dewater the RTB, four dewatering pumps and associated piping system is used. This flow, when combined with the sanitary component of the Milk River District, is limited to 22 cfs. The check valves installed on the vertical header of the pump discharge have failed due to the high solids content generated during flushing. The existing dewatering pipe gallery is illustrated in Figure 3-5. The discharge system schematic is illustrated in Figure 3-5a.

The Milk River facility has experienced difficulty with basin dewatering within a short period of time after a large rain event. This appears to be primarily related to continued high flows in the Grosse Pointe Interceptor. A modification to the Northeast System control strategy may be beneficial in minimizing the time for dewatering of the Milk River facility.

The Northeast System has defined peak flow capacities for each customer. During large rain events and subsequent dewatering of storage facilities, it is critical that each customer have its full wet weather flow allocation (see Figure 2-5). However, once a customer no longer has a need for their full capacity, it would be beneficial to adjust the procedures to maximize use of the total interceptor capacity.

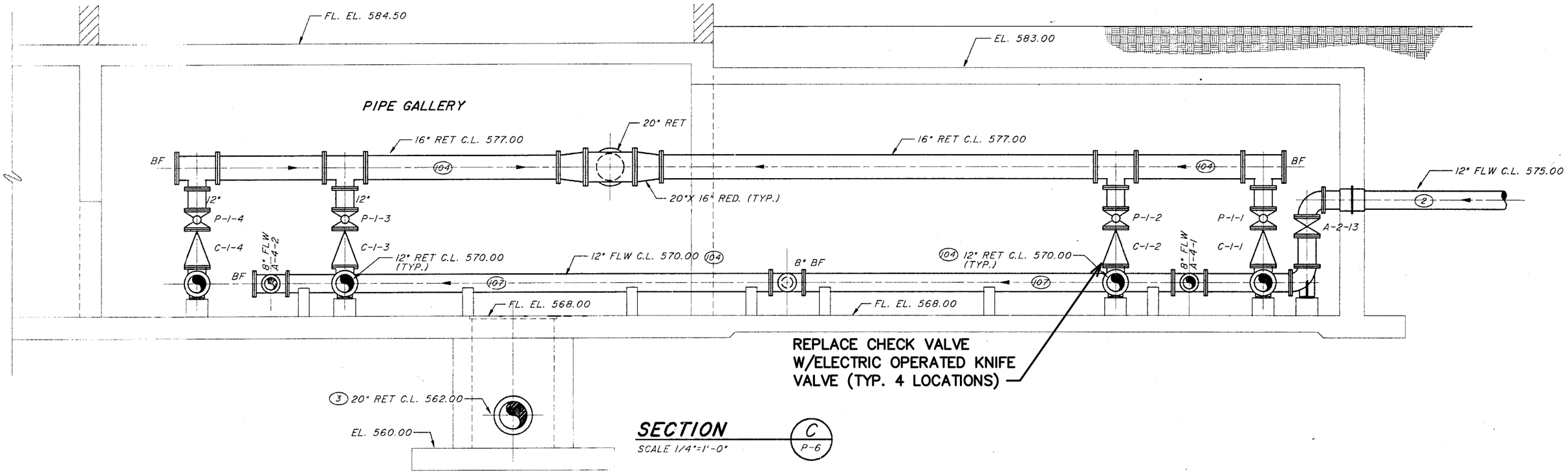
The overall Northeast System outlet flow is controlled by the Kerby Road Pumping Station (KRPS). If the KRPS is operating significantly below its firm capacity, additional flow could be allowed into the system. The customer with the largest available outlet capacity is the Southeast Macomb Sanitary District (SMSD). Their flows are metered at the Marter Road Pumping Station (MRPS). Data from the KRPS and MRPS are available at the Milk River facility. A suitable protocol could be developed to take advantage of available capacity. The protocol would need to allow for communication or alarms that would indicate the excess capacity is no longer available and require dewatering operations to revert to the standard protocol.

The Milk River System operators have previously attempted to test the above strategy. However, it appeared that the outlet pipe may be a constraint. A hydraulic analysis was performed to check the available capacity based on the available record drawings. It appears that the outlet should be capable of handling 20,000 gpm (45 cfs) with minor modifications to the system (including removal/replacement of meter hardware and system venting), which would reasonably match the available firm pumping capacity at the facility for simultaneous operation of the sanitary and dewatering pumps. Field investigations should be conducted to identify the hydraulic constraints in the gravity system downstream of the sanitary pumps and the dewatering pumps.

PRIORITY 1B: Improvements recommended include:

- Replace check valve(s) with electric operated valve(s) or remove and realign the discharge piping such that the check and isolation valve are in a horizontal alignment.
- Modify piping at the dewatering pumps to eliminate vertical placement of the check valve.
- Use the proposed upgraded SCADA system to allow the sanitary pumping component, in concert with the dewatering of the RTB, to be maximized to take full advantage of the available hydraulic capacity in the GPI and minimize the drawdown time of the RTB (this will require monitoring of flows from the KRPS and MRPS during the dewatering process).
- Enhance the hydraulic capacity of the sanitary piping and RTB dewatering piping to allow the pumping systems to operate at full capacity without any adverse hydraulic

conditions on site. Initial hydraulic calculations indicate that the piping system should have sufficient capacity, although the 24-inch magnetic meter has high velocities with the desired flow rates. A blockage in the piping system is a possibility. During design, it is recommended that field investigations be performed to aid in determining if there are any blockages or unexpected high head losses in the piping.. The testing could indicate a need for improvements such as the removal of the old Parshall flume if it had not been previously removed,, replacement of the existing magnetic meter (24-inch) immediately upstream of the discharge point to the GPI, or adding a venting system to the gravity sewer.



SECTION C P-6

SCALE 1/4"=1'-0"

DEWATERING PIPE GALLERY SECTION

REV	DATE

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DATE 6-15-11

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FIG. 3-5

REV	DESCRIPTION
1	ISSUED FOR BIDS
2	
3	
4	
5	

Area of potential hydraulic restriction (perform field investigation, sewer televising, and hydraulic analysis)

Remove/replace existing 24-inch mag meter

Remove existing Parshall flume

Install venting system to enhance hydraulic capacity

TO DETROIT WWTP
72" GROSSE POINTE INTERCEPTOR
EXISTING METER 0,000 GPM
36"
OVERFLOW WEIR
20" PUMPED BASIN DEWATERING
DEWATERING STRUCTURE
Gravity (sanitary pump discharge)
20" GRAVITY DISCHARGE
BCV-1-2
20" 0-10,000 GPM
20"
16"
16"
12" P-1-1 C-1-1
12" P-1-2 C-1-2
12" P-1-3 C-1-3
12" P-1-4 C-1-4
16" S-1-1
SANITARY / DEWATERING PUMPS 2500 GPM/EA.
20" 0-10,000 GPM
20"
16" S-1-2
BCV-1-1
EXIST. SANITARY PUMPS 5,000 GPM/EA.
EXIST. SANITARY WET WELL
EX. 16" TUNNEL SEWER
EXISTING MILK RIVER PUMPING STATION WET WELL
NO.1 179 MGD
NO.2 179 MGD
NO.3 266 MGD
NO.4 266 MGD
NO.5 266 MGD
NO.6 179 MGD
NO.7 179 MGD
EXIST. STORM PUMPS
FIRST FLUSH FLOW

AIR INTAKE FILTER SILENCER (TYP.)
INLET SILENCER (TYP.)
AERATION BLOWERS
NO. 1
NO. 2
NO. 3
DISCHARGE SILENCER (TYP.)
BLOWOFF VENT SILENCER
AIR RELIEF VALVE (TYP.)
18"
8"
16"
IB-2-1
IB-2-2
IB-2-3
DC-1-1
DC-1-2
DC-1-3
IB-1-1
IB-1-2
IB-1-3
30" AIR
BLOWER BUILDING

FIRST CONTAINMENT TANK 7.0 M.G.
6" GWD
6" GWD
30" AIR
S-3-3
S-3-4
S-3-2
S-3-1
A-5-1 C-3-1
A-5-2 C-3-2
A-5-3 C-3-3
FLW
S-2-5
S-2-6
S-2-7
S-2-8
GROUND WATER PUMP STATION
FLUSHING WATER PUMP STATION NO. 1
FLW
S-2-4
S-2-3
S-2-2
S-2-1
OVERFLOW WALL EL. 578.00 ~ 180 L.F.
SECOND CONTAINMENT TANK 12.0 M.G.
BAFFLE WALL
AERATION TANK
30"
24"
IB-3-1
IB-3-2
IB-3-3
IB-3-4
MILK RIVER
OUTLET WALL (TO MILK RIVER) EL. 576.00 ~ 120 L.F.
CONTAINMENT OVERFLOW WALL EL. 578.50 ~ 400 L.F.

DEWATERING SYSTEM – GRAVITY COMPONENT

REV	DATE

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DATE 6–15–11

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FIG. 3–5a

Sanitary Pump Station

Incoming sanitary flow to the station is routed through the pump station and directed to the sanitary pumps. There are three (3) existing pumps with a firm pumping capacity of 10,000 gallons per minute (22 cfs) that lift the flow to a discharge box where it flows by gravity to the Grosse Pointe Interceptor. When the incoming flow exceeds the firm capacity of the sanitary pumps, flow is diverted to the storm pump station where it is first screened and then held in the storm wetwell for pumping by the Storm Water Pumps.

There are several operational and maintenance concerns associated with the sanitary pumps. There currently is no means to isolate the sanitary pump wetwell from the storm pump wetwell. At one time a stop plate was used for this purpose, but the device has since failed and not been replaced. Replacement of the stop plate or installation of a permanently installed sluice gate should be considered in order for personnel to safely enter the structure for routine maintenance activities.

The sanitary pumps have been regularly replaced as required since 1989 and are in relatively good shape. The pump guide rails used to remove the pumps from the wetwell have deteriorated and are in need of replacement. Due to the corrosive nature of this area, replacement with corrosion resistant materials and anchors is recommended.

When the sanitary pumps need to be removed from the site for routine maintenance the hoist located at grade level is used to lift them from the wetwell. There is an existing 2 ton hoist used for the pump removal. The hoist and monorail are in good shape. However, it is recommended that the monorail be extended to the exterior door to aid in maintenance activities.

PRIORITY 1B: Improvements recommended include:

- Replace pump guide rails with stainless steel materials and anchors
- Extend the hoist system for the sanitary pumps.
- Install an isolation sluice gate or stop plate for pump station dewatering and maintenance

PRIORITY 3B: Improvements recommended include:

- The existing Raw Sewage ("sanitary") Pumps for the sanitary flow at the facility will have reached the end of their service life. Replace the 5,000 gpm pumps and associated piping/valving.

Storm Pump Station

When incoming flow exceeds the firm capacity of the sanitary pumps, flow is diverted to the storm pump station where it is first screened and then held in the storm wetwell. There are seven (7) storm water pumps that were originally installed in 1958. The station has a firm capacity of 1248 MGD with individual pump capacities as follows:

Pump No. 1	179 MGD
Pump No. 2	179 MGD
Pump No. 3	266 MGD
Pump No. 4	266 MGD
Pump No. 5	266 MGD
Pump No. 6	179 MGD
Pump No. 7	179 MGD

The Storm Pumps have been relatively maintenance free during their life. They have minimal run times on them and are in very good condition. Refurbishment and reconditioning of the

existing pumps is recommended over pump replacement, since reconditioning them is more cost-effective.

In 2010, the pump for Storm Pump #7 was removed, the motor repaired and pump reconditioned. In 2012, the County removed Storm Pump #3 to refurbish the motor.. Reconditioning the remaining five (5) pumps and six (6) motors that have not been rehabilitated is prudent to keep the facility in working order. This would include Storm Pumps #1 - #2 and #4 - #6, and motors for pumps #1 - #2, and #4 - #7.

The elevator installed in 1958 is in a seriously deteriorated condition. In addition, it is questionable if the operation of the elevator meets any current elevator code requirements. The entire elevator should be replaced including the cab, rails, cylinder, structural support, gate, motor and all electrical components to meet explosion proof requirements.

As the flow enters the Storm Pump Station it passes through a manual bar rack. This bar rack was installed in 1958 and is also at the end of its life. The bar rack should be demolished and replaced with a new unit, as the existing one can not be reconditioned.

PRIORITY 1B: Improvements recommended include:

- Recondition six (6) of the existing storm pump motors.
- Recondition five (5) of the existing storm pumps.
- Replace the elevator in the pump station.
- Replace the bar screens and manufacture a full replacement set of bar screens to have available on site for the next replacement.

Aeration System

Flow from the Second Containment Compartment that will be ultimately discharged to the Milk River, overflows the containment overflow wall into the Aeration Tank. Air is injected at the bottom of the tank to aid in raising the dissolved oxygen of the effluent prior to overflowing the outlet wall to the river.

There are several operational issues with the aeration system. First, the aeration tank ice protection system which consists of a small diameter pipe installed around the perimeter of the aeration tank has failed. The purpose of the system is to prevent ice buildup which could potentially damage the larger and more expensive aeration system. However, the ice protection system has failed in several locations and is either not discharging compressed air or is delivering it in excess. The perimeter piping should be repaired or replaced to protect the aeration equipment.

The aeration equipment consists of several air header drops that extend to the bottom of the aeration tank and extend across the bottom of the tank to uniformly distribute dissolved air to the overflow. One of the 18-inch drop headers has shifted and the pipe has been severely damaged. During the basis of design phase, it is recommended that the aeration tank be emptied and inspected to determine if additional issues are present.

PRIORITY 1B: Improvements recommended include:

- Dewater and inspect the aeration tank to identify deficiencies in the aeration diffuser system and the deicing piping. It is expected that the inspection will need to focus on connection hardware and piping support systems.
- Repair and reinforce piping for the air diffusion system.
- Repair and reinforce piping for the deicing system, including pipe anchoring.

Building Mechanical Improvements

The Milk River Facility has six buildings on the site. They are the Control Building (including "pedestrian bridge corridor" to the Pump Station); Maintenance Garage; Pump Station; Chemical Building; Blower Building; and a Yard Shed Structure. Overall, these structures are in fair condition, but specific problems have been noted.

Control Building:

The Control Building was built in the early 1990s. It contains an office area, toilet rooms, a locker room, a lunch/break room, mechanical room, electrical room and a janitor closet. It also contains the access stairway to reach the lower level of the piping gallery next to the First Flush Basin. The building veneer is 8" x 8" brick squares with concrete masonry unit (CMU) back-up. Weeps and thru wall flashings are visible. There is very little settlement cracking visible in the exterior masonry. Minor pointing of the exterior masonry joints is required. The interior walls are primarily painted CMU and are in good condition. The ceiling throughout the building is lay-in acoustical tile and gypsum board.

There is wood fascia trim on the eave edges and over the front door. The paint/stain coating is badly deteriorated but the wood is still in good condition. All exterior wood trim should be cleaned and repainted in order to further preserve the wood before it begins to degrade.

The windows are insulated glass in anodized frames with fixed lites on top and operable vented lites below in most openings. The main front door is glass store-front style with matching side lite in an anodized frame. The other exterior doors are painted hollow metal.

There is an elevated passageway from the Control Building to the Pump Station. This passageway is referred to as the "Bridge." There are significant differential settlement issues with the Bridge and this condition requires further investigation. The condition may have created the visible roof leaks inside the hallway at the ceiling and has created a tripping hazard. The stairway floor has heaved and is cracked. The drywall covering the corridor walls is also cracked at the transition point where the interior stair meets the elevated slab that extends over to the Pump Station.

The roof is a wood truss framed structure. The covering over the Control Building and the Bridge is an asphalt dimensional shingle. The roof appears to be in good condition except for the probable roof leak inside the Bridge as noted above.

At the northeast corner of the Control Building, it was noted that there is considerable cracking in the foundation tank wall/slab and this condition should be investigated and repaired.

PRIORITY 1B: Improvements recommended include:

- Repaint wood trim on doors and frames
- Implement miscellaneous repairs to foundation tank wall/slab and to passageway between the Control Building and Pump Station
- Minor pointing of exterior masonry joints

PRIORITY 2B: Improvements recommended include:

- Replace roof

PRIORITY 3B: Improvements recommended include:

- Replace doors and door hardware

Maintenance Garage:
The Maintenance Garage was built at the same time that the Control Building was constructed and is similar in appearance. This building is in good condition. Weeps and thru wall flashings are visible. There is very little settlement cracking visible in the exterior masonry. The interior walls are primarily painted CMU and are in good condition.

There are two steel overhead vehicle doors and one hollow metal man-door into the Garage. The finish on the doors and frames is deteriorating. The doors and frames should be painted to extend their useful life.

Like the Control Building, the roof is a wood truss framed structure with sheathing and dimensional shingles. The roof appears to be in good condition. The painted surface of the wood fascia trim on the eave edges is badly deteriorated but the wood is still in good condition. All exterior wood trim should be cleaned and repainted in order to further preserve the wood before it begins to degrade.

PRIORITY 1B: Improvements recommended include:

- Repaint wood trim on doors and frames

PRIORITY 2B: Improvements recommended include:

- Replace roof

PRIORITY 3B: Improvements recommended include:

- Replace doors and door hardware

Pump Station
The Pump Station is the original structure built in 1960. Overall, this building is in good condition but there has been considerable settlement around the perimeter as represented by the uneven walkway slabs and adjacent pavement. Some of these conditions create potential trip hazards around the Pump Station exterior. Before any site pavement is replaced however, the settlement condition needs to be investigated and corrected.

There are two steel overhead service doors. These overhead doors have little to no perimeter weatherseal, they are uninsulated and they are a source for the entry of vermin. Both of these doors should be replaced with new insulated coiling overhead doors.

The interior and exterior man doors are wood raised panel doors with single pane vision glass; they appear to be the original doors and hardware. The exterior doors are deteriorated. The exterior man doors and hardware should be replaced as a Priority 1 work item for both security and improved energy efficiency.

Most of the original wood windows have been replaced with anodized aluminum units with insulated glass. There is one window in the Elevator Room and one in the old office area that have not replaced. The painted finish on these units is peeling and they have no thermal characteristics. They should be replaced for consistency with the other windows and to reduce the long term maintenance of the original wood windows.

The interior walls are primarily painted CMU and are in good condition. The floors are vinyl tile and are well maintained. The structural roof deck in the Motor Room is concrete channel tile supported in a structural steel frame. The channel tile is painted and appears to be in good

condition with only a few small spalled areas visible. The channel tile should be monitored for crack development both in the main panel and in the channel support legs. The painted finish on the structural steel is in good condition but some areas are exhibiting peeling and are stained, possibly from past roof leaks.

The roof on the main portion of the Pump Station is a ballasted EPDM membrane and is reported to be in good condition except for occasional leaks at the roof curbs. This may be due to a flashing problem and should be investigated and corrected. The roof over the original Electrical Room in the Pump Station was replaced in 2007 with a fully adhered membrane roof and no leaks are reported.

During a site visit in March of 2012, it was observed that the curbs on this roof are leaking regularly. These should each be re-flashed and sealant applied to seams at the metallic joints. Also the cap on one of the vents is missing and should be replaced.

The copper gutter has been damaged at one end. The result is that a large water stain has developed on the brick beneath. This portion of gutter should be repaired.
The end diverter on one of the copper downspouts has fallen off resulting in rain water being directed onto the brick veneer and ice build-up on the wall during the winter months. Coincidentally, this particular downspout is directly over a sampling pipe. The ice build up interferes with the sampling process. This diverter needs to be replaced.

Exterior railings around the pump station near significant grade differentials (around exterior stair wells, etc.) are not properly anchored. The result is that many of the rails are unstable. These should either be replaced or the existing rails that are in good condition should be re-anchored.

An additional area of concern is the exterior steel stair on the east side of the Pump Station that accesses the old maintenance workroom. The stair is rusted and the first flight down from grade wobbles and is unstable to walk on. In fact, one tread has already collapsed. All of the below grade exterior walkways should be reviewed for structural integrity, stability and repairs or replacements made as part of the Pump Station upgrades.

An addition was added to the original Pump Station Electrical Switch Gear Room in the early 1990s at the same time that the Control Building was constructed. This structure exhibits significant settlement and water seepage at the floor. The construction documents indicate that the joint between the existing building wall and the new addition wall was to be ½ inch wide. It is currently 2 to 3 inches wide, with the addition structure appearing to be settling to the south, creating a wider gap at the top of the wall than at the bottom. There are cracks in the masonry wall above the double door on the south side. This needs to be investigated and corrected.

There are water stains on the walls and floor indicating considerable seepage in this area at one time. Water running out of the scupper on the south wall drains down the face of the brick and has saturated the masonry. Moss is now growing in this area and the mortar joints are discolored. The roof is an EPDM membrane that terminates under a metal parapet cap. There is debris, some pieces of stone ballast, sticks and leaves built up on this roof. This roof was not accessible (but was visible) during this assessment. Considering the debris on the roof and the interior water problems in this addition, the roof should be inspected for leaks. Additionally, the roof framing for this addition is plywood over wood joists. Considering the water infiltration problems evident at all three walls of this structure, the ceiling should be removed and the wood framing inspected for deterioration as part of the structural settlement investigation.

During a site visit in March of 2012, it was observed that the membrane roof had pulled away from the coping in several places, exposing the horizontal plywood substrate. The repair of this membrane and coping is urgent.

The mortar joint at the head of the highest exterior aluminum windows has cracked open and is now a source of water penetration. These joints will need to be tuckpointed.

The spiral staircase which begins a descent at the 557.0 elevation has corroded sufficiently to warrant replacement. The main structural support through the center of the stair is showing significant signs of deterioration. The rails are stainless steel and could be salvaged.
There are two ships ladders located in the lower level and one at the elevator shaft which are deteriorated and should be replaced.

In the main floor elevator room, there is a ships ladder that leads to a roof hatch at the lower roof level. Directly above the hatch is an exterior ships ladder leading to the higher roof level. This second ladder interferes with the operation of the hatch. Also, the current location is a hazard since it is located directly over the hatch opening but does not allow for a regular and continuous sequence of the rungs. The higher ladder should be relocated.

PRIORITY 1B: Improvements recommended include:

- Replace doors and door hardware
- Replace exterior steel stairs
- Miscellaneous tuckpointing at mortar joints
- Miscellaneous structural repairs at electrical switch gear room
- Roof repairs (rubber membrane and flashing)
- Replace ships ladders in the lower level and elevator shaft and relocate the higher ladder
- Replace windows in the elevator room and old office

PRIORITY 2B: Improvements recommended include:

- Replace roof

PRIORITY 3B: Improvements recommended include:

- Paint door and window frames

<u>Chemical Building (Disinfection Building):</u>
The Chemical Building was built in the early 1990's. Overall, this building is in good condition. The building is brick veneer with masonry concrete unit (CMU) back-up. Weeps and thru wall flashings are visible. There is very little settlement cracking visible in the exterior masonry. Minor pointing of the exterior masonry joints is required. The interior walls are primarily painted CMU and are in good condition. The ceiling is painted precast planks.

The roof is a ballasted membrane roof with no leaks reported. The interior underside of the precast is in good condition with no visible signs of roof problems.

During a site visit in March of 2012, it was observed that the perimeter concrete walkway has settled considerably. The source of the settlement should be determined and corrected and the walkway should either be leveled or replaced.

A portion of the membrane roof appears to be pulling away from the coping. This area should be repaired.

PRIORITY 1B: Improvements recommended include:

- Level or replace perimeter concrete walkway
- Implement features for improving the walkway on the property which will direct stormwater runoff onto pervious areas

PRIORITY 2B: Improvements recommended include:

- Replace roof

PRIORITY 3B: Improvements recommended include:

- Paint wood trim

Blower Building:

The Blower Building was built in the mid 1990's along with the Control Building and Maintenance Garage. The building veneer is 8" x 8" brick squares with sound attenuating masonry concrete unit (CMU) back-up. Weeps and thru wall flashings are visible. There is very little settlement cracking visible in the exterior masonry. Minor pointing of the exterior masonry joints is required. The interior walls are painted CMU and are in good condition. The CMU in the Electrical Room are plain faced units and the CMU in the Blower Room are acoustical units. The ceiling throughout the building is exposed, painted metal deck. In general, the painted interior surfaces are in good condition except for sections of the metal deck in the Blower Room along the exterior walls where the paint has peeled off of the underside of the deck, exposing the bare metal.

There are fixed glass windows in the Electrical Room that match the typical insulated glass units used in the Control Building. The interior and exterior man doors are hollow metal. There is one overhead sectional door in the Blower Room.

The roof is a ballasted EPDM membrane that appears to be in good condition with no report leaks.

PRIORITY 2B: Improvements recommended include:

- Paint exterior walls
- Replace roof

PRIORITY 3B: Improvements recommended include:

- Replace doors and hardware

Yard Shed

There is a yard shed on the property that houses lawn equipment and miscellaneous tools. The construction and detailing appears to be similar to the Pump Station so this building is probably 1960 vintage. The exterior is brick veneer over concrete masonry unit back-up. The wood man door, wood windows and overhead garage door are functional condition but could use to be painted to extend their useful life. The roof appears to be precast concrete with a stucco-like cement finish in the underside. This building is used as a storage shed for the facility and its continued use is no longer desired. Demolition of this building is recommended due to its deterioration and age.

During a site visit in March of 2012, it was observed that in many locations the asphalt paving is deteriorating and should be repaired or replaced.

PRIORITY 2B: Improvements recommended include:

- Demolition of the building
- Repair asphalt paving around the demolished building
- Implement features on the property which will direct stormwater runoff onto pervious areas

Building Electrical Improvements

The buildings were reviewed for electrical considerations. Improvements are needed at the facility to bring the electrical system into compliance with the latest National Electrical Code (NEC), to improve reliability, to increase energy efficiency and to improve worker safety.

Control Building:

The Control Building was built in the mid-1990s. It contains an office area, toilet rooms, a locker room, a lunch/break room, mechanical room, electrical room and a janitor closet. It also contains the access stairway to reach the lower level of the piping gallery next to the containment tank. There is an elevated passageway from the Control Building to the Pump Station. This passageway is referred to as the "Bridge." All of the electrical equipment in this building is approximately 18 years old and is in good and serviceable condition, however, emergency lighting is outdated and no arc flash labels are present on electrical enclosures.

PRIORITY 1B: Improvements recommended include:

- Add a central emergency lighting inverter system to replace the emergency lighting battery units throughout the building and perform an arc flash hazards assessment study with application of warning labels on all electrical cabinets, panels, and enclosures. Also recommended is the replacement of lighting switches with occupancy sensor switches in areas where appropriate.

Pump station:

The Pump Station was built in 1960 and improvements to some of the electrical equipment were completed in 2004. The electrical distribution equipment consists of two line-ups of 4800 volt primary switchgear (original General Electric equipment, modified in 2004), each feeding a 4800 volt primary fused switch (added in the mid-1990s for the Control Building and Blower Building additions), a 4800 to 480 volts power transformer (replaced in 2004), a switchgear battery system, and miscellaneous low voltage distribution panels and switches. The primary switchgear contains the large (1500 HP and 1750 HP) storm pump synchronous motor starter circuit breakers, two main circuit breakers and metering equipment for the two Detroit Edison services, a tie circuit breaker, and a power transformer feeder circuit breaker. This equipment is original 1960 construction with modifications in 2004 to add new motor monitoring relays and control devices for the storm pump motor circuit breakers. Most of the low voltage distribution equipment is from the original installation.

Lighting in the Pump Station consists of incandescent high-bay industrial fixtures in the motor room, similar incandescent fixtures in the electrical room, wall-mounted incandescent fixtures on the exterior, and a mixture of incandescent and fluorescent fixtures in other areas. Most of the original exterior light fixtures are broken and not functional. The emergency lighting system is outdated and no arc flash labels are present on electrical equipment enclosures.

PRIORITY 1B: Improvements recommended include:

- Replace the original (50 year old) primary switchgear line-ups to provide reliable and serviceable main service equipment and pump starter equipment. The switchgear battery

system is recommended for replacement, as it too is beyond its normal service life (appears to also be 50 years old). Power and lighting panel boards are beyond their normal service lives and are recommended for replacement, along with the lighting transformers.

- Add a central emergency lighting inverter system to replace the emergency lighting battery units throughout the building and perform an arc flash hazards assessment study with application of warning labels on all electrical cabinets, panels, and enclosures.
- Other lighting system improvements include the replacement of incandescent lighting sources with more efficient LED, induction or fluorescent fixtures. LED or induction high bay lighting fixtures are recommended for the motor room, industrial 4 foot fluorescent fixtures are recommended for the electrical room, LED or induction wall-pack fixtures are recommended for the building exterior, roof mounted LED or induction flood lights are recommended for the Stilling Well area, explosion-proof LED or induction lights are recommended for the Sanitary Pump area and the elevator/ landing areas, and miscellaneous incandescent lamps throughout the facility are recommended to be replaced with compact fluorescent lamps, LED or induction lights. Also recommended is the replacement of lighting switches with occupancy sensor switches in areas where appropriate.
- Remove abandoned electrical devices, equipment, raceways, and wiring is recommended to improve the overall appearance of the facilities and avoid confusion during maintenance, repair, and service operations.

Chemical Building:

The Chemical Building was constructed prior to the Control Building. The majority of the electrical equipment in this building is approximately 20 years old and is in good and serviceable condition. Improvements in 2004 included the addition of variable frequency drives for the hypochlorite pumps and controls improvements. Emergency lighting is, however, outdated and no arc flash labels are present on electrical enclosures. In 2010, it should be noted that there was a flooding incident at the Chemical Building that flooded the lower levels of the building. Due to this event, the motors, switches and actuators wiring had to be replaced. Improvements to the wiring would not be anticipated unless improvements to the equipment are required.

PRIORITY 1B: Improvements recommended include:

- Add a central emergency lighting inverter system to replace the emergency lighting battery units throughout the building and perform an arc flash hazards assessment study with application of warning labels on all electrical cabinets, panels, and enclosures. Other recommended improvements include the replacement of lighting switches with occupancy sensor switches in areas where appropriate.

Blower Building:

The Blower Building was constructed at the same time as the Control Building (1994). All of the electrical equipment in this building is approximately 18 years old. The majority of the electrical equipment is in good and serviceable condition, however, a recent electrical fire in one of the medium voltage blower motor starters, indicates a need to evaluate the two remaining motor starters, which is being addressed by Wayne County outside of this Project Plan as part of ongoing maintenance work. Emergency lighting is, however, outdated and no arc flash labels are present on electrical enclosures.

PRIORITY 1B: Improvements recommended include:

- Recommended improvements include the addition of a central emergency lighting inverter system to replace the emergency lighting battery units throughout the building,

and perform an arc flash hazards assessment study with application of warning labels on all electrical cabinets, panels, and enclosures. Also recommended is the replacement of lighting switches with occupancy sensor switches in areas where appropriate.

Maintenance Garage:
The Maintenance Garage was built at the same time the Control Building was constructed and is similar in appearance. All of the electrical equipment in this building is approximately 18 years old and is in good and serviceable condition, however, emergency lighting is outdated and no arc flash labels are present on electric enclosures.

PRIORITY 1B: Improvements recommended include:

- Add self-diagnostic emergency lighting units to replace the emergency lighting battery units throughout the building and perform an arc flash hazards assessment study with application of warning labels on all electrical cabinets, panels, and enclosures.

Yard Shed:
The Yard Shed appears to have been a part of the original 1960 Pump Station facilities. It does not contain any electrical distribution equipment.

PRIORITY 2B: Improvements recommended include:

- Electrical components will be demolished as part of the building demolition.

SCADA System
There is an existing PLC-based control system for the Recirculation Pump Station and the Retention and Treatment Basin that was originally intended to provide unattended operation of facility equipment. The PLC-based control system receives key process data via a dedicated leased telephone line from the Harper Woods valve and meter station chamber. The Milk River RTB control system transmits system data to the Downriver Wastewater Treatment Facility for remote monitoring and control. At the Milk River RTB, there are two local control system Operator Interface Terminals (OITs). The PLC-based control system consists of five (5) Allen-Bradley ControLogix Programmable Automation Controllers (PAC) and one (1) MicroLogix PLC. Instrumentation is nearing or beyond its service life. Operators are not able to rely on the SCADA as much as desired due to failures with automatic equipment control and communications interruptions.

This site includes a Nova Lynx® precipitation gauge installed approximately in year 2000 that is not currently connected to the existing control system.

PRIORITY 1B: Improvements recommended include:

- Retain the existing Allen-Bradley PLC hardware
- Replace the existing instrumentation nearing or beyond its service life.
- Replace the communications equipment and service with HDSL as primary communications and cellular as backup communications subject to service availability.
- Replace and upgrade the existing internal network communications cabling and conduits between control panels, network panels and SCADA servers.
- Replace the existing SCADA terminals nearing or beyond their service life.
- Replace the existing Wonderware SCADA software with the WCDPS Standard software, GE iFIX SCADA software (latest available version), and integrate the RTB control system with the WCDPS Downriver Wastewater Treatment Facility SCADA System.
- Integrate the existing rain gauge into the SCADA system

- Reprogram the existing PLCs as necessary to provide the required level of facility automation and reliable unattended operation that shall include flow paced sodium hypochlorite disinfection.

3.6.2. Milk River Recirculation System

Recommended improvements to the existing Recirculation System are included in this Project Plan in order that the Plan provides a comprehensive evaluation of all costs necessary to maintain the Milk River CSO RTB facilities in compliance with NPDES permit requirements.

The NPDES permit issued for the Milk River facility at the time that the CSO Control Program was being implemented contained a requirement to "…conduct a study to verify the validity of the Dissolved Oxygen models used to indicate that combined sewer discharges resulting from the one-year one-hour storm would not cause a violation of the minimum dissolved oxygen standard of 5.0 mg/l in the river and bay". Despite several studies, this issue has not yet been resolved and will need to be dealt with as part of the improvements.

The original plan of improvements proposed in 1990 included an extension of the recirculation pipe further into Lake St. Clair so that the recirculation flow would be drawn from deeper, higher quality water. As the design and construction work was initiated, actual costs were coming in higher than originally anticipated and the need for the recirculation pipe extension was questioned. A decision was made to defer the extension until after the other improvements were constructed, and the need for the extension could be determined based on good data.

Dissolved oxygen (DO) monitoring was conducted in 1994 and 1995 and a study was prepared which concluded that the recirculation extension was not required, but that the aeration system should be extended after significant CSO events. MDEQ did not concur with the conclusion, which led to further monitoring in 2001, 2004, 2005 and 2007. The differences of opinion were not resolved by the additional data.

All parties have agreed that resolution of the DO issue should occur as part of the current project. Since the prior data collection was affected by issues that are being resolved by the currently proposed improvement programs on both the Milk River System and the Northeast System, it is proposed that one final sampling program be conducted after completion of the projects.

One of the concerns that made resolution of this issue difficult is the high cost of implementing the recirculation pipe extension. Although a detailed cost estimate has not been prepared, a feasibility level estimate of $7 million construction cost was identified. Considering that the DO studies have shown that standards are close to being met, it is a high cost to contemplate. Since the original intake extension was proposed, a new technology has been developed, called DynamOx. Field tests have been conducted on the Rouge River demonstrating that it has good potential for resolving the DO issue at Milk River. Costs for implementing DynamOx would depend upon the details that would be developed as part of a detailed evaluation, but generally are expected to be an order of magnitude less than the intake extension.

Current expectations are that DO monitoring will be conducted in the summer of 2017, after completion of the improvement projects. The aeration system will continue to be operated

after large CSO events to maintain DO levels in the Milk River. Prior data indicated that duration of 5 days would have been required for one particular event. If the sampling program does not demonstrate attainment of the DO standard, evaluation and implementation of further improvements would commence.

Hydraulic modification improvements are required at the Recirculation Pumping Station (RPS) in order to allow adequate flow to the RPS pump suctions during low water levels in Lake St. Clair.

PRIORITY 1B: Improvements recommended include (see Figure 3-6):

- Inspect and clean intake pipe and crib.
- Install automated (mechanically-raked) bar screen system.
- Retain the existing Allen-Bradley PLC hardware. Replace the communications equipment and service with HDSL as primary communications and cellular as backup communications subject to service availability.
- Replace and upgrade the existing internal network communications cabling and conduits between control panels, network panels and SCADA servers.
- Replace the existing Wonderware SCADA software with the WCDPS Standard software, GE iFIX SCADA software (latest available version), and integrate the RTB control system with the WCDPS Downriver Wastewater Treatment Facility SCADA System. Reprogram the existing PLCs as necessary to provide the required level of facility automation and reliable unattended operation that shall include flow pacing of the solution feed pumps to the recirculation pump operation for Quagga/Zebra Mussel control.
- Remove the existing 48-inch motorized butterfly valve (B-2-1) and the existing 60-inch x 48-inch and 48-inch x 60-inch increase reducers connecting the screen chamber with the pump suction wet well. Replace the 48-inch butterfly valve with a 60-inch motorized knife gate or plug valve and 60-inch connecting pipe to provide unrestricted flow between the two chambers.
- Remove the existing 16-inch butterfly valve (B-4-1) on the pump discharge line used to dewater the Milk River channel. Replace the butterfly valve with a 16-inch plug valve and recondition or replace the existing motorized operator.
- Remove the 36-inch butterfly valve (B-3-1) and replace with a more suitable unrestricted flow valve (i.e., plug valve). Recondition or replace the existing motorized operator.
- Install a sluice gate at the 60-inch intake connection to the screen facility to provide isolation of the screen area for maintenance.
- Improvements to provide adequate zebra mussel control for the Recirculation System include:
  - Relocate the sodium hypochlorite application point from the existing wet well of the Recirculation Pumping Station to a new point of application at the inlet to the intake point located approximately 2,100 linear feet from the pumping station in Lake St. Clair.
  - Provide and install a double contained pipe, intended for NaOCl solution (1" to 1-2" ID, carrier pipe) from the Recirculation Water Pump Station, ground-buried, out to the inlet to the 72" intake pipe. Provide a diffuser just inside the inlet grate.
  - Store the NaOCl at the Recirculation Water Pump Station.
  - Provide three (3) metering pumps, 5.85 gallon/hour capacity each, with manual adjustable capacity. Normally set and run each pump at 3.9 gph (67% of rated capacity). Larger pump gives ability to modify dose range from 0.5 to 1.5 ppm.

PRIORITY 2B: Improvements recommended include:

- Install a new pump to add redundancy for recirculation system

- SCADA system upgrades for integration of controls for a third pump

PRIORITY 4B: Improvements recommended include:

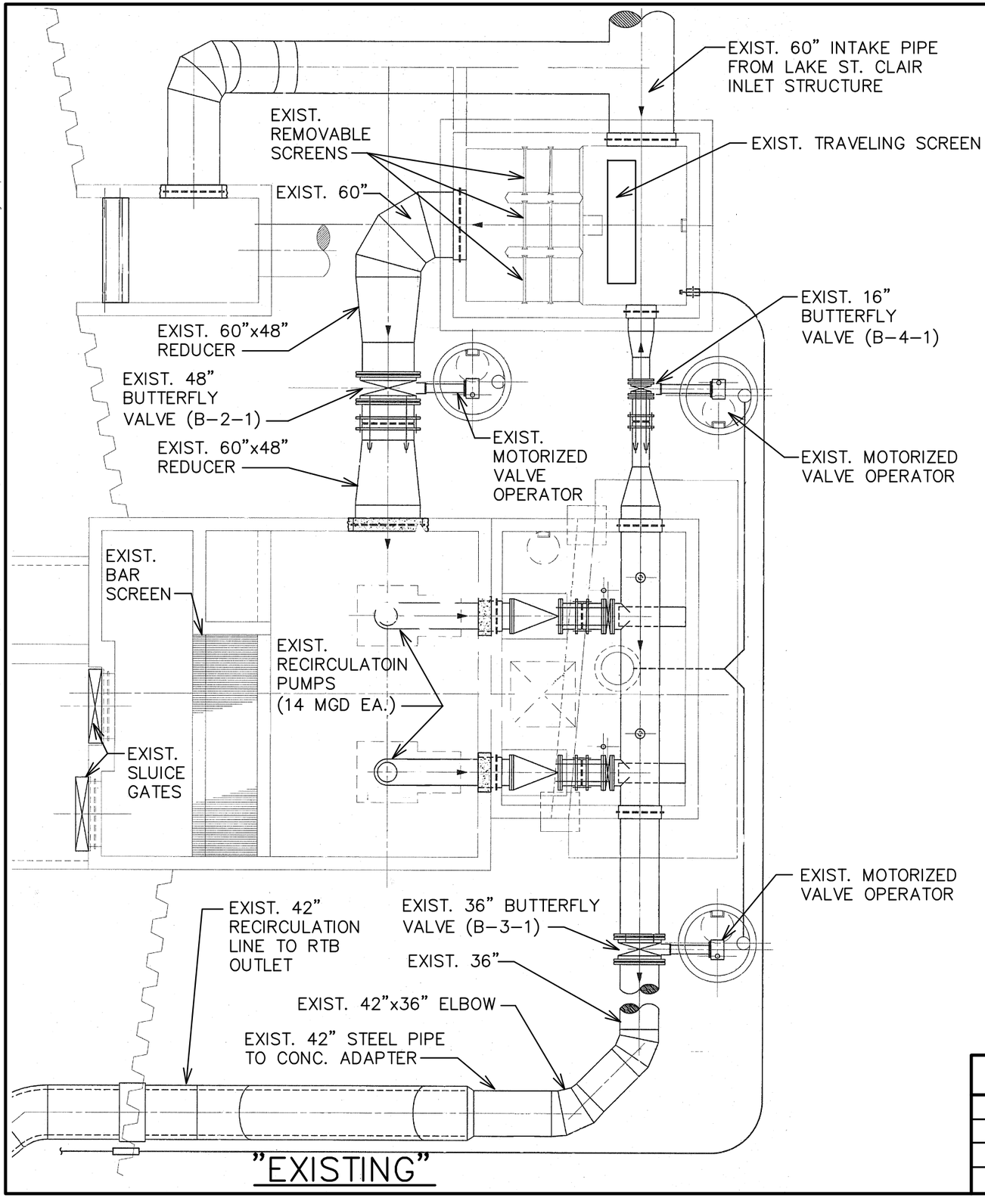
- Replace the recirculation station intake pipe

3.6.3. Milk River Drain Enclosure

The Milk River Drain Enclosure was constructed in 1958. There is approximately 5,860 lineal feet of circular tunnel ranging in size from 10-foot diameter to 16-foot diameter which needs to have its condition assessed.

PRIORITY 2B: Improvements recommended include:

- Conduct a condition assessment of the drain enclosure
- Perform any necessary repairs to the drain enclosure



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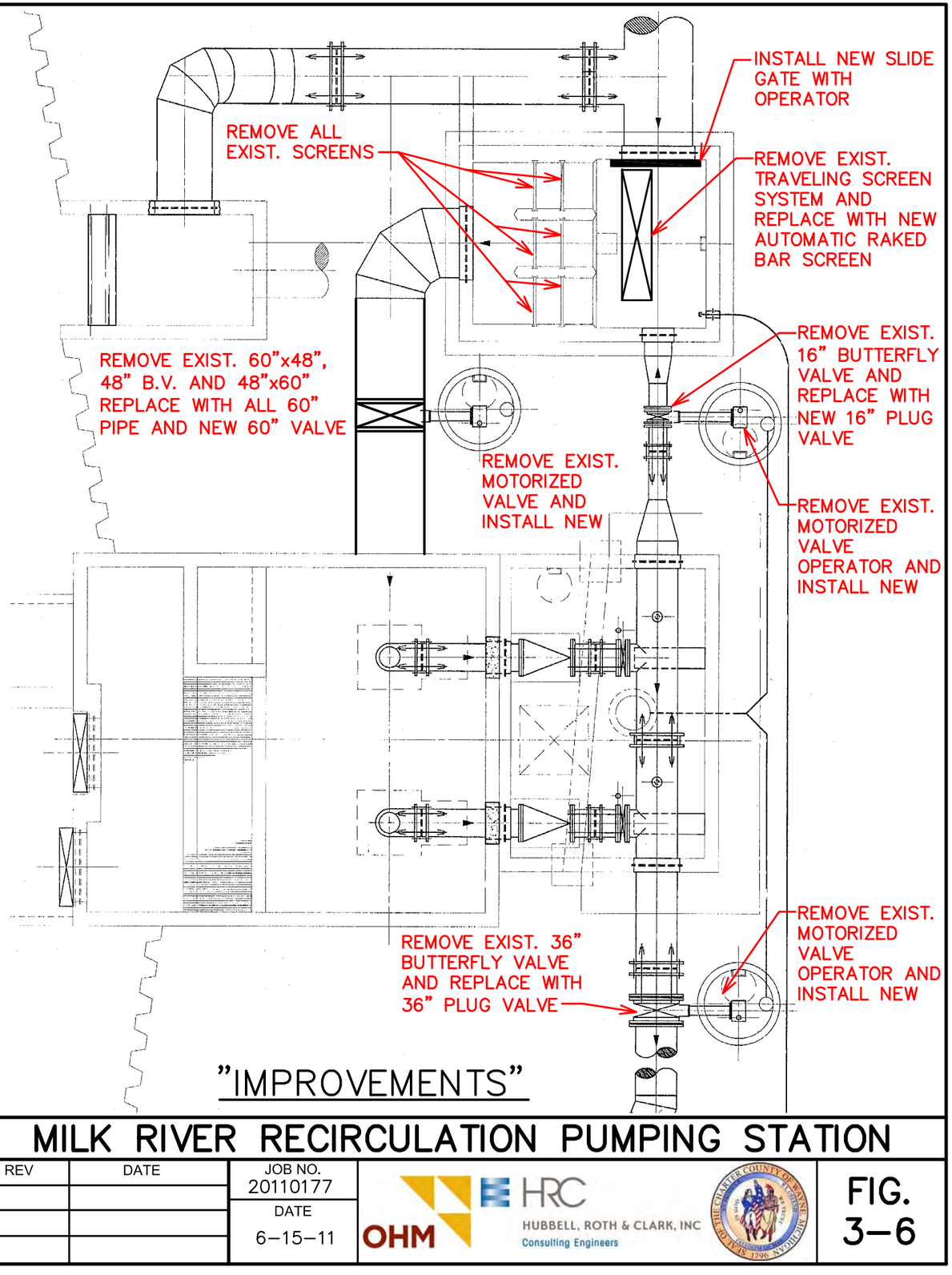

"IMPROVEMENTS"

MILK RIVER RECIRCULATION PUMPING STATION

REV	DATE

JOB NO. 20110177

DATE 6-15-11

OHM HRC HUBBELL, ROTH & CLARK, INC Consulting Engineers

FIG. 3-6

Section 4 - Alternative Analysis

4.1. General

Section 3 presented areas of improvements required to meet the anticipated requirements of the proposed MRIDDD ACO and to ensure long-term reliable operation of the NESDS. This Section includes the presentation and analysis of alternatives to those deficiencies identified as Priority 1B (FY2014/2015) improvements for the MRIDDD.

Alternatives for the recommended improvements are developed and discussed where appropriate. The alternatives are reviewed for feasibility, cost effectiveness, and environmental impact. Where singular components of a system are to be addressed (motors, gates, pumps, etc.), alternatives may be limited to replacement or rehabilitation. These items are generally included as a common component to the alternatives reviewed for overall system improvement.

Total project costs, including 20-year present value life cycle costs, for the listed alternatives are included in this Section. All costs were estimated in April 2012 dollars and include an allowance for engineering, legal, and administrative costs, and a contingency due to the preliminary nature of the estimates made. "Initial installation costs" are estimated for construction in 2014 and 2015.

4.2. Regional Alternatives

The capacity of the Detroit Sewage Disposal System (DSDS) sewer system and Detroit Wastewater Treatment Facility (DWTF) are sufficient to satisfy the projected future needs of the Service Area. The options to construct a new regional wastewater treatment facility, or to connect to another existing sewage disposal system, are not feasible due to the size of this system and are not considered further.

4.3. "No Action" Alternatives

This alternative was considered for each work item, but was not reviewed in detail because of the existing compliance, operational and maintenance issues at these facilities. The improvements associated with the project reviewed in this Section are necessary to maintain the facilities in order to meet the terms and conditions of the ACO, NPDES limitations, comply with current Ten States Standards, and minimize operation costs. "No action" would lead to increased maintenance and further deterioration of the facilities until they are no longer functional. This would result in NPDES violations and non-compliance with the draft ACO.

4.3.1. "No Action" Alternative Improvements

Priority 1 – Improvements recommended for which "No Action" is the only alternative include:

- Milk River Pumping Station and CSO RTB
  - Recirculation system improvements
  - Sodium hypochlorite system improvements
  - Sampling system improvements
  - Painting
  - Doors and hardware
  - Miscellaneous architectural/structural improvements
  - Heating and ventilation improvements
  - All recommended electrical improvements
  - SCADA

4.4. Flushing Compartment Improvement Alternatives

Alternatives to the flushing system improvements may be considered at the detail design phase. The alternatives listed below would likely achieve the same operational objectives with varying impacts on the initial capital investment and ongoing O&M costs.

4.4.1. Alternative Option for Flushing Compartment No. 1 - Upgrade and optimize existing spray nozzle system

This alternative was the preferred option in the 2009 SRF for the MRRTB. Since that time, it has become apparent that the components of the existing spray nozzle system (pumps, valves, controls, and electrical wiring) are subject to unfavorable environmental conditions that will make the ongoing maintenance problematic. As such, flushing alternatives (including the flushing gates) were explored in order to find solutions with lower life cycle costs.

PRIORITY 1B [ALTERNATE 1]: Upgrade and Optimize Existing Spray Nozzle System:

- Clean existing flushing system pipelines and remove zebra mussel infestation and other obstructions.
- Remove and replace the existing spray nozzles with higher efficiency nozzles that are designed to prevent clogging.
- Replace the valve and valve actuators at each of the access structures (18 locations).
- Repair electrical and instrumentation wiring and provide waterproof connections.
- Replace electrical control boxes that have deteriorated due to the environment (18 locations).
- Replace the Flushing Pump guide rails and mounting system.
- Line the existing flushing valve/actuator structures (manholes) for watertightness to protect the existing equipment.
- Provide a drainage system for the existing flushing valve/actuator structures.
- Remove accumulated debris from access structures.

After further analysis, this alternative was determined to be less ideal, primarily due to the expected labor and materials necessary to maintain this complex system. The spray nozzles would need to be monitored and replaced (due to anticipated Zebra Mussel infestation and other debris) on a frequent basis to ensure adequate flushing capability. Additionally, since Compartment No. 1 serves as a first flush sedimentation basin, the basin typically retains a large quantity of solids. Discussions with Wayne County indicated that although the nozzle flushing system, when adequately functioning, does remove a significant component of the accumulated solids, manual cleaning with fire hoses is typically necessary to ensure adequate tank cleanout.

Although the initial capital cost of this alternative is lower than the preferred option, the ongoing costs to maintain the system in working order will make it cost-prohibitive relative to the preferred option.

Flushing Compartment No. 1 *ALTERNATE* - Upgrade Spray Nozzle System

Initial Installation Cost:	$ 800,000 (with design and contingencies)
20-year Life Cycle Cost:	$ 1,060,000*
Total Cost:	$ 1,860,000

* *PRESENT VALUE: Assume 5-year replacement cycle for spray nozzles (4 replacement cycles at $75,000 per cycle + 20% contingency) plus additional labor (assume 0.30 FTE to inspect, clean and maintain spray nozzle system). At Year 10, upgrade valves and electrical components ($100,000), due to unfavorable environmental conditions).*

Flushing Compartment No. 1 *RECOMMENDED OPTION* - Flushing gates

Initial Installation Cost:	$ 1,348,000 (with design and contingencies)
20-year Life Cycle Cost:	$ 150,000**
Total Cost:	$ 1,498,000

** *PRESENT VALUE: Minimal labor needed to maintain gates. Assume 0.05 FTE to inspect and maintain flushing system and $50,000 in electrical costs for gate operations over 20-year period*

The total costs for the preferred flushing gate option are lower than Alternate 1. Our research on facilities with similar flushing gate systems reveals that they work well with relatively low O&M costs.

4.4.2. Alternative Option for Flushing Compartment No. 2 - Install flushing gate system

Due to the same concerns about the relative O&M costs between flushing gates and spray nozzle systems, a flushing gate system was evaluated for Compartment No. 2. Given the geometry of Compartment No. 2 (which is larger than Compartment No. 1), installing a flushing gate system would be significantly more expensive than a Compartment No. 1 installation.

Additionally, the existing system components of the Compartment No. 2 spray nozzle system (pumps, valves, controls, and electrical wiring) are subject to more favorable environmental conditions. As such, ongoing maintenance of these components will be less costly than that of Compartment No. 1.

PRIORITY 1B [ALTERNATE 1]: Install Flushing Gate System:

- Remove the existing flushing piping and nozzles and replace with automated flushing gates.
- Modify the concrete sump area by the existing dewatering pumps to accommodate a flushing cycle.
- Install flushing gates and modify tank bottom to facilitate minimum flushing velocities.
- Remove the flushing valve actuators, piping and manhole structures.
- Replace the aluminum roof scuttles on Compartment No. 2.
- Modify existing walkways to accommodate the flushing system.

This alternative for Flushing Compartment No. 2 is not considered feasible, primarily due to the size and layout of Compartment No. 2. The layout of Flushing Compartment No. 2 is more complex and would not easily accommodate a flushing system without significant structural modifications. Discussions with Wayne County on operational issues revealed that the O&M

costs have historically been less in Compartment No. 2 (as compared to Compartment No. 1). This is mainly due to the reduced solids loading and less severe environmental conditions at the valve/control access structures.

As the existing spray nozzle system in Compartment No. 2 is generally less susceptible to operational problems than that of Compartment No. 1, it is more cost-efficient to upgrade and monitor the spray nozzle system than to incorporate a new flushing mechanism that will require significantly more disruption to the tank.

Flushing Compartment No. 2 *ALTERNATE 1* - Install flushing gate system

Initial Installation Cost:	$ 1,600,000 (with design and contingencies)
20-year Life Cycle Cost:	$ 150,000*
Total Cost:	$ 1,750,000

* *PRESENT VALUE: Minimal labor needed to maintain gates. Assume 0.05 FTE to inspect and maintain flushing system and $50,000 in electrical costs for gate operations over 20-year period*

Flushing Compartment No. 2 *RECOMMENDED OPTION* - Upgrade/optimize spray nozzle system

Initial Installation Cost:	$ 550,000 (with design and contingencies)
20-year Life Cycle Cost:	$ 810,000**
Total Cost:	$ 1,360,000

** *PRESENT VALUE: Assume 5-year replacement cycle for spray nozzles (4 replacement cycles at $75,000 per cycle + 20% contingency) plus additional labor (assume 0.20 FTE to inspect, clean and maintain spray nozzle system). $50,000 in valving and electrical upgrades during 20-year period.*

The total costs for the preferred spray nozzle system optimization are lower than Alternate 1. Our discussions with Wayne County maintenance staff confirms that the upgrades to the existing spray nozzle system should represent the most cost-efficient option.

Section 5 - Recommended Projects

5.1. General

The following summarizes the recommended projects that will allow for continued operation of the existing NESDS through the 20-year planning period. The project plan anticipates funding of the NESDS Priority 1 improvements in the fourth quarter of 2012 SRF Project Planning process.

Priority 1A and 1B Projects – Years 2012-2015
Northeast System (2012-2013)
Grosse Pointe Interceptor Sewer
Marter Road Booster Pumping Station Improvements
Kerby Road Pumping Station Improvements
Harper Woods Connection & Flow Control Improvements
Cook Road Pump Station Metering Facility

Milk River CSO RTB (2014-2015)
Milk River Pumping Station & CSO RTB Improvements
Milk River Recirculation System Improvements

Priority 2A and 2B Projects– Years 2015-2019
Marter Road Booster Pumping Station, Mechanical
Milk River Pumping Station & CSO RTB Mechanical & Electrical Renovation
Kerby Road Pumping Station

Priority 3A and 3B Projects – Years 2020-2024
Grosse Pointe Interceptor Sewer
Marter Road Booster Pumping Station Improvements
Milk River Pumping Station & CSO RTB Improvements
Kerby Road Pumping Station Improvements
Harper Woods Connection & Flow Control Improvements
Milk River Recirculation System Improvements

Priority 4A and 4B Projects – Years 2025-2029
Grosse Pointe Interceptor Sewer, Tunnel Lining
Marter Road Booster Pumping Station, Pump Replacement
Milk River Recirculation System, Intake Replacement

5.2. Monetary Cost Estimates

The following table provides a breakdown of the project costs for each element of the proposed project. Detailed project cost breakdowns for Supplement No. 2 projects are listed in Appendix A.

Table 5-1: Cost Summary for Recommended Projects

	Priority 1 Projects (FY 2012 to 2015)	Capital Cost
1A	Grosse Pointe Interceptor Sewer	$ 118,000.00
	Marter Road Booster Pumping Station	$ 5,034,000.00
	Kerby Road Pumping Station	$ 5,225,000.00
	Harper Woods Connection & Flow Control	$ 590,000.00
	Cook Road PS Metering Facility	$ 145,000.00
	Total NESDS Priority 1A Projects	***$ 11,112,000.00***
1B	Milk River Pumping Station & CSO RTB	$ 14,040,000.00
	Milk River Recirculation System	$ 1,880,000.00
	Total Milk River Priority 1B Projects	***$ 15,920,000.00***
	Total Priority 1 Projects	***$ 27,032,000.00***
	Priority 2 Projects (FY 2015 to 2019)	**Capital Cost**
2A	Marter Road Booster Pumping Station	$ 338,000.00
	Kerby Road Pumping Station	$ 42,000.00
	Total NESDS Priority 2A Projects	***$ 380,000.00***
2B	Milk River Pumping Station & CSO RTB, Drain Enclosure Condition Assessment and Repairs	$ 1,102,000.00
	Total Milk River Priority 2B Projects	***$ 1,102,000.00***
	Total Priority 2 Projects	***$ 1,482,000.00***
	Priority 3 Projects (FY 2020 to 2024)	**Capital Cost**
3A	Grosse Pointe Interceptor Sewer	$ 151,000.00
	Marter Road Booster Pumping Station	$ 1,302,000.00
	Milk River Pumping Station & CSO RTB	$ 2,054,000.00
	Kerby Road Pumping Station	$ 5,331,000.00
	Harper Woods Connection & Flow Control	$ 238,000.00
	Total NESDS Priority 3A Projects	***$ 9,076,000.00***
3B	Milk River Pumping Station & CSO RTB	$ 2,510,000.00
	Total Milk River Priority 3B Projects	***$ 2,510,000.00***
	Total Priority 3 Projects	***$ 11,586,000.00***
	Priority 4 Projects (FY 2025 to 2029)	**Capital Cost**
4A	Grosse Pointe Interceptor Sewer	$ 37,381,000.00
	Marter Road Booster Pumping Station	$ 2,084,000.00
	Total NESDS Priority 4A Projects	***$ 39,465,000.00***
4B	Milk River Recirculation System	$ 2,960,000.00
	Total Milk River Priority 4B Projects	***$ 2,960,000.00***
	Total Priority 4 Projects	***$ 42,425,000.00***
	TOTAL ALL PROJECTS (FY 2012-2029):	**$ 82,525,000.00**

5.3. Authority to Implement Selected Alternative

Wayne County has the necessary legal, institutional, financial, and managerial authority and resources to build, operate, and maintain the wastewater facilities. Implementation of the proposed project requires resolutions of approval and adoption of the Project Plan by the Wayne County Commission and the Milk River Intercounty Drain Drainage Board (MRIDDD). These resolutions will be included in the Appendix of the Final Project Plan.

5.4. Water Quality Management Plans

The Southeast Michigan Council of Governments (SEMCOG) is the regional planning commission for Wayne County. A copy of the draft Project Plan and this Supplement No. 1 was submitted to SEMCOG for their review for consistency with local water quality management plans. Written comments on the project plan by SEMCOG are included in Appendix of the Final Project Plan.

5.5. User Costs

The estimated annual costs to average residential households in each of the NESDS communities for the proposed Supplement No. 1 (Priority 1A projects) and Supplement No. 2 (Priority 1B projects) are presented in Table 5-2. These costs will vary depending upon individual household water usage as well as the allocation of costs to the industrial and commercial customers within each community.

Table 5-2: Estimated Cost for Typical Residential NESDS Customer for Priority 1A (NESDS) Improvements and Priority 1B (MRIDDD) Improvements

Community	***PRIORITY 1A Annual Cost for Typical Residential Customer**** *(as reported in Supplement No. 1)*	***PRIORITY 1B Annual Cost for Typical Residential Customer**** *(Supplement No. 2 projects only)*
Eastpointe	$ 12.66	$ 0
Roseville	$ 12.66	$ 0
St. Clair Shores	$ 12.69	$ 0.21
Grosse Pointe Shores	$ 19.44	$ 0
Grosse Pointe Woods	$ 12.36	$ 113.88
Harper Woods	$ 8.61	$ 74.88

** Based upon an average household of three people.*

Section 6 - Environmental Impacts

6.1. General

Analysis of anticipated environmental impacts resulting from the construction of the proposed project must address beneficial and adverse, short and long term, and irreversible impacts.

6.1.1. Long-Term Impacts

The implementation of the Project Plan would allow for improved operation of the existing facilities by replacing and upgrading equipment that has served its useful life or has been subject to excessive downtime for maintenance.

No acquisition of private property is required for the implementation of the Project Plan. The project will be constructed adjacent to or within the existing facilities for economical purposes and in order to minimize any adverse impacts to historic or environmental resources.

6.1.2. Short-Term Impacts

The implementation of the Project Plan will create indirect and induced employment in other economic sectors of the area and at sites where materials for the construction programs are manufactured. No residents would be displaced because of construction activities.

Construction would take place at the existing facilities site and there would be medium to heavy traffic to and from the construction sites. Environmental disruption, including noise, soil erosion, fumes, etc., would occur during construction. All of these factors would produce temporary adverse aesthetic impacts.

6.1.3. Irreversible Impacts

The investment in non-recoverable resources committed to the Project Plan would be traded off for the restored and improved performance of the facilities during the life of the system. The commitment of resources includes public capital, energy, labor, and unsalvageable materials. These non-recoverable resources would be foregone for the provision of the proposed improvements. Construction accidents associated with this project may cause irreversible bodily injuries or death. Accidents may also cause damage to or destruction of equipment and other resources.

Section 7 - Mitigation

7.1. General

The Project Plan is required to include proposed mitigation of any potential adverse impacts on the environment. As described in the previous section, the overall environmental impact of the project will allow for water quality improvement, through continued operation of the NESDS.

7.2. Mitigation of Long-Term Impacts

Any potential soil erosion impact would be mitigated through the contractor's required compliance with a program for control of soil erosion and sedimentation, as specified in Part 91 of Michigan Act 451, P.A. of 1994. Areas of any earth-changing activities will be restored to the existing condition.

7.3. Mitigation of Short-Term, Construction-Related Impacts

Environmental disruption will occur during construction. Guidelines will be established for cover vegetation removal, dust reduction, traffic control, and accident prevention. Once construction is completed those short-term effects will stop and the area will be returned to the original conditions in so far as possible.

Section 8 - Public Participation

8.1. General

This Supplement No. 2 to the SRF Project Plan was advertised in the Grosse Pointe News on May 10, 2012. Copies of this Supplement No. 2 to the SRF Project Plan were placed at the following locations for the public's review and were available beginning on May 11, 2012:

- Wayne County Department of Public Services, 400 Monroe Street, Suite 400, Detroit, MI 48226
- City of St. Clair Shores, 27600 Jefferson Circle Drive, St. Clair Shores, MI 48081
- City of Harper Woods, 19617 Harper, Harper Woods, MI 48225
- City of Grosse Pointe Woods, 20025 Mack Plaza, Grosse Pointe Woods, MI 48236

8.2. Public Hearing

A formal public hearing was held on June 12, 2012 at 5:30 pm at the City of Grosse Pointe Woods to review the work associated with the proposed Project Plan. The hearing was held to review the information presented in the Project Plan, including estimated user costs, and to receive comments and views of interested persons. All questions during the Public Hearing were fully addressed and are part of the meeting transcript. Copies of correspondence related to agency notifications are included in Appendix C. The presentation (PowerPoint), sign-in sheet, and transcript of the public hearing are also included in Appendix C.

8.3. Resolution

A Resolution by the MRIDDD, signed by the Wayne County Drain Commissioner on June 22, 2012, adopting this Supplement No. 2 is included in Appendix C.

Section 9 - Glossary

Term	Description
• 10-year Storm	A storm of a designated duration (ranging from 30 minutes to 24 hours) that has a 10% chance of occurring in a given year.
• 100-year Storm	A storm of a designated duration (ranging from 30 minutes to 24 hours) that has a 1% chance of occurring in a given year.
• AOC	Area of Concern, relates to
• Average Flow	The average quantity of flow that passes a point over a given period of time.
• Biochemical Oxygen Demand (BOD)	A measure of wastewater pollutant strength that quantifies oxygen consumed in a stated period of time, usually 5 days at 20°C. Includes oxygen consumed in ammonia oxidation.
• Bypass	The measurable diversion of raw sewage out of the sewer system.
• cfs	Cubic feet per second.
• CIP	Capital Improvement Plan
• Cost-Effectiveness Analysis	An analysis performed to determine which alternate collection or treatment system would result in the minimum total resource cost to meet the requirements. A cost-effectiveness analysis for a sewer system determines this by comparing with total costs for transportation and treatment of the infiltration/inflow.
• Cost-Effectiveness Guidelines	Developed by EPA to aid grantees in the selection of a system component which will result in the minimum total resources cost over a fixed period of time to meet federal, state, and local requirements.
• Design Flow	The average quantity of wastewater which a treatment facility or collection system component is designed to handle. Usually expressed in millions of gallons per day (MGD) or cubic feet per second (cfs).
• Design Period	Time span over which proposed collector or treatment facilities are expected to be operating; period over which facility costs are amortized.
• Dissolved Oxygen (D.O.)	Molecular (atmospheric) oxygen dissolved in water or wastewater.
• Drainage District or Watershed	The tributary area of a particular point on a channel system that contributes storm water runoff upstream of that point.
• Environmental Impact Assessment (EIA)	A preliminary evaluation of the potential environmental impacts (positive and negative) of a proposed federally funded project. It should be submitted as part of the Project Plan.
• Environmental Impact Statement (EIS)	A detailed analysis of the potential environmental impacts of a proposed project required when the EPA Regional Administrator determines that a project is highly controversial or may have significant adverse environmental effects.
• FEMA	Federal Emergency Management Agency.

Term	Description
• Flood	An overflow of lands not normally covered by water that is used or are usable to man. Normally a "flood" is considered as any temporary rise in stream flow and stage that results in significant adverse effects in the vicinity. (See surface runoff for comparison.)
• Floodplain	The relatively flat area or low land adjoining the channel of a river or stream, which has been or may be covered by flood water. Formally defined as the area that would be flooded during a 100-year storm.
• Floodway	The channel of the stream plus any adjacent flood plain areas that must be kept free of encroachment such that a 100-year flood can be transported without increasing upstream water elevations more than 0.10 feet.
• Force Mains	Pipes used to transport wastewater under pressure against the force of gravity.
• FRP	Fiberglass-Reinforced Plastice
• gpd	Gallons per day.
• GPI	Grosse Pointe Interceptor
• gpm	Gallons per minute.
• Head	A measure of pressure exerted by a fluid expressed as the height of an enclosed column of the fluid that could be balanced by the pressure in the system.
• Head loss	The difference in water level between the upstream and downstream sides of a treatment process attributed to friction losses.
• H&V	Heating and Ventilation
• Hydraulic Gradient	The slope of the hydraulic grade line. This is the slope of the wastewater surface in an open channel or the slope of the water pressure for pipes under pressure.
• Hydrograph	A curve denoting the discharge of flow over a period of time.
• Infiltration/Inflow (I/I)	The total quantity of water from both infiltration and inflow without distinguishing the source.
• Infiltration	The water entering a sewer system from the soil through defective pipes, foundation drains, pipe joints, connections and manhole walls.
• Inflow	The water discharged into a sewer system from roof drains, cooling water discharges, drains from springs and swampy areas, manhole covers, cross-connections from storm sewers and combined sewers, catch basins, storm waters, surface runoff, street wash waters or drainage.
• Influent	The flow entering a treatment process.
• Interceptor	Any pipe, regardless of size that carries wastewater directly to a treatment plant or pumping station. Generally, they are the largest pipes in the collection system.
• I/O	Input/Output (related to electrical and control devices)

Term	Description
• Industrial Water (IW)	A water service separated from the potable water system by a backflow preventer. The potable water connection is typically a city-water connection.
• KRPS	Kerby Road Pumping Station
• Lateral	The pipe to which individual houses and business establishments connect to public sewers.
• Lift Station (Pump Station)	A facility within a sanitary sewer system which pumps flows from a lower elevation to a higher elevation.
• Main/Submain	The word "main" is frequently used loosely to indicate a large pipe, which is not a lateral and not an interceptor. If frequently forms one of the larger branches of a complex collection system.
• MDEQ	Michigan Department of Environmental Quality.
• MGD	Millions of gallons per day.
• MH	Manhole.
• MRBS	Marter Road Booster Station
• MRIDDD	Milk River Intercounty Drain Drainage District
• MRPS	Milk River Pumping Station
• MRRTB	Milk River Retention and Treatment Basin
• National Pollutant Discharge Elimination System (NPDES)	The effluent discharge permit system established under the 1972 Federal Water Pollution Control Administration as part of the Clean Water Act, which places conditions on the type and concentration of pollutants that discharge to a waterway of the United States.
• Peak Flow	The maximum quantity of flow that passes a point over a given period of time.
• PLC	Programmable Logic Controller
• Primary Impacts	Those which can be attributed directly to a proposed action.
• RAP	Remedial Action Plan
• Sanitary Sewer	A sewer intended to carry only sanitary and industrial wastewater from residences, commercial buildings, industrial plants, and institutions, including service connections.
• Sanitary Sewer System (Sewage Collection System)	The entire network of sanitary sewers and pumping stations which collect a municipality's wastewater.
• SCADA	Supervisory Control and Data Acquisition
• Secondary Impacts	Those resulting from indirect or induced changes in community land use patterns, population and economic growth, and environmental quality resulting from induced growth.
• SEMCOG	South East Michigan Council of Governments
• Service Area	The area which will be serviced by a wastewater treatment system.

Term	Description
• Sewage	Sewage refers to the wastewater from residential, commercial, and industrial establishments, which flows through the pipes to a treatment plant.
• Sewer	Sewer refers to the pipe used to transport wastewater.
• Sewer or Sanitary District	A sewer district is usually either a semi-autonomous governmental unit whose purpose is the provision of sewerage or a special assessment district within which sewerage facilities are provided to residents.
• State Revolving Fund (SRF)	This program was established to provide low cost financing for the construction of publicly owned water pollution control facilities. The program is jointly administered by the Michigan Municipal Bond Authority and the Michigan Department of Environmental Quality.
• Storm Sewer	A sewer intended to carry only storm waters, surface runoff, street wash waters, and drainage.
• Surface Runoff	Water that is derived directly from precipitation and passes over the ground into storm sewers and water-courses (see "Flood" for comparison).
• Trunk Sewer	Generally, a large diameter municipal sewer that collects flow from smaller diameter municipal sewers and discharges to an interceptor sewer.
• Total Suspended Solids (TSS)	The measure of particulate matter suspended in a sample of water or wastewater. After filtering a sample of a known volume, the filter is dried and weighed to determine the residue retained.
• US EPA	The United States Environmental Protection Agency.
• User Charge	Fees levied upon users of a water or wastewater system, based on the volume and/or characteristics of the water.
• Variable Frequency Drive (VFD)	A control system that allows frequency of the current applied to a motor to be varied. The motor is connected to a low-frequency source while standing still; the frequency is then increased gradually until motor and pump (or other driven machine) operate at desired speed.
• Water Quality Criteria	The levels of pollutants that affect the suitability of water for a given use. Generally, water use classification includes: public water supply, recreation, propagation of fish and other aquatic life, agricultural use and industrial use.
• WWTF	Waste Water Treatment Facility

APPENDIX A

Cost Estimates

HUBBELL, ROTH & CLARK, INC
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Project Summary
Engineer's Opinion of Project Costs

OWNER	**Wayne County Department of Public Service, Environmental Group**	Est. Date	**5/11/2012**
PROJECT	**Milk River Project Plan Supplement #2**	Project No.	**0144-11-0041**
WORK:	**Milk River Pumping Station and CSO RTB**	By:	**SAW**
BASIS OF ESTIMATE:		Ck'd by:	**SAW**
[X] Report [ ] Design [ ]		CCI: Time of Est.	**8,528**
[ ] 50% [ ] 90% [X] Final		CCI: Current	**9,268**

NO.	ITEM	SUB-TOTAL
	PRIORITY 1B PROJECTS (2013 - 2015)	
1.0	Milk River Pumping Station and CSO RTB	$15,920,000
	Priority 1B Subtotal	**$15,920,000**
	PRIORITY 2B PROJECTS (2015-2019)	
2.0	Milk River Pumping Station and CSO RTB	$1,102,000
	Priority 2B Subtotal	**$1,102,000**
	PRIORITY 3B PROJECTS (2020 -2024)	
3.0	Milk River Pumping Station and CSO RTB	$2,510,000
	Priority 3B Subtotal	**$2,510,000**
	PRIORITY 4B PROJECTS (2025 - 2029)	
4.0	Milk River Pumping Station and CSO RTB	$2,960,000
	Priority 4B Subtotal	**$2,960,000**
	ENGINEER'S OPINION OF PROJECT COST	**$ 22,492,000**

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HUBBELL, ROTH & CLARK, INC
Consulting Engineers

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Table 1
Engineers Opinion Of Project Cost

OWNER	**Wayne County Department of Public Service, Environmental Group**	Est. Date	**5/11/2012**
PROJECT	**Milk River Project Plan Supplement #2**	Project No.	**0144-11-0041**
WORK:	**Milk River Pumping Station and CSO RTB** **Priority 1B**	By:	**SAW**
BASIS OF ESTIMATE:		Ck'd by:	**GPK**
[X] Report [ ] Design [ ]		CCI: Time of Est.	**8,528**
[ ] 50% [ ] 90% [X] Final		CCI: Current	**9,268**

NO.	ITEM	QUAN.	UNIT	UNIT PRICE	SUB-TOTAL
DIV. 02	**CIVIL / SITE**				
1	Replace Service Walks	1	LS	$ 25,000	$25,000
2	Restoration	1	LS	$ 35,000	$35,000
3	36-inch Effluent Sewer Hydraulic Study and Improvements	1	LS	$ 50,000	$50,000
				Subtotal:	**$110,000**
DIV. 03	**CONCRETE**				
1	Misc. Concrete Repair Work	1	LS	$ 40,000	$40,000
2		0	LS	$ -	$0
				Subtotal:	**$40,000**
DIV. 4-10	**ARCHITECTURAL**				
1	Control Building - Painting	1	LS	$ 5,000	$5,000
2	Maintenance Garage - Painting	1	LS	$ 3,000	$3,000
3	Pump Station - Doors and Hardware	1	LS	$ 30,000	$30,000
4	Chemical Building - Doors and Hardware	1	LS	$ 2,500	$2,500
5	Control Building - Misc. Arch/Structural Imps.	1	LS	$ 150,000	$150,000
6	Pump Station - Misc. Arch/Structural Imps.	1	LS	$ 200,000	$200,000
7	Pump Station-Elevator Replacement	1	LS	$ 150,000	$150,000
8	Pump Station-Overhead Door Replacement	2	EA	$ 7,200	$14,400
9	Pump Station - Roof, Gutter and Downspout	1	LS	$ 1,000	$1,000
10	Pump Station- Railing Replacement	1	LS	$ 1,500	$1,500
11	Pump Station - Electrical Room Addition Roof	1	LS	$ 1,500	$1,500
12	Pump Station - Spiral Staircase replacement	1	LS	$ 35,000	$35,000
13	Pump Station - Ladder Replacement	1	LS	$ 20,000	$20,000
14	Chemical Building - Roof Repairs	1	LS	$ 500	$500
15	Pump Station-Extend Hoist for Sanitary Pumps	1	LS	$ 35,000	$35,000
				Subtotal:	**$649,400**
DIV. 11	**PROCESS**				
1	Compartment No. 1 - Flushing Gate Improvements	1	LS	$ 731,400	$550,000
2	Compartment No. 2 - Flushing Nozzle Rehab	1	LS	$ 300,000	$225,000
3	Sodium Hypochlorite System Imps.	8	EA	$ 75,000	$600,000
4	Sodium Hypochlorite Tank Relining	1	LS	$ 30,000	$30,000
5	Sampling System Improvements	1	LS	$ 200,000	$200,000
6	Storm Pump Rehabiliation (Pump and Motor)	***See Operational Upgrades for Cost***			$0
7	Storm Pump Motor Rehab	***See Operational Upgrades for Cost***			$0
8	Sanitary Pumps Guiderail Replacement	3	EA	$ 7,500	$22,500
9	Dewatering Pumps Guiderail Replacement	4	EA	$ 7,500	$30,000
10	Groundwater Pumps Guiderail Repalcement	3	EA	$ 7,500	$22,500
11	Flushing Pumps Guiderail Repacement	4	EA	$ 7,500	$30,000
12	Rebuild Flushing Pumps	4	EA	$ 20,000	$80,000
13	Rebuild Groundwater Pumps	3	EA	$ 20,000	$60,000
14	Dewatering Pump Discharge Piping Mod	1	LS	$ 50,000	$50,000
15	Sanitary Pump Isolation	1	LS	$ 80,000	$80,000
16	Aeration System Improvements	1	LS	$ 150,000	$150,000
17	Recirc Station - Demo	1	LS	$ 65,000	$65,000
18	Recir Station - Mechanically Raked Bar Screen	1	LS	$ 225,000	$225,000
19	Recirc Station - 60" Motorized Knife Gate & Piping	1	LS	$ 85,000	$85,000
20	Recirc Station - 16" Plug Valve and Motor Operator	1	LS	$ 32,000	$32,000
21	Recirc Station - 36" Plug Valve and Motor Operator	1	LS	$ 72,000	$72,000
22	Recirc Station - Sluice Gate	1	LS	$ 96,000	$96,000
23	Recirc Station - Zebra Mussel Control	1	LS	$ 75,000	$75,000
				Subtotal:	**$2,780,000**
DIV. 15	**MECHANICAL**				
1	Pump Station - Heating and Ventilation Imps.	1	LS	$ 150,000	$150,000
2	Chemical Building - Heating and Ventilation Imps.	1	LS	$ 40,000	$40,000
3	HVAC Energy Efficient Upgrade	1	LS	$ 45,000	$45,000
				Subtotal:	**$235,000**

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Consulting Engineers

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Table 1
Engineers Opinion Of Project Cost

OWNER	**Wayne County Department of Public Service, Environmental Group**	Est. Date	**5/11/2012**
PROJECT	**Milk River Project Plan Supplement #2**	Project No.	**0144-11-0041**
WORK:	**Milk River Pumping Station and CSO RTB** **Priority 1B**	By:	**SAW**
BASIS OF ESTIMATE:		Ck'd by:	**GPK**
[X] Report [ ] Design [ ]		CCI: Time of Est.	**8,528**
[ ] 50% [ ] 90% [X] Final		CCI: Current	**9,268**

NO.	ITEM	QUAN.	UNIT	UNIT PRICE	SUB-TOTAL
DIV. 16	**ELECTRICAL**				
1	Replacement of Pump Station - Primary Switchgear	1	LS	$ 1,188,200	$1,188,200
2	Control Bldg.-Central Emergency Lighting Inverter System and Arc Flash Hazards Assessment Study	1	LS	$ 20,000	$20,000
3	Control Bldg.- Occupancy Sensor Switches	1	LS	$ 2,000	$2,000
5	Pump Station-Central Emergency Lighting Inverter System and Arc Flash Hazards Assessment Study	1	LS	$ 142,400	$142,400
6	Pump Station - Electrical System Removals	1	LS	$ 6,500	$6,500
7	Chemical Building-Central Emergency Lighting Inverter System, Arc Flash Hazards Assessment Study and Occupancy Sensor Switches	1	LS	$ 20,000	$20,000
8	Blower Building-Central Emergency Lighting Inverter System, Arc Flash Hazards Assessment Study and Occupancy Sensor Switches	1	LS	$ 20,000	$20,000
9	Maintenance Garage-Self-diagnostic Emergency Lighting Units and Arc Flash Hazards Assessment Study	1	LS	$ 2,400	$2,400
10	Pump Station-Replace Incandescent Lights	1	LS	$ 45,000	$45,000
11	Electrical Power Supply Upgrade to Pumps	1	LS	$ 60,000	$60,000
12	SCADA - All Work Items at Milk River RTB	***See Operational Upgrades for Cost***			$0
13	Recir Station - SCADA	1	LS	$ 85,000	$85,000
14	Recir Station - Disconnects, Conduit and Wire	1	LS	$ 35,000	$35,000
					$0
				Subtotal:	**$1,630,000**
				TRADES SUBTOTAL:	**$5,440,000**
	CONTRACTUAL REQUIREMENTS				
DIV. 00	General Conditions	15%			$816,000
DIV. 01	General Requirements	7.5%			$408,000
	Contingencies	40%			$2,176,000
		TOTAL CONSTRUCTION COST:			**$8,840,000**
	PROJECT COSTS				
	Engineering	25%			$2,210,000
	Force Account	3%			$265,200
	Annual Cost Adjustment	3.5%	per yr.	10.9%	$961,066
				TOTAL:	**$12,280,000**
	Adjustment of Costs from ENR CCI	1.09		**ADJ. TOTAL:**	**$13,350,000**
	FACILITY UPGRADES*				
1	Storm Pump Rehabiliation (Pump and Motor)	5	EA	$ 275,000	$1,375,000
2	Storm Pump Motor Rehab	1	EA	$ 40,000	$40,000
3	SCADA - All Work Items at Milk River RTB	1	LS	$ 285,000	$285,000
4	Post-Construction TCR/DO Monitoring	1	LS	$ 100,000	$100,000
				Subtotal:	**$1,800,000**
	Contingencies	20%			$360,000
		TOTAL CONSTRUCTION COST:			**$2,160,000**
	Engineering	5%			$108,000
	Force Account	3%			$64,800
	Annual Cost Adjustment	3.5%	per yr.	10.9%	$234,831
				TOTAL:	**$2,568,000**
** Facility Upgrades are for those items which have predictable costs and for which lower contingency and engineering fees are justified*					
	ENGINEER'S OPINION OF PROJECT COST				**$ 15,920,000**

HUBBELL, ROTH & CLARK, INC
Consulting Engineers

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Table 2
Engineers Opinion Of Project Cost

OWNER	**Wayne County Department of Public Service, Environmental Group**	Est. Date	**5/11/2012**
PROJECT	**Milk River Project Plan Supplement #2**	Project No.	**0144-11-0041**
WORK:	**Milk River Pumping Station and CSO RTB** **Priority 2B**	By:	**SAW**
BASIS OF ESTIMATE:		Ck'd by:	**SAW**
[X] Report [ ] Design [ ]		CCI: Time of Est.	**8,528**
[ ] 50% [ ] 90% [X] Final		CCI: Current	**9,268**

NO.	ITEM	QUAN.	UNIT	UNIT PRICE	SUB-TOTAL
DIV. 02	**CIVIL / SITE**				
1	Restoration	1	LS	$ 5,000	$5,000
2	Drain Condition Assessment	1	LS	$ 25,000	$25,000
3	Drain Repairs	1	LS	$ 100,000	$100,000
				Subtotal:	**$130,000**
DIV. 03	**CONCRETE**				
1		0	LS	$ -	$0
2		0	LS	$ -	$0
3		0	LS	$ -	$0
				Subtotal:	**$0**
DIV. 4-10	**ARCHITECTURAL**				
1	Blower Building - Painting	1	LS	$ 5,000	$5,000
3	Yard Shed - Demolition	1	LS	$ 5,000	$5,000
4	All Buildings, Roof Replacement	1	LS	$ 159,600	$159,600
5			LS	$ -	$0
6			LS	$ -	$0
				Subtotal:	**$169,600**
DIV. 11	**PROCESS**				
1			LS	$ -	$0
2			LS	$ -	$0
3			LS	$ -	$0
				Subtotal:	**$0**
DIV. 15	**MECHANICAL**				
1	Control Building - Heating and Ventilation Imps.	1	LS	$ 40,000	$40,000
2	Maint. Building - Heating and Ventilation Imps.	1	LS	$ 15,000	$15,000
3	Blower Building - Heating and Ventilation Imps.	1	LS	$ 36,000	$36,000
4		0	LS		$0
				Subtotal:	**$91,000**
DIV. 16	**ELECTRICAL**				
1			LS	$ -	$0
2			LS	$ -	$0
3			LS	$ -	$0
				Subtotal:	**$0**
				TRADES SUBTOTAL:	**$390,600**
	CONTRACTUAL REQUIREMENTS				
DIV. 00	General Conditions	15%			$58,590
DIV. 01	General Requirements	7.5%			$29,295
	Contingencies	40%			$156,240
				TOTAL CONSTRUCTION COST:	**$634,725**
	PROJECT COSTS				
	Engineering	25%			$158,681
	Force Account	3%			$19,042
	Annual Cost Adjustment	3.5%	per yr.	31.7%	$201,087
				TOTAL:	**$1,014,000**
	Adjustment of Costs from ENR CCI	1.09			$ 1,102,000
	ENGINEER'S OPINION OF PROJECT COST				**$ 1,102,000**

HRC
HUBBELL, ROTH & CLARK, INC
Consulting Engineers

OHM

Table 3
Engineers Opinion Of Project Cost

OWNER	**Wayne County Department of Public Service, Environmental Group**	Est. Date	**5/11/2012**
PROJECT	**Milk River Project Plan Supplement #2**	Project No.	**0144-11-0041**
WORK:	**Milk River Pumping Station and CSO RTB** **Priority 3B**	By:	**SAW**
BASIS OF ESTIMATE:		Ck'd by:	**SAW**
[X] Report [ ] Design [ ]		CCI: Time of Est.	**8,528**
[ ] 50% [ ] 90% [X] Final		CCI: Current	**9,268**

NO.	ITEM	QUAN.	UNIT	UNIT PRICE	SUB-TOTAL
DIV. 02	**CIVIL / SITE**				
1	Restoration	1	LS	$ 5,000	$5,000
2			LS	$ -	$0
3			LS	$ -	$0
				Subtotal:	**$5,000**
DIV. 03	**CONCRETE**				
1			LS	$ -	$0
2			LS	$ -	$0
3			LS	$ -	$0
				Subtotal:	**$0**
DIV. 4-10	**ARCHITECTURAL**				
1	Pump Station - Painting	1	LS	$ 20,000	$20,000
2	Chemical Building Painting	1	LS	$ 5,000	$5,000
3	Control Building- Doors and Hardware	1	LS	$ 25,000	$25,000
4	Blower Building-Doors and Hardware	1	LS	$ 15,000	$15,000
5	Maintenance Building- Doors and Hardware	1	LS	$ 10,000	$10,000
				Subtotal:	**$75,000**
DIV. 11	**PROCESS**				
1	Replace Raw Sewage Pumps	3	LS	$ 120,000	$360,000
2			LS	$ -	$0
3			LS	$ -	$0
				Subtotal:	**$360,000**
DIV. 15	**MECHANICAL**				
1			LS	$ -	$0
2			LS	$ -	$0
3			LS	$ -	$0
				Subtotal:	**$0**
DIV. 16	**ELECTRICAL**				
1	SCADA - All Work Items	1	LS	$ 246,000	$246,000
2	Recirculation System SCADA - All Work Items	1	LS	$ 85,000	$85,000
3		0	LS	$ -	$0
				Subtotal:	**$331,000**
			TRADES SUBTOTAL:		**$771,000**
	CONTRACTUAL REQUIREMENTS				
DIV. 00	General Conditions	15%			$116,000
DIV. 01	General Requirements	7.5%			$58,000
	Contingencies	40%			$308,000
		TOTAL CONSTRUCTION COST:			**$1,253,000**
	PROJECT COSTS				
	Engineering	25%			$313,000
	Force Account	3%			$38,000
	Annual Cost Adjustment	3.5%	per yr.	56.4%	$707,000
				TOTAL:	**$2,311,000**
	Adjustment of Costs from ENR CCI	1.09			$ 2,510,000
	ENGINEER'S OPINION OF PROJECT COST				**$ 2,510,000**

HRC
HUBBELL, ROTH & CLARK, INC
Consulting Engineers

OHM

Table 4
Engineers Opinion Of Project Cost

OWNER	**Wayne County Department of Public Service, Environmental Group**	Est. Date	**5/11/2012**
PROJECT	**Milk River Project Plan Supplement #2**	Project No.	**0144-11-0041**
WORK:	**Milk River Pumping Station and CSO RTB** **Priority 4B**	By:	**SAW**
BASIS OF ESTIMATE:		Ck'd by:	**SAW**
[X] Report [ ] Design [ ]		CCI: Time of Est.	**8,528**
[ ] 50% [ ] 90% [X] Final		CCI: Current	**9,268**

NO.	ITEM	QUAN.	UNIT	UNIT PRICE	SUB-TOTAL
DIV. 02	**CIVIL / SITE**				
1	Replace Intake Pipe, 72 inch diameter	2,100	LS	$ 350	$735,000
2	Restoration	1	LS	$ 50,000	$50,000
3			LS	$ -	$0
				Subtotal:	**$785,000**
DIV. 03	**CONCRETE**				
1			LS	$ -	$0
2			LS	$ -	$0
3			LS	$ -	$0
				Subtotal:	**$0**
DIV. 4-10	**ARCHITECTURAL**				
1			LS	$ -	$0
2			LS	$ -	$0
3			LS	$ -	$0
				Subtotal:	**$0**
DIV. 11	**PROCESS**				
1			LS	$ -	$0
2			LS	$ -	$0
3			LS	$ -	$0
				Subtotal:	**$0**
DIV. 15	**MECHANICAL**				
1			LS	$ -	$0
2			LS	$ -	$0
3			LS	$ -	$0
				Subtotal:	**$0**
DIV. 16	**ELECTRICAL**				
1			LS	$ -	$0
2			LS	$ -	$0
3			LS	$ -	$0
				Subtotal:	**$0**
				TRADES SUBTOTAL:	**$785,000**
	CONTRACTUAL REQUIREMENTS				
DIV. 00	General Conditions	15%			$118,000
DIV. 01	General Requirements	7.5%			$59,000
	Contingencies	40%			$314,000
				TOTAL CONSTRUCTION COST:	**$1,276,000**
	PROJECT COSTS				
	Engineering	25%			$319,000
	Force Account	3%			$38,000
	Annual Cost Adjustment	3.5%	per yr.	85.7%	$1,094,000
				TOTAL:	**$2,727,000**
	Adjustment of Costs from ENR CCI	1.09			$ 2,960,000
	ENGINEER'S OPINION OF PROJECT COST				**$ 2,960,000**

APPENDIX B

Project Planning Correspondence

May 14, 2012

OHM

est.1962

John Skubinna
MDEQ – Office of Environmental Assistance
P. O. Box 30457
Lansing, MI 48909-7957

RE: Northeast Sewage Disposal System (NESDS) SRF Project Plan Supplement No. 2

Dear Mr. Skubinna:

Wayne County Department of Public Services is in the process of submitting an SRF project plan for project areas within the Milk River Drainage District cities of Harper Woods, Grosse Pointe Woods, and St. Claire Shores. The proposed work consists of improvements and upgrades to the Milk River Pumping Station & Combined Sewer Overflow Retention Treatment Basin and the Milk River Recirculation System. The enclosed Project Map and Description of Project Area summarize the improvements and their respective locations.

The locations of potential impacts are limited to the areas of proposed work, as shown on the attached figure. All proposed work will occur within city and county owned property. Only a minimal amount of ground-disturbing activities will be involved. The project sites will be restored to their original condition following all construction activities and there will be no manifest alteration to the physical, visual, auditory, and socio-cultural integrity of the project sites. The proposed projects are located within T1S, R13E, Private Claim 656 and T1N, R13E, Private Claims 544 & 624.

Please review and verify the enclosed information regarding the Wayne County NESDS SRF Project Plan Supplement No. 2. Please return comments to the applicant by June 11, 2012. You may also send comments to my attention via email at gregory.kacvinsky@ohm-advisors.com

Sincerely,
Orchard, Hiltz & McCliment, Inc.

_____
Gregory Kacvinsky, P.E.
Civil Engineer

Enclosures

34000 Plymouth Road | Livonia, MI 48150
p. (734) 522-6711 | f. (734) 522-6427
www.ohm-advisors.com

May 14, 2012

Burl Lake Band of Ottawa & Chippewa Indians
P.O. Box 206
Brutus, MI 49716
Attn: Curtis Chambers

RE: Northeast Sewage Disposal System (NESDS) SRF Project Plan Supplement No. 2

Ladies and Gentlemen:

Wayne County Department of Public Services is in the process of submitting an SRF project plan for project areas within the Milk River Drainage District cities of Harper Woods, Grosse Pointe Woods, and St. Claire Shores. The proposed work consists of improvements and upgrades to the Milk River Pumping Station & Combined Sewer Overflow Retention Treatment Basin and the Milk River Recirculation System. The enclosed Project Map and Description of Project Area summarize the improvements and their respective locations.

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We are requesting input and inviting any comments from you on whether the proposed Wayne County NESDS improvement projects contain historic properties of religious and cultural significance.

All work will be performed within existing structures and not visible from ground level. Based on our research for the proposed project, we anticipate no historic properties will be impacted by the proposed construction activities. The project sites will be restored to their original condition following all construction activities. Any noise impacts from construction will be temporary and discontinued at the end of the project.

Please review and verify the enclosed information regarding the Wayne County NESDS SRF Project Plan Supplement No. 2. Please return comments to the applicant by June 11, 2012. You may also send comments to my attention via email at gregory.kacvinsky@ohm-advisors.com

Sincerely,
Orchard, Hiltz & McCliment, Inc.

Gregory Kacvinsky, P.E.
Civil Engineer

Enclosures

34000 Plymouth Road | Livonia, MI 48150
p. (734) 522-6711 | f. (734) 522-6427
www.ohm-advisors.com

May 14, 2012

Nottawaseppi Band of Huron Potawatomi
2221 1 ½ Mile Road
Fulton, MI 49052
Attn: RoAnn Beebe

RE: Northeast Sewage Disposal System (NESDS) SRF Project Plan Supplement No. 2

Ladies and Gentlemen:

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Sincerely,
Orchard, Hiltz & McCliment, Inc.

Gregory Kacvinsky, P.E.
Civil Engineer

Enclosures

34000 Plymouth Road | Livonia, MI 48150
p. (734) 522-6711 | f. (734) 522-6427
www.ohm-advisors.com

May 14, 2012

Pokagon Band of Potawatomi
P.O. Box 180
Dowagiac, MI 49047
Attn: Mark Parrish

RE: Northeast Sewage Disposal System (NESDS) SRF Project Plan Supplement No. 2

Ladies and Gentlemen:

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Sincerely,
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Civil Engineer

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www.ohm-advisors.com

May 14, 2012

Saginaw Chippewa Indian Tribe of MI
6650 E. Broadway
Mt. Pleasant, MI 48858
Attn: William Johnson

RE: Northeast Sewage Disposal System (NESDS) SRF Project Plan Supplement No. 2

Ladies and Gentlemen:

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Please review and verify the enclosed information regarding the Wayne County NESDS SRF Project Plan Supplement No. 2. Please return comments to the applicant by June 11, 2012. You may also send comments to my attention via email at gregory.kacvinsky@ohm-advisors.com

Sincerely,
Orchard, Hiltz & McCliment, Inc.

Gregory Kacvinsky, P.E.
Civil Engineer

Enclosures

34000 Plymouth Road | Livonia, MI 48150
p. (734) 522-6711 | f. (734) 522-6427
www.ohm-advisors.com

May 14, 2012

Sault Ste. Marie Tribe of Chippewa
523 Ashmun
Sault Ste. Marie, MI 49783
Attn: Cecil E. Pavlat Sr.

RE: Northeast Sewage Disposal System (NESDS) SRF Project Plan Supplement No. 2

Ladies and Gentlemen:

Wayne County Department of Public Services is in the process of submitting an SRF project plan for project areas within the Milk River Drainage District cities of Harper Woods, Grosse Pointe Woods, and St. Claire Shores. The proposed work consists of improvements and upgrades to the Milk River Pumping Station & Combined Sewer Overflow Retention Treatment Basin and the Milk River Recirculation System. The enclosed Project Map and Description of Project Area summarize the improvements and their respective locations.

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Sincerely,
Orchard, Hiltz & McCliment, Inc.

Gregory Kacvinsky, P.E.
Civil Engineer

Enclosures

34000 Plymouth Road | Livonia, MI 48150
p. (734) 522-6711 | f. (734) 522-6427
www.ohm-advisors.com

May 14, 2012

Grand River Band of Ottawa Indians
P.O. Box 2937
Grand Rapids, MI 49501
Attn: Ron Yob

RE: Northeast Sewage Disposal System (NESDS) SRF Project Plan Supplement No. 2

Ladies and Gentlemen:

Wayne County Department of Public Services is in the process of submitting an SRF project plan for project areas within the Milk River Drainage District cities of Harper Woods, Grosse Pointe Woods, and St. Claire Shores. The proposed work consists of improvements and upgrades to the Milk River Pumping Station & Combined Sewer Overflow Retention Treatment Basin and the Milk River Recirculation System. The enclosed Project Map and Description of Project Area summarize the improvements and their respective locations.

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Please review and verify the enclosed information regarding the Wayne County NESDS SRF Project Plan Supplement No. 2. Please return comments to the applicant by June 11, 2012. You may also send comments to my attention via email at gregory.kacvinsky@ohm-advisors.com

Sincerely,
Orchard, Hiltz & McCliment, Inc.

Gregory Kacvinsky, P.E.
Civil Engineer

Enclosures

34000 Plymouth Road | Livonia, MI 48150
p. (734) 522-6711 | f. (734) 522-6427
www.ohm-advisors.com

May 14, 2012

Grand Traverse Band of Ottawa and Chippewa Indians
2605 NW Bayshore Drive
Peshawbetown, MI 49682
Attn: Robert Kewaygoshkum

RE: Northeast Sewage Disposal System (NESDS) SRF Project Plan Supplement No. 2

Ladies and Gentlemen:

Wayne County Department of Public Services is in the process of submitting an SRF project plan for project areas within the Milk River Drainage District cities of Harper Woods, Grosse Pointe Woods, and St. Claire Shores. The proposed work consists of improvements and upgrades to the Milk River Pumping Station & Combined Sewer Overflow Retention Treatment Basin and the Milk River Recirculation System. The enclosed Project Map and Description of Project Area summarize the improvements and their respective locations.

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Please review and verify the enclosed information regarding the Wayne County NESDS SRF Project Plan Supplement No. 2. Please return comments to the applicant by June 11, 2012. You may also send comments to my attention via email at gregory.kacvinsky@ohm-advisors.com

Sincerely,
Orchard, Hiltz & McCliment, Inc.

Gregory Kacvinsky, P.E.
Civil Engineer

Enclosures

May 14, 2012

Hannahville Potawatomi Indian Community
14911 Hannahville B-1 Road
Wilson, MI 49896
Attn: Earl Meshigaud

RE: Northeast Sewage Disposal System (NESDS) SRF Project Plan Supplement No. 2

Ladies and Gentlemen:

Wayne County Department of Public Services is in the process of submitting an SRF project plan for project areas within the Milk River Drainage District cities of Harper Woods, Grosse Pointe Woods, and St. Claire Shores. The proposed work consists of improvements and upgrades to the Milk River Pumping Station & Combined Sewer Overflow Retention Treatment Basin and the Milk River Recirculation System. The enclosed Project Map and Description of Project Area summarize the improvements and their respective locations.

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Sincerely,
Orchard, Hiltz & McCliment, Inc.

Gregory Kacvinsky, P.E.
Civil Engineer

Enclosures

34000 Plymouth Road | Livonia, MI 48150
p. (734) 522-6711 | f. (734) 522-6427
www.ohm-advisors.com

May 14, 2012

Keweenaw Bay Indian Community
16429 Beartown Road
Baraga, MI 49908
Attn: Summer Sky Cohen

RE: Northeast Sewage Disposal System (NESDS) SRF Project Plan Supplement No. 2

Ladies and Gentlemen:

Wayne County Department of Public Services is in the process of submitting an SRF project plan for project areas within the Milk River Drainage District cities of Harper Woods, Grosse Pointe Woods, and St. Claire Shores. The proposed work consists of improvements and upgrades to the Milk River Pumping Station & Combined Sewer Overflow Retention Treatment Basin and the Milk River Recirculation System. The enclosed Project Map and Description of Project Area summarize the improvements and their respective locations.

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Sincerely,
Orchard, Hiltz & McCliment, Inc.

Gregory Kacvinsky, P.E.
Civil Engineer

Enclosures

34000 Plymouth Road | Livonia, MI 48150
p. (734) 522-6711 | f. (734) 522-6427
www.ohm-advisors.com

May 14, 2012

Lac Vieux Desert Band of Lake Superior Chippewa Indians
P.O. Box 249
Watersmeet, MI 49969
Attn: Giiwegiizhigookway Martin

RE: Northeast Sewage Disposal System (NESDS) SRF Project Plan Supplement No. 2

Ladies and Gentlemen:

Wayne County Department of Public Services is in the process of submitting an SRF project plan for project areas within the Milk River Drainage District cities of Harper Woods, Grosse Pointe Woods, and St. Claire Shores. The proposed work consists of improvements and upgrades to the Milk River Pumping Station & Combined Sewer Overflow Retention Treatment Basin and the Milk River Recirculation System. The enclosed Project Map and Description of Project Area summarize the improvements and their respective locations.

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Sincerely,
Orchard, Hiltz & McCliment, Inc.

Gregory Kacvinsky, P.E.
Civil Engineer

Enclosures

34000 Plymouth Road | Livonia, MI 48150
p. (734) 522-6711 | f. (734) 522-6427
www.ohm-advisors.com

May 14, 2012

Little River Band of Ottawa Indians
375 River Street
Manistee, MI 49660
Attn: Jay Sam

RE: Northeast Sewage Disposal System (NESDS) SRF Project Plan Supplement No. 2

Ladies and Gentlemen:

Wayne County Department of Public Services is in the process of submitting an SRF project plan for project areas within the Milk River Drainage District cities of Harper Woods, Grosse Pointe Woods, and St. Claire Shores. The proposed work consists of improvements and upgrades to the Milk River Pumping Station & Combined Sewer Overflow Retention Treatment Basin and the Milk River Recirculation System. The enclosed Project Map and Description of Project Area summarize the improvements and their respective locations.

The locations of potential impacts are limited to the areas of proposed work, as shown on the attached figure. All proposed work will occur within city and county owned property. The proposed projects are located within T1S, R13E, Private Claim 656 and T1N, R13E, Private Claims 544 & 624.

We are requesting input and inviting any comments from you on whether the proposed Wayne County NESDS improvement projects contain historic properties of religious and cultural significance.

All work will be performed within existing structures and not visible from ground level. Based on our research for the proposed project, we anticipate no historic properties will be impacted by the proposed construction activities. The project sites will be restored to their original condition following all construction activities. Any noise impacts from construction will be temporary and discontinued at the end of the project.

Please review and verify the enclosed information regarding the Wayne County NESDS SRF Project Plan Supplement No. 2. Please return comments to the applicant by June 11, 2012. You may also send comments to my attention via email at gregory.kacvinsky@ohm-advisors.com

Sincerely,
Orchard, Hiltz & McCliment, Inc.

Gregory Kacvinsky, P.E.
Civil Engineer

Enclosures

34000 Plymouth Road | Livonia, MI 48150
p. (734) 522-6711 | f. (734) 522-6427
www.ohm-advisors.com

May 14, 2012

Little Traverse Bay Band of Odawa
7500 Odawa Circle
Harbor Springs, MI 49740
Attn: Jay Sam

RE: Northeast Sewage Disposal System (NESDS) SRF Project Plan Supplement No. 2

Ladies and Gentlemen:

Wayne County Department of Public Services is in the process of submitting an SRF project plan for project areas within the Milk River Drainage District cities of Harper Woods, Grosse Pointe Woods, and St. Claire Shores. The proposed work consists of improvements and upgrades to the Milk River Pumping Station & Combined Sewer Overflow Retention Treatment Basin and the Milk River Recirculation System. The enclosed Project Map and Description of Project Area summarize the improvements and their respective locations.

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Please review and verify the enclosed information regarding the Wayne County NESDS SRF Project Plan Supplement No. 2. Please return comments to the applicant by June 11, 2012. You may also send comments to my attention via email at gregory.kacvinsky@ohm-advisors.com

Sincerely,
Orchard, Hiltz & McCliment, Inc.

Gregory Kacvinsky, P.E.
Civil Engineer

Enclosures

May 14, 2012

Match-e-be-nash-shee-wish Band of Potawatomi Indians
P.O. Box 218
Dorr, MI 49323
Attn: Ed Pigeon

RE: Northeast Sewage Disposal System (NESDS) SRF Project Plan Supplement No. 2

Ladies and Gentlemen:

Wayne County Department of Public Services is in the process of submitting an SRF project plan for project areas within the Milk River Drainage District cities of Harper Woods, Grosse Pointe Woods, and St. Claire Shores. The proposed work consists of improvements and upgrades to the Milk River Pumping Station & Combined Sewer Overflow Retention Treatment Basin and the Milk River Recirculation System. The enclosed Project Map and Description of Project Area summarize the improvements and their respective locations.

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We are requesting input and inviting any comments from you on whether the proposed Wayne County NESDS improvement projects contain historic properties of religious and cultural significance.

All work will be performed within existing structures and not visible from ground level. Based on our research for the proposed project, we anticipate no historic properties will be impacted by the proposed construction activities. The project sites will be restored to their original condition following all construction activities. Any noise impacts from construction will be temporary and discontinued at the end of the project.

Please review and verify the enclosed information regarding the Wayne County NESDS SRF Project Plan Supplement No. 2. Please return comments to the applicant by June 11, 2012. You may also send comments to my attention via email at gregory.kacvinsky@ohm-advisors.com

Sincerely,
Orchard, Hiltz & McCliment, Inc.

Gregory Kacvinsky, P.E.
Civil Engineer

Enclosures

34000 Plymouth Road | Livonia, MI 48150
p. (734) 522-6711 | f. (734) 522-6427
www.ohm-advisors.com

May 14, 2012

U. S. Fish and Wildlife Service
East Lansing Field Office
2651 Coolidge Road
East Lansing, MI 48823

RE: Section 7 Endangered Species Act Consultation
Northeast Sewage Disposal System (NESDS) SRF Project Plan Supplement No. 2

To Whom It May Concern:

Wayne County Department of Public Services is in the process of submitting an SRF project plan for project areas within the Milk River Drainage District cities of Harper Woods, Grosse Pointe Woods, and St. Claire Shores. The proposed work consists of improvements and upgrades to the Milk River Pumping Station & Combined Sewer Overflow Retention Treatment Basin and the Milk River Recirculation System.

We are requesting input and inviting any comments from the U.S. Fish and Wildlife Service on whether the proposed Wayne County NESDS improvement projects contain or are in the vicinity of any species of flora or fauna listed or proposed to be listed in the Michigan Natural Features Inventory as endangered or threatened, or their critical habitat. The proposed projects are located within T1S, R13E, Private Claim 656 and T1N, R13E, Private Claims 544 & 624. The enclosed map and Description of Project Area summarizes the improvements and the respective locations.

The proposed work will be contained within city and county property and public road right-of-way. Tree removals will be minimized during construction. Periodic noise will be produced during construction that is consistent with typical City noise that surrounds the project area. The project sites will be restored to their original condition following all construction activities and there will be no manifest alteration to the physical, visual, auditory, and socio-cultural integrity of the project sites.

If there are any comments please return them to this office by June 11, 2012. You may also send comments to my attention via email at greg.kacvinsky@ohm-advisors.com

Sincerely,
Orchard, Hiltz & McCliment, Inc.

Gregory Kacvinsky, P.E.
Civil Engineer

Enclosures

May 14, 2012

OHM
Engineering Advisors

Environmental Review Specialist
State Historic Preservation Office
Environmental Review Office
Michigan Historical Center
P.O. Box 30740
Lansing, MI 48909-8240

Re: Northeast Sewage Disposal System (NESDS) SRF Project Plan Supplement No. 2

Dear Environmental Review Specialist:

Wayne County Department of Public Services is in the process of submitting an SRF project plan for project areas within the Milk River Drainage District cities of Harper Woods, Grosse Pointe Woods, and St. Claire Shores. The proposed work consists of improvements and upgrades to the Milk River Pumping Station & Combined Sewer Overflow Retention Treatment Basin and the Milk River Recirculation System. The enclosed Project Map and Description of Project Area summarize the improvements and their respective locations. A list and photos of historic sites within the area of potential effects (APE) have also been included.

I. General Information

Contact information:

Federal Agency Contact:
Mr. Andrew Lausted, 312-886-0189
US EPA Region 5
77 W. Jackson Blvd.
Chicago, IL 60604

State Agency Contact:
Ms. Karen Nickols, 517-241-8114
MDEQ, Revolving Loan Section
P.O. Box 30457
Lansing, MI 48909-7957

Consultant Contact:
Mr. Gregory Kacvinsky
OHM | Architects. Engineers. Planners.
34000 Plymouth Road
Livonia, MI 48150
Phone: 734-466-4476, Fax: 734-522-6427
Email: gregory.kacvinsky@ohm-advisors.com

II. Ground Disturbing Activity

The locations of potential impacts are limited to the areas of proposed work, as shown on the attached figure. All proposed work will occur within city and county owned property. The proposed projects are located within T1S, R13E, Private Claim 656 and T1N, R13E, Private Claims 544 & 624.

Due to the nature of this project consisting of upgrades and improvements to existing structures and equipment, minimal ground disturbance activity will be conducted during the implementation of this project. Some roads, sidewalks, and equipment pads may be excavated and replaced for access to buried utilities and structures but all areas will be restored to existing use.

III. Project Work Description and Area of Potential Effects

Project Work Description:

Please see attached Description of Project Area.

Description of the APE:

The Area of Potential Effects is confined within the NESDS boundaries since no new facilities are proposed outside of those boundaries. All work will be performed within existing structures and not visible from ground level. Based on our research of the APE for the proposed project, we anticipate no historic properties will be impacted by the proposed construction activities. The project sites will be restored to their original condition following all construction activities. Any noise impacts from construction will be temporary and discontinued at the end of the project.

IV. Identification of Historic Properties

The State's website provided all State and Federally-registered sites while Wayne County and the included municipalities yielded additional information. The attached historical sites list and historical sites location map show the registered sites determined by our research. These historical sites are not expected to be impacted by the proposed project. No other cultural resources have been found within the proposed project area.

V. Photographs

Please see the attached photos.

VI. Determination of Effect

No adverse effects on nearby historic properties will be imposed by this project.

The historic properties will not be altered or diminished due to this project and no foreseeable future effects will occur. This proposed project retains the sites' existing uses and context. The project sites will be restored to their original condition following all construction activities and there will be no manifest alteration to the physical, visual, auditory, and socio-cultural integrity of the project sites.

Any noise impacts from construction will be temporary and discontinued at the end of the project. These historical sites are not expected to be impacted by the proposed project.

Please review and verify the enclosed information regarding the Wayne County NESDS SRF Project Plan Supplement No. 2. Please return comments to the applicant by June 11, 2012. You may also send comments to my attention via email at gregory.kacvinsky@ohm-advisors.com.

Sincerely,
ORCHARD, HILTZ & MCCLIMENT, INC.

_____

Gregory Kacvinsky, PE
Project Engineer

Enclosures

STATE HISTORIC PRESERVATION OFFICE

Application for Section 106 Review SHPO Use Only

IN	Received Date	/ /	Log In Date	/ /	
OUT	Response Date	/ /	Log Out Date	/ /	
Sent Date	/		/		

Submit one copy for each project for which review is requested. This application is required. Please type. Applications must be complete for review to begin. Incomplete applications will be sent back to the applicant without comment. Send only the information and attachments requested on this application. Materials submitted for review cannot be returned. Due to limited resources we are unable to accept this application electronically.

I. GENERAL INFORMATION

X THIS IS A NEW SUBMITTAL __ THIS IS MORE INFORMATION RELATING TO ER#

__ Funding Notice
__ Survey
__ MOA or PA
__ Other:

a. Project Name: **Wayne County Northeast Sewage Disposal System SRF Project Plan Supplement No. 2**
b. Project Address (if available): **Various Locations (See Letter)**
c. Municipal Unit: **Wayne County** County: **Wayne**
d. Federal Agency and Contact (*If you do not know the federal agency involved in your project please contact the party requiring you to apply for Section 106 review, not the SHPO, for this information.*): **US EPA Region 5, Andrew Lausted (See Letter)**
e. State Agency and Contact (if applicable): **MDEQ-ESSD, Karne Nickols (See Letter)**
f. Consultant or Applicant Contact Information (if applicable): **OHM | Architects. Engineers. Planners., Gregory Kacvinsky**

II. GROUND DISTURBING ACTIVITY (INCLUDING EXCAVATION, GRADING, TREE REMOVALS, UTILITY INSTALLATION, ETC.)

DOES THIS PROJECT INVOLVE GROUND-DISTURBING ACTIVITY? __YES **X** NO (If no, proceed to section III.)

Exact project location must be submitted on a USGS Quad map (portions, photocopies of portions, and electronic USGS maps are acceptable as long as the location is clearly marked).

a. USGS Quad Map Name: **Northeast Wayne County for potential ground disturbing work (See Letter)**
b. Township: **T1S** Range: **R13E** Section: **Private Claim 656**
Township: **T1N** Range: **R13E** Section: **Private Claims 544 & 624**
c. Description of width, length and depth of proposed ground disturbing activity: **(See Letter)**
d. Previous land use and disturbances: **(See Letter)**
e. Current land use and conditions: **(See Letter)**
f. Does the landowner know of any archaeological resources found on the property?
__ YES **X** NO

Please describe:

III. PROJECT WORK DESCRIPTION AND AREA OF POTENTIAL EFFECTS (APE)
Note: Every project has an APE.

a. Provide a detailed written description of the project (plans, specifications, Environmental Impact Statements (EIS), Environmental Assessments (EA), etc. **cannot** be substituted for the written description): **(See Letter)**
b. Provide a localized map indicating the location of the project; road names must be included and legible.
c. On the above-mentioned map, identify the APE.
d. Provide a written description of the APE (physical, visual, auditory, and sociocultural), the steps taken to identify the APE, and the justification for the boundaries chosen. **(See Letter)**

IV. IDENTIFICATION OF HISTORIC PROPERTIES

a. List and date **all** properties 50 years of age or older located in the APE. If the property is located within a National Register eligible, listed or local district it is only necessary to identify the district: **(See Letter)**
b. Describe the steps taken to identify whether or not any **historic** properties exist in the APE and include the level of effort made to carry out such steps: **(See Letter)**
c. Based on the information contained in "b", please choose one:
X Historic Properties Present in the APE
__ No Historic Properties Present in the APE
d. Describe the condition, previous disturbance to, and history of any historic properties located in the APE: **(See Letter)**

V. PHOTOGRAPHS

Note: All photographs must be keyed to a localized map, and should be included as an attachment to this application.

a. Provide photographs of the site itself.
b. Provide photographs of all properties 50 years of age or older located in the APE (faxed or photocopied photographs are not acceptable).

VI. DETERMINATION OF EFFECT

__ No historic properties affected based on [36 CFR § 800.4(d)(1)], please provide the basis for this determination.

X No Adverse Effect [36 CFR § 800.5(b)] on historic properties, explain why the criteria of adverse effect, 36 CFR Part 800.5(a)(1), were found not applicable.

__ Adverse Effect [36 CFR § 800.5(d)(2)] on historic properties, explain why the criteria of adverse effect, [36 CFR Part 800.5(a)(1)], were found applicable.

Please print and mail completed form and required information to:

State Historic Preservation Office, Environmental Review Office, Michigan Historical Center, 702 W. Kalamazoo Street, P.O. Box 30740, Lansing, MI 48909-8240

Description of Project Area

The proposed Northeast Sewage Disposal System (NESDS) Project Plan Supplement No. 2 area is located within the Milk River Drainage District cities of Harper Woods, Grosse Pointe Woods, and St. Clair Shores (southern fringe only). The site straddles Wayne and Macomb counties near Lake St. Claire.

This NESDS Project Plan Supplement No. 2 focuses on the Milk River Drainage District facilitation, which includes the Milk River Pumping Station & Combined Sewer Overflow (CSO) Retention Treatment Basin (MRRTB) and the Milk River Recirculation System. See the enclosed project area map for the Milk River facilities involved. These proposed improvement projects are planned for submittal to the MDEQ for SRF funding through the EPA.

The proposed work more specifically consists of the following:

- Upgrade flushing system (Basins # 1 and # 2)
- Replace elevator
- Rebuild storm pumps
- Extend / modify sanitary pump guiderails
- Dewatering pump upgrades
- Replace disinfection pumping system
- Rebuild flushing and groundwater pumps
- Modify check valves and piping for dewatering pumps
- Isolate sanitary pump wet well with sluice gate
- Upgrade electrical / lighting systems
- Repair building architectural and structural components
- Repair and upgrade aeration system
- Upgrade river recirculation system
- Upgrade the SCADA system

Activities associated with the proposed construction will occur within city and county owned property. Attempts to minimize tree removals to the extent possible will be made. Sensitive habitats impacted by construction, along with all other disturbed areas, will be restored to their previous condition prior to the construction activities. Soil erosion and sedimentation control measures, as well as local permits, will be required and followed during all construction activities. A MDEQ/Army Corps Joint Permit will be obtained for all work within, adjacent to, or nearby an inland lake or stream, wetland, or floodplain. Where work may be within a regulated sensitive habitat, such as a wetland, stream, or floodplain, there will be mitigation as part of the design and permit process per the requirements of Act 452 of 1994, as amended.

Identification of Historic Properties

Grosse Pointe Shores:

Ford, Edsel, and Eleanor, House
1100 Lakeshore Drive
National Register Listed
State Register Listed, P24099
Original Construction Date: 1927

Grosse Pointe Woods:

Childrens Home of Detroit
Informational Designation
900 Cook Road
State Register Listed, P25309
Original Construction Date: 1837

Cook School
20276 Mack Avenue
State Register Listed, P25310
Original Construction Date: 1890

St. Clair Shores:

Kramerhof Roadhouse
24800 Jefferson
State Register Listed, P24072
Original Construction Date: 1911

Point A Guignolet (Milk River Settlement)
Commemorative Designation
West Side of Jefferson between Westbury and Morningside
State Register Listed, P38390
Original Establishment Date: 1702

Selinsky-Green House
22504 11 Mile Road
State Register Listed, P24074
Original Construction Date: 1870

Shoreline Interurban Railway
Commemorative Designation
24800 Jefferson Avenue
State Register Listed, P37028
Original Establishment Date: 1898

Path: P:\0126_0165\0144110040_Milk_River_PP2_EWRG\2012 Supplement No 2\GIS FIGURES FOR REPORT\Figure 1 - Agency Notification Map.mxd

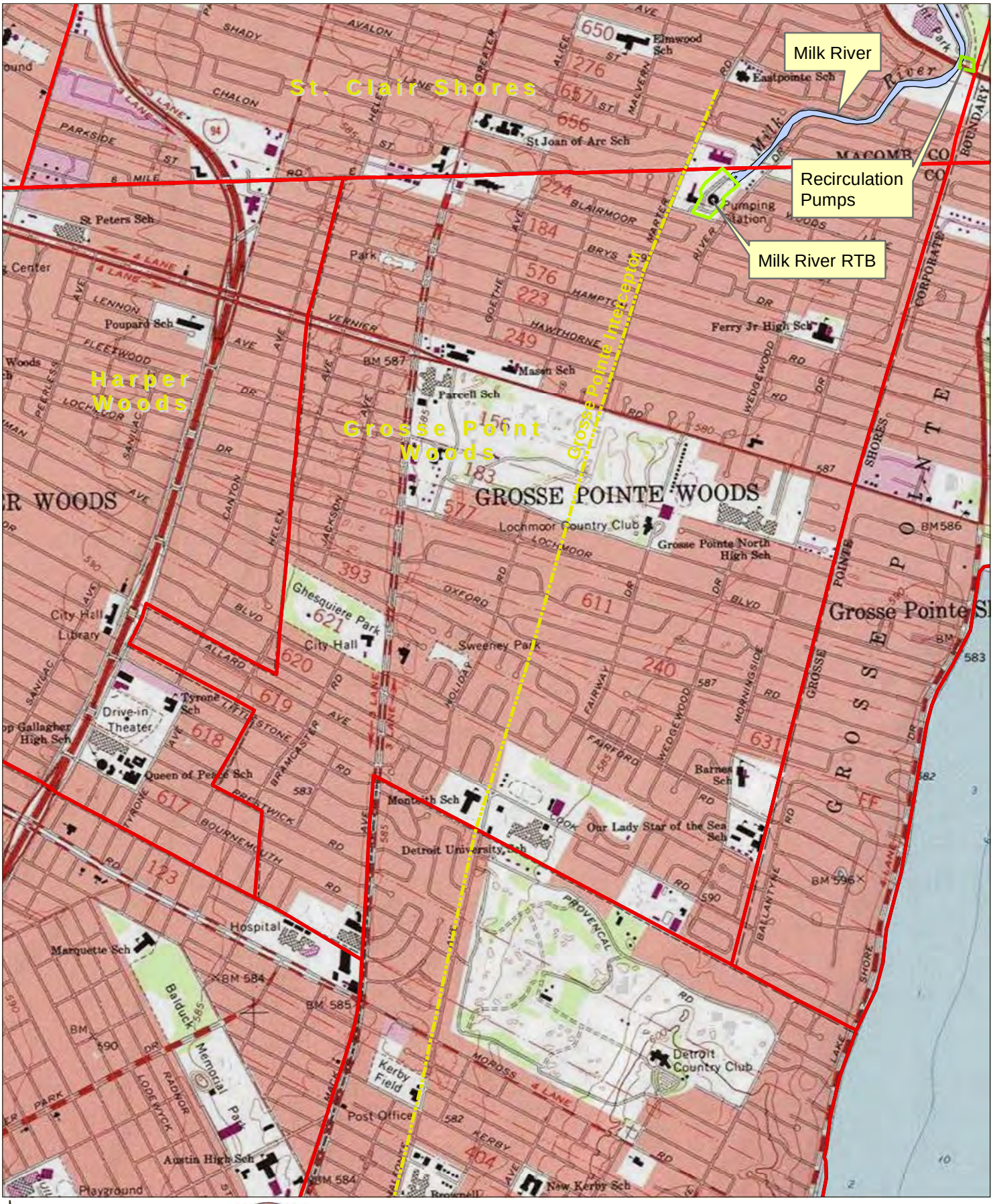
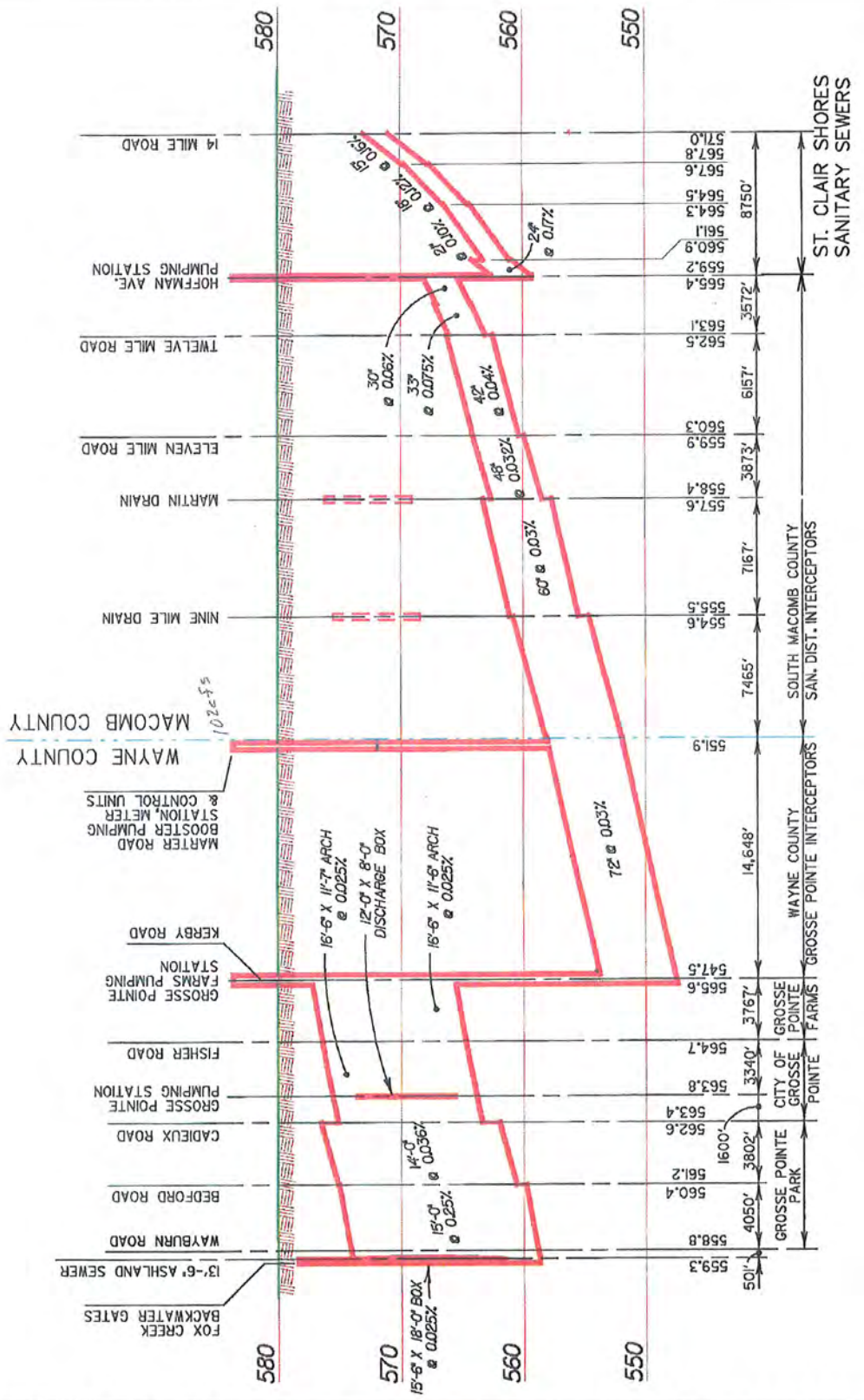


FIGURE 1
Milk River Facility Locations

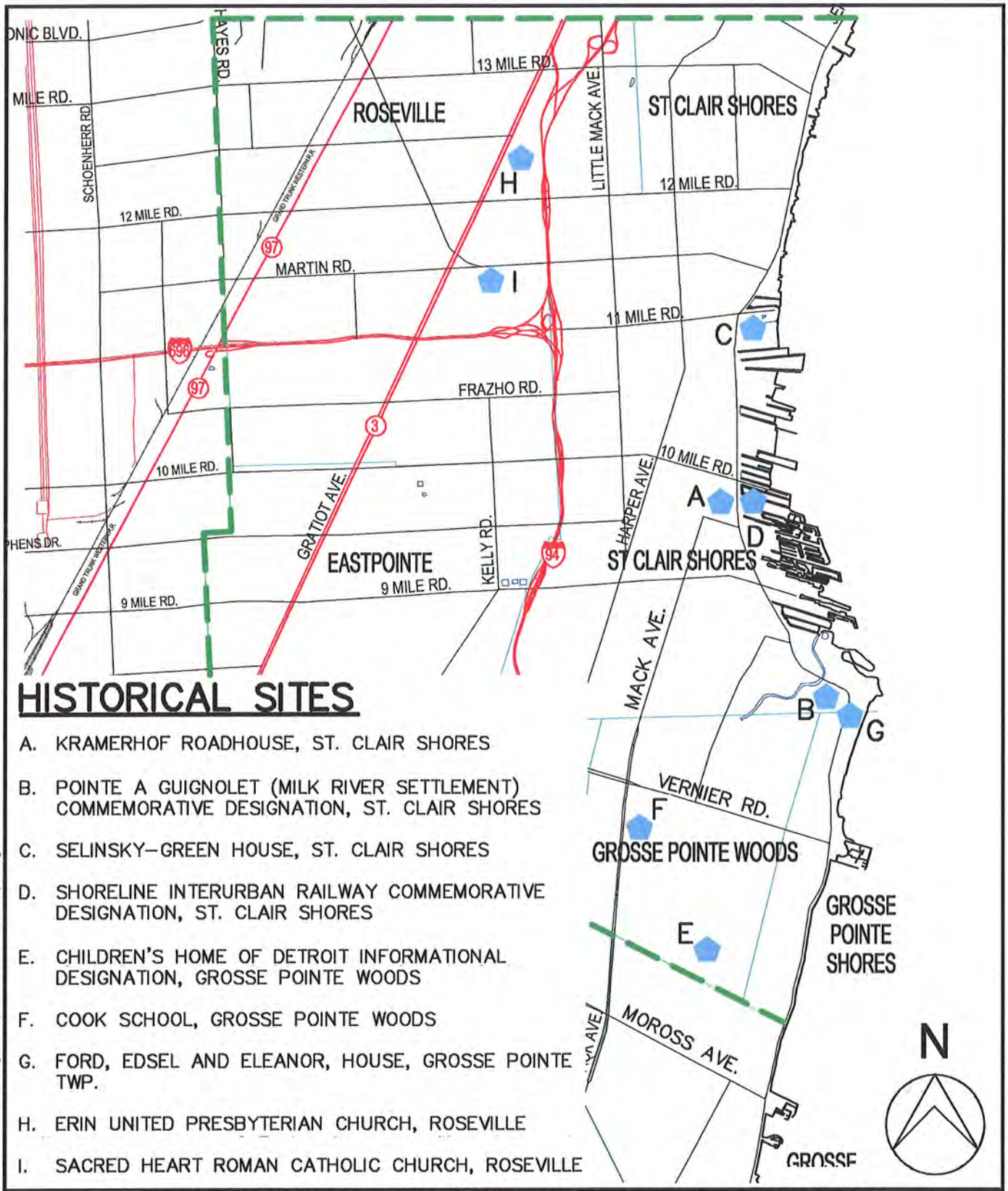
HRC HUBBELL, ROTH & CLARK, INC Consulting Engineers
OHM
888.522.6711
ohm-advisors.com



NORTHEAST SEWAGE DISPOSAL SYSTEM

REV	DATE	JOB NO. 20090224	OHM	HRC HUBBELL, ROTH & CLARK, INC Consulting Engineers	SHEET NO. FIG. 2
		DATE 4-11-09			

V:\20090224\C\Northeast_Figures\State_Historical_Permit\Fig_2.dwg



HISTORICAL SITES

A. KRAMERHOF ROADHOUSE, ST. CLAIR SHORES

B. POINTE A GUIGNOLET (MILK RIVER SETTLEMENT) COMMEMORATIVE DESIGNATION, ST. CLAIR SHORES

C. SELINSKY–GREEN HOUSE, ST. CLAIR SHORES

D. SHORELINE INTERURBAN RAILWAY COMMEMORATIVE DESIGNATION, ST. CLAIR SHORES

E. CHILDREN'S HOME OF DETROIT INFORMATIONAL DESIGNATION, GROSSE POINTE WOODS

F. COOK SCHOOL, GROSSE POINTE WOODS

G. FORD, EDSEL AND ELEANOR, HOUSE, GROSSE POINTE TWP.

H. ERIN UNITED PRESBYTERIAN CHURCH, ROSEVILLE

I. SACRED HEART ROMAN CATHOLIC CHURCH, ROSEVILLE

NORTHEAST SEWAGE DISPOSAL SYSTEM

REV	DATE	JOB NO.	SHEET NO.
		20090224	FIG. 3
		DATE	
		4–13–09	

OHM

HRC
HUBBELL, ROTH & CLARK, INC
Consulting Engineers

V:\20090224\C\Northeast_Figures\NE_Historical_map.dwg

Cook School

Cook School

Cook School

Childrens Home of Detroit

Childrens Home of Detroit

Childrens Home of Detroit

Childrens Home of Detroit

Childrens Home of Detroit

Childrens Home of Detroit

Ford Edsel & Eleanor, House

Ford Edsel & Eleanor, House

Ford Edsel & Eleanor, House

Ford Edsel & Eleanor, House

Point a Guignolet (Milk River Settlement)

Point a Guignolet (Milk River Settlement)

Point a Guignolet (Milk River Settlement)

Point a Guignolet (Milk River Settlement)

Point a Guignolet (Milk River Settlement)

Kramerhof Roadhouse

Kramerhof Roadhouse

Kramerhof Roadhouse

Kramerhof Roadhouse

Kramerhof Roadhouse

Shoreline Interurban Railway

Shoreline Interurban Railway

Shoreline Interurban Railway

Selinsky – Green House

Selinsky – Green House

Selinsky – Green House

Selinsky – Green House

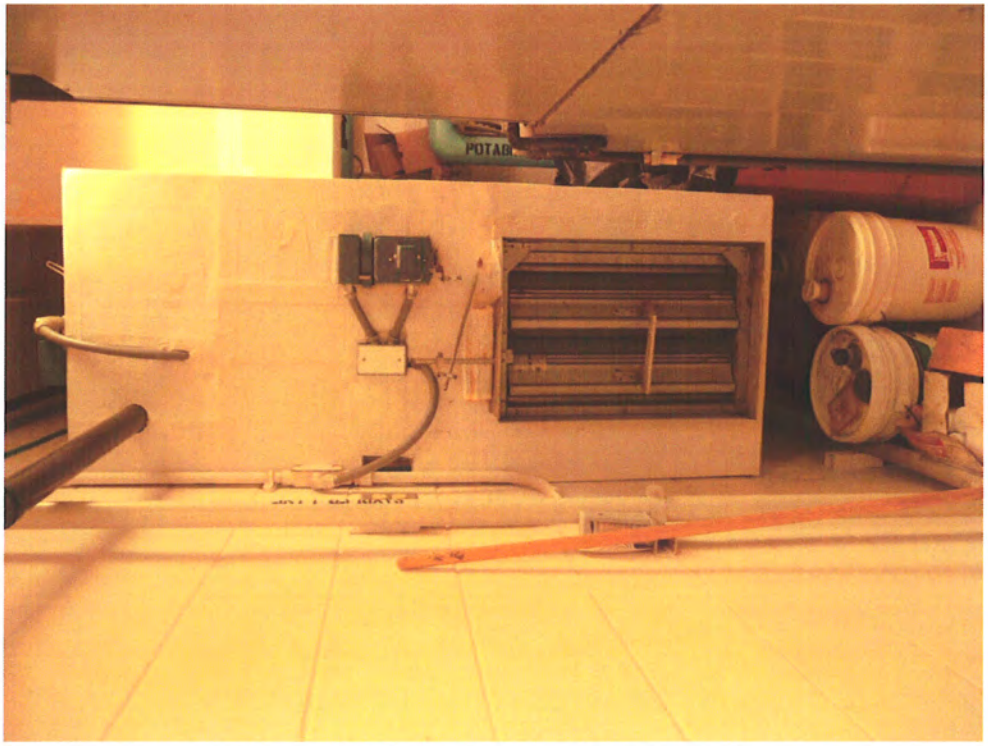
Selinsky – Green House

Milk River Retention Basin and Pumping Station

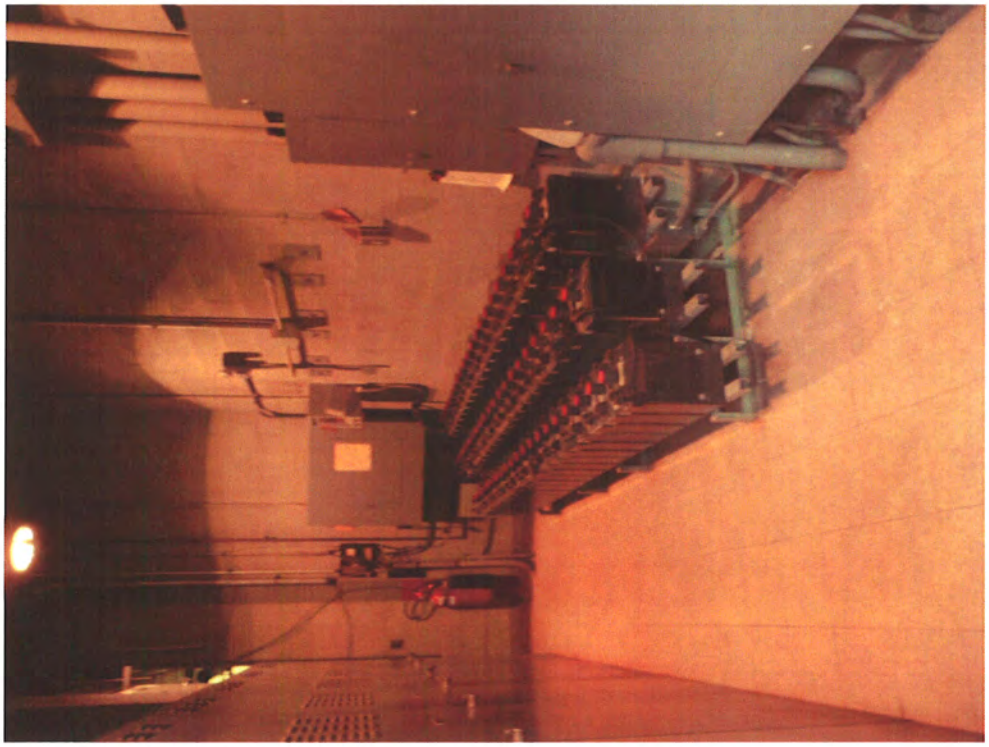
Milk River Retention Basin and Pumping Station

Milk River Retention Basin and Pumping Station

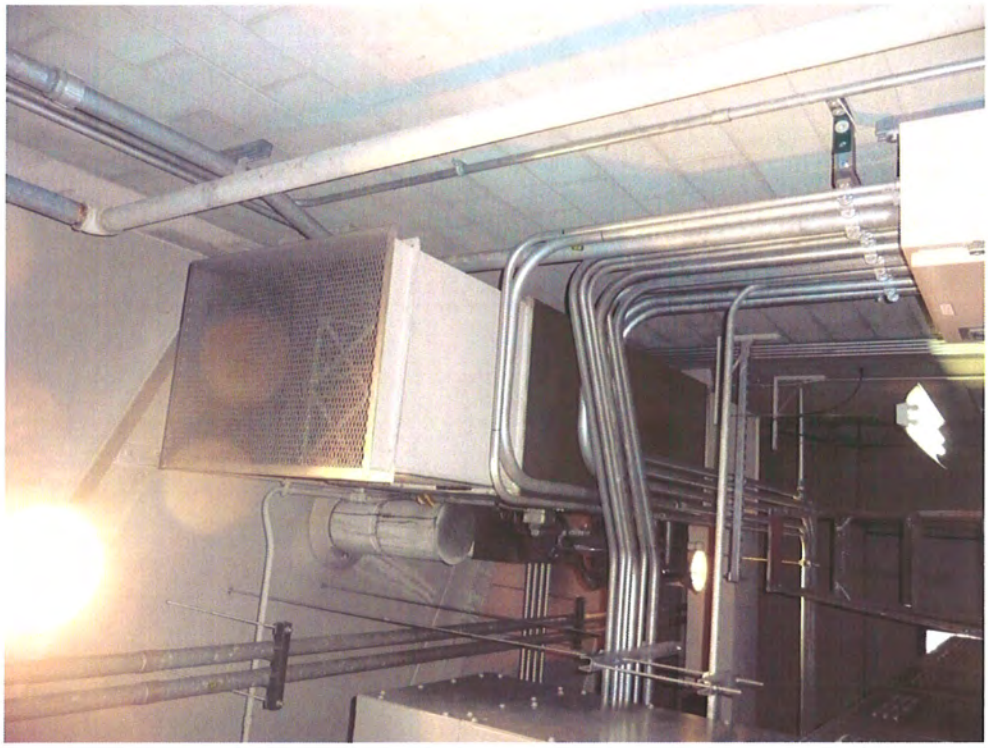
Milk River Retention Basin and Pumping Station



Milk River Retention Basin and Pumping Station



Milk River Retention Basin and Pumping Station



Milk River Retention Basin and Pumping Station

STATE OF MICHIGAN
RICK SNYDER
GOVERNOR
MICHIGAN STATE HOUSING DEVELOPMENT AUTHORITY
STATE HISTORIC PRESERVATION OFFICE
GARY HEIDEL
EXECUTIVE DIRECTOR

June 22, 2012

SONYA T BUTLER
SECTION CHIEF RLOCS
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
P O BOX 30273
LANSING MI 48909

RE: ER09-323 Wayne County Northeast Sewage Disposal System SRF Project Plan Supplement No. 2, T1S, R13E, T1N, R13E, Wayne County (EPA)

Dear Ms. Butler:

Under the authority of Section 106 of the National Historic Preservation Act of 1966, as amended, we have reviewed the above-cited undertaking at the location noted above. Based on the information provided for our review, it is the opinion of the State Historic Preservation Officer (SHPO) that **no historic properties are affected** within the area of potential effects of this undertaking.

The views of the public are essential to informed decision making in the Section 106 process. Federal Agency Officials or their delegated authorities must plan to involve the public in a manner that reflects the nature and complexity of the undertaking, its effects on historic properties and other provisions per 36 CFR § 800.2(d). We remind you that Federal Agency Officials or their delegated authorities are required to consult with the appropriate Indian tribe and/or Tribal Historic Preservation Officer (THPO) when the undertaking may occur on or affect any historic properties on tribal lands. **In all cases**, whether the project occurs on tribal lands or not, Federal Agency Officials or their delegated authorities are also required to make a reasonable and good faith effort to identify any Indian tribes or Native Hawaiian organizations that might attach religious and cultural significance to historic properties in the area of potential effects and invite them to be consulting parties per 36 CFR § 800.2(c-f).

This letter evidences the EPA's compliance with 36 CFR § 800.4 "Identification of historic properties", and the fulfillment of the Epa's responsibility to notify the SHPO, as a consulting party in the Section 106 process, under 36 CFR § 800.4(d)(1) "No historic properties affected."

The State Historic Preservation Office is not the office of record for this undertaking. You are therefore asked to maintain a copy of this letter with your environmental review record for this undertaking. If the scope of work changes in any way, or if artifacts or bones are discovered, please notify this office immediately.

If you have any questions, please contact Brian Grennell, Cultural Resource Management Specialist, at (517) 335-2721 or by email at grennellb@michigan.gov. **Please reference our project number in all communication with this office regarding this undertaking.** Thank you for this opportunity to review and comment, and for your cooperation.

Sincerely,

Brian G. Grennell
Cultural Resource Management Specialist

for Brian D. Conway
State Historic Preservation Officer

SAT:BGG:ses

Copy: Gregory Kacvinsky, OHM

APPENDIX C

Resolutions
Public Notification Records
Public Hearing Transcript

AFFIDAVIT OF LEGAL PUBLICATION

Grosse Pointe News

96 Kercheval
Grosse Pointe Farms, Michigan 48236
(313) 882-3500

COUNTY OF WAYNE
STATE OF MICHIGAN, SS.

Joe Warner

being duly sworn deposes and says that attached advertisement of

Wayne County Department of Pubic Services

was duly published in accordance with instructions, in the GROSSE POINTE NEWS on the following date:

May 10, 2012

#2 WC 5/10 PUBLIC HEARING

and knows well the facts stated herein, and that he is the General Manager of said newspaper.

Subscribed and sworn to before me this 10th day of May A.D., 2012

Notary Public, Macomb County, Michigan
Acting in Wayne County

My Commission Expires April 26th, 2013

BARBARA VETHACKE
NOTARY PUBLIC - STATE OF MICHIGAN
COUNTY OF MACOMB
My Commission Expires 04-26-2013
Acting in the County of Wayne

NOTICE OF PUBLIC HEARING

The Wayne County Department of Public Services will hold a public hearing on the proposed improvements to the Milk River Pumping Station, Milk River Combined Sewer Overflow (CSO) Retention Treatment Basin, and the Milk River Recirculation System for the purpose of receiving comments from interested persons. This public hearing will be held as part of a meeting by the Milk River Intercounty Drain Drainage District (MRIDDD).

The hearing will be held at 5:30 P.M. on Tuesday, June 12, 2012 at the Grosse Pointe Woods Community Center (Lake Room) located at 20025 Mack Plaza, Grosse Pointe Woods, MI 48236.

The purpose of the proposed projects is to maintain the operational capability of the Milk River pumping/storage/recirculation facilities and to meet regulatory compliance obligations with the Michigan Department of Environmental Quality (MDEQ).

Project construction will involve upgrades to the sanitary and storm water pumping systems, disinfection pumping system, flushing systems for the underground storage tanks, and the aeration system. Associated upgrades will also be made to the electrical and automation systems, buildings, and the Milk River recirculation system.

Construction will be limited to the Milk River facilities, and minimal disruption is anticipated outside of the Milk River pump station / retention treatment basin site. Construction related impacts include short term noise and dust in the immediate vicinity of the Milk River facilities.

The County is proposing to fund the project with money collected from user charges. The estimated annual cost increase to a typical household for the proposed projects will be as follows:

St. Clair Shores residents:	$ 0.21
Grosse Pointe Woods residents:	$ 113.88
Harper Woods residents:	$ 74.88

The total project costs for Priority 1B improvements are estimated at $15,920,000.

Copies of the plan detailing the proposed projects are available for inspection beginning on May 11, 2012 at the following locations:

Wayne County Department of Public Services, 400 Monroe Street, Suite 400, Detroit, MI 48226
City of St. Clair Shores, 27600 Jefferson Circle Drive, St. Clair Shores, MI 48081
City of Harper Woods, 19617 Harper, Harper Woods, MI 48225
City of Grosse Pointe Woods, 20025 Mack Plaza, Grosse Pointe Woods, MI 48236

Written comments received before the hearing record is closed on June 12, 2012 will receive responses in the final project plan. Written comments should be sent to:

David Lakin, Wayne County Department of Public Services
Water Quality Management Division
400 Monroe Street, Suite 400
Detroit, MI 48226

Published May 10, 2012

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Milk River
Intercounty Drain
Drainage Board Meeting
20025 Mack Plaza
Grosse Pointe Woods, MI 48236
Tuesday, June 12, 2012
5:30 p.m.
Sign In Sheet
Lake Room

Name	Representing	Tel. #	Fax #	E-mail
KPRileyConley	WayneCounty	313-224-7679	313-224-0045	Kconley@co.wayne.mi.us
DENNIS SCULLY	WAYNE COUNTY	224-5561	224-0045	DSCULLY@co.WAYNE.MI.US
DAVID LAKIN	WAYNE COUNTY	313-224-8283	313-224-0045	dlakin@co.wayne.mi.us
GENE SCHABATH	MCDNO	586-469-7424		GENE.SCHABATH@MACOMBCOUNTY.ORG
Vyto Kaunelis	OHM	734-4664435		vyto.kaunelis@ohm-advisors.com
Greg Kacvinsky	OHM	734-466-4476		greg.kacvinsky@ohm-advisors.com
T.J. Garrett	Haley Law Firm AT&T	810.772.1275		Whaley@haleylawfirm.com
Laura Stowell	~~24301 Northwestern~~ City of Harper Woods	313-343-2516		findir@harperwoods
Jeff Oros	IPS / Monarch	330-609-5334		Joros@IPS.US
Dave Watters	IPS/Monarch	313-515-7100		dwatters@IPS.US
Benjamin Hughes	City of St Clair Shores	586-447-3311		hughes@SCSMI.net

Milk River
Intercounty Drain
Drainage Board Meeting
20025 Mack Plaza
Grosse Pointe Woods, MI 48236
Tuesday, June 12, 2012
5:30 p.m.
Sign In Sheet
Lake Room

Name	Representing	Tel. #	Fax #	E-mail
DAN ALFORD	WAYNE CO.	734-285-5223	734-285-5248	dalford@co.wayne.mi.us
Bob Novitke	Grosse Pointe Woods	586 772-6441		magannovitke@comcast.net
Mike Gregg	MDARD	5173739802		greggm@michigan.gov
Brent Avery	MCPWC-RTB's	(586) 772 3425	(586) 772-8881	Ba.avery@Comcast.net

INTERCOUNTY DRAINAGE BOARD MEETING

20025 MACK AVENUE

GROSSE POINTE WOODS, MICHIGAN 48236

- - -

Tuesday, June 12, 2012

5:30 p.m.

- - -

BOARD MEMBERS:

Michael Gregg, Chairperson

Kerreen Conley, Secretary

Robert Novitke, Mayor, Grosse Pointe Woods

Benjamin Hughes, City Manager, St. Clair Shores

Gene Schabath, Deputy Commissioner, Macomb County Public Works

ATTENDEES:

David Lakin, Project Engineer

Dan Alford, Wayne County

Dennis Scully, Wayne County

Brent Avery, MPWC-RTB

Vyto Kaunalis, OHM

Gregg Kacvinsky, OHM

T.J. Garrett, Haley Law Firm

Laura Stowell, Harper Woods

Jeff Oros, IPS/Monarch

Dave Watters, IPS/Monarch

- - -

MR. GREGG: Ladies and gentlemen, let's call to order the Milk River Intercounty Drainage Board. And because we've got some new faces here, I'm going to suggest we go around the room with some self-introductions, and I'll start off. My name is Michael Gregg. I'm with the Michigan Department of Agriculture and Rural Development, and I serve as the chairperson of the drainage board, and that board is comprised of a number of representatives from the communities as well as the county. So we'll go around the table.

MS. CONLEY: I'm Kerreen Conley, director of Facilities Management from Wayne County. I serve as deputy drain commissioner.

MR. HUGHES: My name is Ben Hughes. I'm the city manager in St. Clair Shores, recently appointed to this board as investigating member. We had a changeover in mayors. I've been appointed to replace the role Bob Hastings used to fill.

MR. GREGG: Welcome.

MR. ALFORD: I'm Dan Alford. I'm the assistant plant superintendent with Wayne County, so I direct the operation of the facilities of Milk River.

MR. SCULLY: Dennis Scully, deputy administrator within Wayne County.

MR. LAKIN: I'm Dave Lakin. I'm with Wayne County. I'm the project engineer for this project.

MR. SCHABATH: I'm Gene Schabath, Macomb County Public Works office.

MR. KACVINSKY: I'm Greg Kacvinsky. I'm with OHM of Livonia. We're consulting engineers.

MR. NOVITKE: Bob Novitke. I'm mayor of Grosse Pointe Woods.

MR. AVERY: I'm Brent Avery. I'm with Macomb County Public Works. I work just up the road, to the north of two treatment facilities for Macomb County.

MR. KAUNELIS: Vyto Kaunelis.

MS. GARRETT: T.J. Garrett, Haley Law Firm. We're here regarding the AT&T proposal.

MS. STOWELL: Laura Stowell, financial director in Harper Woods.

MR. OROS: Jeff Oros, manager, Monarch Electric IPS.

MR. WATTERS: Dave Watters, account manager, Monarch Electric. IPS Monarch Electric.

MR. GREGG: All right. Folks, thank you for that.

MR. NOVITKE: You know, if we knew we were going to have this many people, we could have set this up, whoever was making that contact with Sue over here --

there's supposed to be coffee and water.

MR. GREGG: Sure. Who else needs to sign?

(Discussion held off the record.)

MR. GREGG: There is an agenda prepared by the secretary of the board of Wayne County for your review and consideration. Take a look at that. If there's any additions or deletions.

MR. NOVITKE: Do you want to make a motion to approve the agenda?

MR. GREGG: I think that would be appropriate.

MR. NOVITKE: I make a motion to receive and place on file all items on the agenda and take them in their order of appearance.

MR. GREGG: Very well. Support?

MR. HUGHES: I will support.

MR. GREGG: Support. Motion has been made and supported. Discussion? Hearing none, those in favor, aye. Opposed, none.

And the next item of business is the approval of our minutes of the last meeting. I didn't realize it had been November 23rd, wow, 2011. I did note one slight correction that I was going to suggest, and that is relative to the membership of the board members present, it was myself, not my colleague Brady Harrington. So with that correction, I was comfortable with the minutes.

MR. NOVITKE: I'll make a motion to approve the minutes from November 23rd, 2011, as corrected.

MR. GREGG: Very well. Support?

MR. HUGHES: I support it.

MR. GREGG: And the motion has been supported to approve those minutes as corrected.

Discussion on the motion? Hearing none, those in favor, aye.

MR. NOVITKE: I just have one. Pump 3, just down here, "Reports," Pump 3 has been. Once Pump 7 has proven it is operational, Pump 3 will be set up -- that went out for repairs?

MS. CONLEY: Yes. And later on in the agenda, Items B and C, we'll talk about --

MR. NOVITKE: The additional repair costs.

MS. CONLEY: Yes.

MR. NOVITKE: I'm assuming Pump 7 is fine and nothing we anticipate we'll spend money on; right?

MS. CONLEY: Correct.

MR. NOVITKE: All right. Thank you.

MR. GREGG: You're welcome. Again, any further discussion on the motion? Hearing none now, those in favor, aye? Opposed? None. Motion passes.

Well, one of our primary purposes of meeting this evening is to conduct a public hearing relative to a

state revolving fund proposed project plan, and the supplements to the original plan, I guess, is really what this amounts to. And I will ask, who would like to take the lead on presenting this portion of the agenda?

MS. CONLEY: I think Dave will do the introduction, and then we've got OHM here to actually give a formal presentation and to answer any questions that we might have.

MR. GREGG: Very good.

MR. LAKIN: Thank you. The Supplement 2 project plan is an extension of the 2009 Project Plan, and it was divided into two parts because of an enforcement action that was given by the DEQ for necessary improvements to the Northeast System and the Milk River System. The Northeast System is actually what is called Supplement No. 1, and it had very distinct improvements that had to be made to that system, and now we are discussing the Supplement 2 project plan and OHM is here tonight to discuss some of the specifics of those improvements. So I will turn it now over to OHM.

MR. KACVINSKY: The improvements to the Milk River facility, which is part of the Supplement No. 2, the SRF Project Plan, this was brought together as part of, as Dave mentioned, a larger picture treatment scheme for the entire northeast sewage disposal district.

Supplement No. 2 focuses on Milk River facilities, and I'm going to discuss some of the facilities tonight.

The reason for this public hearing is that it's a requirement of the SRF project planning component. In order to receive low interest loan funding from the state, the public hearing has to be held prior to the submittal of the final report. Any comments received from the public, either before this meeting or during this meeting, will be entered into the record and, if necessary, addressed in the final report before it's sent to the DEQ, and that's the reason for this meeting.

Just to give this a larger picture, after this meeting we'll make any changes necessary to the final report and submit that to the DEQ by the end of June. After that, it will be considered for funding and later on this year find out whether funding will be received. If funding is approved, again it would open the door for improvements to the Milk River facilities as early as late 2013 or early 2014.

I'm not going to go into the technical components of this in detail, but the Milk River facility is a relatively complex facility that includes facilities for combined sewage, pumping sanitary sewage back into the interceptor, the interceptor sewer handling wet water flows and treating those before they're discharged into

Milk River and Lake St. Clair.

The list of improvements on this screen is basically those components of the Milk River facility which will require upgrades in order to maintain the usefulness of the facility and making sure that the facility meets MDQ requirements for water storage and treatment.

I'm not going to go through these item by item, but if anybody has any questions about these items, please let me know.

This is a schematic of the Milk River facility. The flows come into the facilities here (indicating.) During dry weather these sanitary pumps pump back to the interceptor, and during wet weather flow enters into this tank and storm pumps pump into the retention tank, that's where the water is stored, and then aerated prior to discharge back to the Milk River. I should say, aerated and disinfected to clean up the water before it gets to Lake St. Clair.

The individual components of the entire Milk River facility need to be upgraded. Some of the major cost components include upgrades to the storm pumps and the pump motors, upgrading the flushing system to the retention treatment tanks; that's necessary because the existing flushing system is pretty old and there is a

buildup of solids and sediments in these tanks that needs to be addressed so they function in the long-term. Upgrades to the aeration tank, some piping. Also upgrades to the disinfection system so the water is treated before it's discharged back to Milk River.

Are there any questions at all on the facility?

MR. NOVITKE: Well, a lot of these, are they not mandated by the state and investigated when they came out here?

MS. CONLEY: No. Many of the items we're talking about were on the list of things that -- there are two parts. Many of them were on the list originally in the 2009 project plan, that when we actually took a look at that, it was the request of the community to try and time it in sync with some of the depth (?) that was retiring. Other parts of it were additional items under the administrative consent order we needed to address as well.

MR. NOVITKE: That's what you told us last time.

MS. CONLEY: I'm not changing my story.

MR. GREGG: Well, with the passage of time, there are simply items that have reached their useful life, as I read through this, as well as some components which probably never did get to their useful life. So

there's a combination of features, it seems to me, that this addresses collectively and comprehensively, as it should be. So that's the way I kind of viewed the report.

MR. KACVINSKY: The cost estimate in the public notice is based on the Priority 1-B projects; these are the projects that will be implemented in the first two years after receiving the funding, so starting in 2013 through 2014 and 2015. We'd be addressing the critical components of the system that are necessary to keep the Milk River facilities up and running.

I should also mention, besides the pumps and tanks, it does involve some electrical upgrades and some upgrades to the control system so it can be operated remotely, which helps to save on staffing costs.

These are the list of Priority 1-B projects. The total amount, 15.92 million is the total in the public notice and is broken down by the component. The primary cost components would be the flushing system improvements in the larger tanks, the electrical system upgrades, and then the upgrades to the storm pumps and the pump motors, which is more of a recent -- recently identified as needing to be addressed. These numbers have been developed with careful coordination with county staff on which components need to be addressed, site

inspections, facility inspections, and we have over the last several months been sharing this information with county staff and verifying that these numbers are appropriate.

Are there any questions on the budget or the breakdown of the budget?

MR. NOVITKE: This one sheet, is it easy enough for you to print a copy for us, for all the board members to have? I'd like to see the breakdown while I'm asking questions.

MR. KACVINSKY: Sure. Absolutely.

MR. LAKIN: It is in the project plan.

MS. CONLEY: Yeah. The full project plan was put on file in each of the communities. So this should -- the whole actual, the whole project, this entire thing should be on file at your --

MR. KACVINSKY: We'll make sure we do that.

MR. GREGG: Thank you. Greg, could you explain what the river recirculation system includes besides the noted electrical as stated? Does that include any of the intake pipe replacement, or what all is included there?

MR. KACVINSKY: It does. The intake pipe replacement is a Priority 4 project. That's not represented in these numbers, but it does -- a lot of the costs with the recirculation system, the majority of the

costs are going to be out years, not represented here. The intake pipe is a Priority 4 project, so that's set out almost 20 years, a little bit beyond 20 years.

I'm going to -- actually, I'm going to ask Vyto to describe in more detail the recirculation system.

MR. KAUNELIS: The components that are included in the project are mostly at the recirculation pump station. There's some piping there that is constrained, and so there's some replacement of the pumps and replacement of some of the piping in the pumping station as well as the screening facilities. So primarily it's in the pump station that's out there on Jefferson is the primary work.

There are also -- I believe that there's inspection work included for the recirculation pipe. The intake is included in there and there's some -- there may need to be a chlorine line put in there for the zebra mussel control. So as part of the inspection and as part of checking that out, the cost was included for that component as well.

MR. GREGG: And pardon me if I missed this, but relative to the ACO -- and Kerreen, you might be the best one to answer this -- where did we end up with this whole debate about extending the intake out into the lake further and that whole DO issue?

MS. CONLEY: The ACO is not yet finalized. It's still being debated with the attorneys ironing that out. But I think in that -- Vyto, you can correct me if I'm wrong -- that was not something that we ended up having to agree to as much as we decided to do additional monitoring.

MR. KAUNELIS: The way that it was proposed in the consent order by the county was that the improvements, these Priority 1-B improvements, would be implemented, and then after the improvements to monitor the dissolved oxygen in the river, and then at that point make the decision on the need for further improvements. There was discussion with the state that if further DO improvements were needed, an intake extension is probably not the most cost-effective way to do it. I think that was actually addressed in the project plan that there's other mechanisms. Originally, way back when, that intake extension was thought to be the best way to handle that if it was needed. And the state has indicated also that they believe that it's very close to meeting the DO requirement. It's relatively rare that it occurs, that the DO sag has occurred. And there's usually been extenuating circumstances, but it's occurred often enough that they're not very comfortable with that.

So the county is going to be doing the

monitoring of the DO after the project. And then if it's found that the DO is not sufficient, there is a plan -- I think there may even be some costs in there in one of the further phases, of what that could potentially be. But there is a mechanism to add more oxygen into the river at the head end. That would actually be quite a bit more cost effective than an extension to the intake.

MS. CONLEY: And the monitoring is included in this project.

MR. GREGG: And then somewhat of a related topic is the whole subject of dechlorination. Is that still in play?

MR. KAUNELIS: The NPDES permit is -- there should be a new NPDES permit coming out. I don't think there is a draft out yet. But as part of the NPDES permit, there are TRC minimization studies that are included as part of that. And then depending on the outcomes of those studies, it could lead to the point where dechlorination may need to be considered.

MS. CONLEY: And we anticipate they won't issue us a new permit, which already expired, until they've reached an agreement. So once we have concurrence with that, they'll likely issue us a permit.

MR. GREGG: So we'll buy considerable time, though, by undertaking these improvements and showing

good faith towards addressing some of these issues.

MR. KAUNELIS: And each of the improvements are definitely going to lead to better control of the facility, so your chances of meeting the requirements are going to be much better.

MR. GREGG: Got it. Thanks. Any other questions?

MR. NOVITKE: I have one. If you don't get the funding, what's the game plan? Or is that not something that will ever happen?

MS. CONLEY: One of the advantages of the ACO is that -- one of the few advantages is that you get bonus points, I guess, if you will, when you're being evaluated by funding. So it should put us in the ballpark where we would likely be --

MR. NOVITKE: Highly unlikely we would not be funded.

MS. CONLEY: I can't make any guarantees, but if we weren't funded and -- we did not receive SRF funding, we would have to look to funding it without SRF.

MR. NOVITKE: And then assuming it is approved, what's the time line? When do you start and when do you end?

MS. CONLEY: The time line with this one is we will submit the project plan by July 1st. They will

review it. And we would look to do the engineering for these Priority 1-B's over the next year, which would line us up to be able to enter into a construction phase in 2013-14 when funding becomes available. Usually it's in October, September. The fall is usually when we find out where the priorities are listed and find out whether or not you fall in the fundable range.

And then as a part of the SRF, when you close on the loan, you then can draw down the engineering costs that you've already incurred to get to the point where you would actually construct your project.

MR. NOVITKE: So I assume your construction starts 2013, 2014. What's the anticipated time for construction? Are you talking about a year? Two years? Five years?

MR. KACVINSKY: We assumed for the Priority 1, end of 2013, 2014, and 2015, because the facility -- in order to replace the components, the facility has to remain in use. We can't just shut it down and reconstruct it all. So we have to take it bit by bit. So there will be phasing and it would likely expand out a few construction seasons.

MR. NOVITKE: Okay. So the question is, how long do you expect it to be? Is it two years? Is it three years? Is it five years?

MR. KACVINSKY: Starting end of 2013 through 2015 for Priority 1.

MR. KAUNELIS: Two years. A year for design and two years for construction.

MR. NOVITKE: Then I think the last question I have here: As you said, you have to do it in phases so you don't shut it down. But during this process, do we anticipate we're going to have increased operational costs because you have something down and you have to bring in something to offset that? I mean, it's not my bailiwick. Hopefully, the engineers know how you phase it in. We don't have any additional equipment or anything we have to bring in?

MR. ALFORD: Not typically. When we contract it out, we require a sequence that allows us to have full operational -- whatever you would need. So the contractor has to demobilize and remove themselves from the tank before the rain storm hits.

MR. NOVITKE: So you're talking about a pump motor or something, if that's down, taken care of, refurbished or something, we don't have to bring in outside equipment; or if we do, it's built into the cost?

MR. ALFORD: We already have it built in. We would always have the other six in service.

MR. NOVITKE: Every time I leave here, I feel

better than when I walked in.

MR. GREGG: Let's hope that streak continues.

Any questions? No? Go ahead.

MR. KACVINSKY: I think that -- I did mention the intake pipe for the recirculation system, and that's shown as a Priority 4-B. So these would be -- Priorities 2 through 4 would be out years. Some of these would be pump replacements and facility replacements after they reach the end of their useful life. And these were not included in the total cost estimate in the public notice, but these would be anticipated costs for continuing adequate facility function over the long term. Obviously, the most significant component of this being the intake pipe replacement for the recirculation system.

MR. GREGG: That's good. That's out there another 12, 15 years. Keep kicking that can down the road.

All right. Very good. I appreciate that, Greg.

MR. KACVINSKY: And Q&A, we've already done some of it. Are there any others?

MR. GREGG: This goes to everyone in attendance in terms of questions or answers. This is a public meeting and public hearing on this recommendation, so now is the opportunity and the time to make any comments

relative to what's proposed and any other questions.

Mayor, did the second graphic get in your pack there, do you know?

MR. NOVITKE: Yes. The 2-B and 3-B, yes.

MR. GREGG: Good.

MR. NOVITKE: Do you need a motion to close the public hearing?

MR. GREGG: I think probably it would be appropriate at some point here. It doesn't look like anybody's jumping up and down to comment.

Last call, so to speak, on the comment period for the SRF project.

MR. AVERY: Thank you for undertaking the entire project.

MR. GREGG: Well, coming from you, Brent, that is a compliment. We do appreciate your collaboration with us on this. Brent's offered a lot of valuable experience throughout a lifetime of operating this facility and sharing his experiences.

MR. HUGHES: I make a motion, Mr. Chairman, to close the public hearing for the SRF Project Plan.

MR. GREGG: Very well. Is there support for that motion?

MR. NOVITKE: I'll support it.

MR. GREGG: Support and discussion on the

motion? Hearing none, those in favor of the motion state aye. Aye. Opposed? Hearing none, that motion passes, and we'll consider the public hearing portion of the SRF Project Plan closed. With the comments you've received, I'm not sure that much modification will be required.

You indicated that the filing deadline is June 30th. Or July 1st. Okay.

MR. KACVINSKY: From our standpoint, before June 30th.

MR. GREGG: Will that be hand delivered?

MR. KACVINSKY: Well, if it's that late, yes. Our intent is to get it there before.

MR. GREGG: Very well.

- - -

STATE OF MICHIGAN)
) SS.
COUNTY OF WAYNE)

I, Lillian Altpeter, a duly certified stenographic reporter, do hereby state that the foregoing proceedings were reported by me using the stenographic method, to the best of my ability. While acoustical limitations render a completely verbatim record impossible, every effort has been made to produce an accurate record of the foregoing proceedings.

IN WITNESS WHEREOF, I have hereunto set my hand at Grosse Ile, County of Wayne, State of Michigan, this 22nd day of June, 2012.

_____
Lillian Altpeter, CSR-6274
Registered Professional Reporter
Notary Public, Wayne County, Michigan
My Commission expires: September 24, 2006

- - -

Supplement No. 2
for
2009 SRF Project Plan

for improvements to the

Northeast Sewage Disposal System
Including Milk River System

Wayne County
Department of Public Services
June 12, 2012

Public Hearing

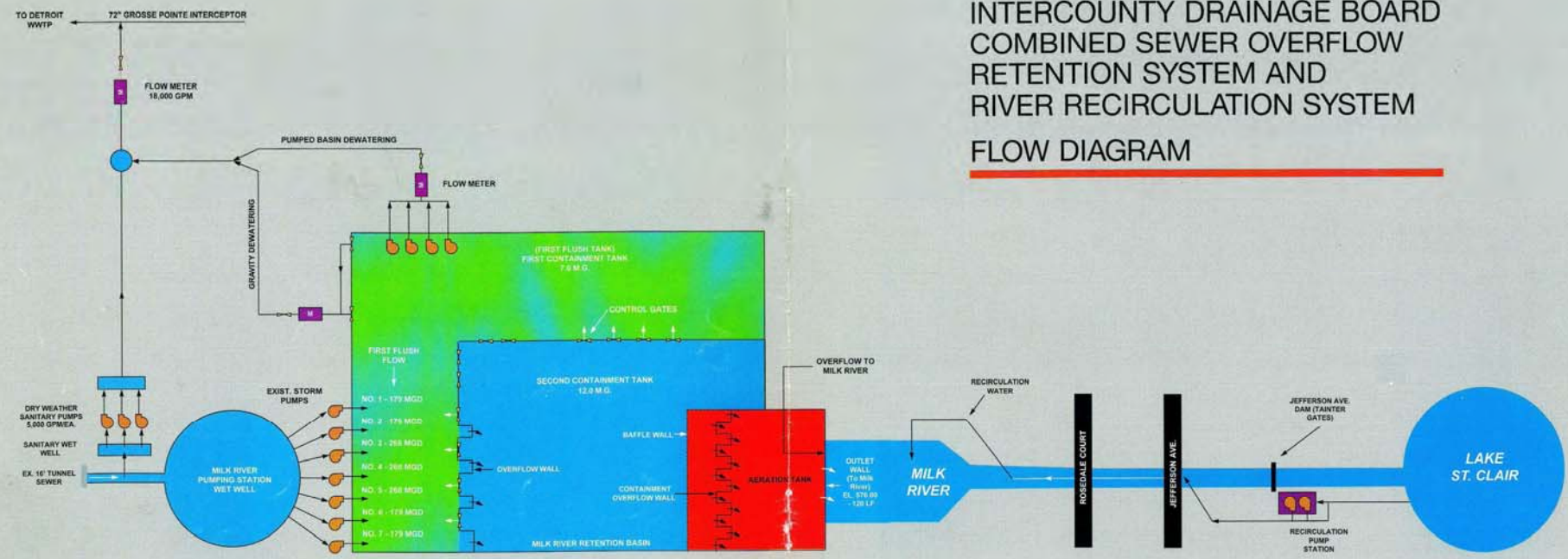
- Tonight's Meeting
  - Includes a Public Hearing to take public comments on the proposed improvements (requirement of the SRF process)
- Next Steps
  - Milk River Intercounty Drain Drainage Board (MRIDDD) will consider a resolution to adopt the proposed plan
  - Submit the Final SRF Project Plan (Supplement No. 2) to the MDEQ before July 1, 2012
  - If funding is approved, facility improvements will begin in late 2013 or early 2014

Milk River Improvements

- In order to meet the requirements of the draft ACO, the following facility improvements will be necessary:

Upgrade flushing system	Modify valving/piping for dewatering pumps
Replace elevator	Isolate sanitary pump wet well with sluice gate
Rebuild storm pumps and motors	Upgrade electrical / lighting systems
Extend / modify sanitary pump guiderails	Repair building architectural / structural components
Upgrade dewatering pump	Repair and upgrade aeration system
Replace disinfection pumping system	Upgrade river recirculation system
Rebuild flushing and groundwater pumps	Upgrade the SCADA system

Retention Basin and Recirculation System



MILK RIVER
INTERCOUNTY DRAINAGE BOARD
COMBINED SEWER OVERFLOW
RETENTION SYSTEM AND
RIVER RECIRCULATION SYSTEM

FLOW DIAGRAM

Priority 1B Projects

Priority 1B Projects (FY 2013 - FY 2015)	Capital Cost
Flushing system improvements (Basins #1 and #2)	$ 2,380,000
Disinfection system improvements	$ 1,550,000
Sampling system improvements	$ 490,000
Dewatering system improvements	$ 320,000
Sanitary pump station improvements	$ 250,000
Storm pump station improvements	$ 2,020,000
Aeration system improvements	$ 370,000
Electrical system	$ 3,700,000
SCADA system	$ 410,000
Architectural / Structural / Misc. Building Repairs	$ 2,410,000
River recirculation system (incl. electrical and SCADA)	$ 1,880,000
Post-Construction TCR/DO Monitoring	$ 140,000
Total Priority 1B Projects	***$15,920,000***

Priority 2B – 4B Projects

Priority 2B Projects (FY 2015 - FY 2019)	Capital Cost
Architectural / Structural / Misc. Building Repairs	$ 749,000
Drain Enclosure Condition Assessment and Repairs	$ 353,000
Total Priority 2B Projects	***$ 1,102,000***

Priority 3B Projects (FY 2020 - FY 2024)	Capital Cost
Architectural / Structural / Misc. Building Repairs	$ 261,000
Replace Raw Sewage Pumps	$ 1,173,000
SCADA system - Milk River RTB/CSO facility	$ 800,000
SCADA system upgrades - river recirculation system	$ 277,000
Total Priority 3B Projects	***$ 2,510,000***

Priority 4B Projects (FY 2025 - FY 2029)	Capital Cost
Replace Intake Pipe (72-inch diameter)	$ 2,960,000
Total Priority 4B Projects	***$ 2,960,000***

Q & A

A RESOLUTION ADOPTING A FINAL PROJECT PLAN FOR SUPPLEMENT NO. 2 FOR IMPROVEMENTS TO THE NORTHEAST SEWAGE DISPOSAL SYSTEM INCLUDING THE MILK RIVER SYSTEM AND DESIGNATING AN AUTHORIZED PROJECT REPRESENTATIVE

WHEREAS, the **Milk River Intercounty Drainage District** recognizes the need to regularly make improvements to its existing facilities to ensure their reliability and compliance with current and future regulatory requirements; and

WHEREAS, submittal of a Project Plan to the Michigan Department of Environmental Quality is necessary for any wastewater system improvements within the Project Plan to be eligible for funding under the Clean Water State Revolving Fund Loan program; and

WHEREAS, the Charter County of Wayne authorized the Joint Venture of Orchard, Hiltz & McCliment (of Plymouth) and Hubbell, Roth & Clark, Inc. (of Detroit) to prepare a Project Plan for Supplement No. 2 for Improvements to the Northeast Sewage Disposal System including the Milk River System to identify, evaluate and recommend the construction of necessary improvements to ensure the reliability of the facilities within each system and compliance with current and future regulatory requirements; and

WHEREAS, said Project Plan was presented at a Public Hearing held on June 12, 2012 and all public comments have been considered and addressed; and

WHEREAS, the Milk River Intercounty Drainage District Board approves submission of said Project Plan to the Michigan Department of Environmental Quality; and

WHEREAS, the projects recommended for construction during the first five years ("Priority 1B Projects") total $15,920,000.00; and

WHEREAS, application will be made to the State Revolving Fund to provide loans for the Priority 1B Projects, and said loans will be repaid by the communities in the Milk River District ; and

WHEREAS, said Project Plan must be submitted to the Michigan Department of Environmental Quality no later than July 1, 2012;

NOW THEREFORE BE IT RESOLVED, that the **Milk River Intercounty Drainage District Board** formally adopts the Project Plan for Supplement No. 2 for Improvements to the Northeast Sewage Disposal System Including the Milk River System.

BE IT FURTHER RESOLVED, that Lavonda Jackson, Wayne County Drain Commissioner, Deputy Director of the Wayne County Department of Public Services – Environmental Services Group, is designated as the authorized representative for all activities associated with construction of improvements for Supplement No. 2 Improvements to the Northeast Sewage Disposal System Including the Milk River System identified in said Project Plan, including the submittal of said Project Plan as the first step in applying to the State of Michigan for a revolving fund loan to assist in the implementation of the selected alternatives for Supplement No. 2 Improvements to the Northeast Sewage Disposal System including the Milk River System.

Yeas: Gregg, Conley, Novitke, Hughes, Schabath

Nays: none

Abstain: none

Absent: none

I certify that the above Resolution was adopted by Milk River Intercounty Drainage District Board on June 12, 2012.

BY: Lavonda Jackson , Wayne County Drain Commissioner, Deputy Director of DPS

Name and Title *(please print or type)*

Signature 6/22/12 Date