

## PLAN SUMMARY

### HARBORCREEK TOWNSHIP SEWER AUTHORITY ACT 537 SEWAGE FACILITIES PLAN

#### I. INTRODUCTION

The Act 537 Program is administered by the PA Department of Environmental Protection (PA DEP) and their approval of the Act 537 Plan is required before design, permitting, financing and construction of proposed sewage facilities can begin. The PA DEP uses the Official Sewage Planning requirements of Act 537 to prevent and eliminate pollution of the waters of the Commonwealth by coordinating planning for the sanitary disposal of sewage with a comprehensive program of water quality management.

The Harborcreek Township Sewer Authority (hereinafter referred to as HTSA) is updating the 1994 Act 537 Plan for Harborcreek Township. In January 2009 HTSA retained the firm of Herbert, Rowland, and Grubic Engineering (HRG) to complete the Plan, and HRG's work resulted in preparation of a draft report in December 2011. By letter dated May 9, 2012, DEP provided review comments on the draft report.

In March 2014 HTSA retained Hill Engineering (HEI) to complete the work initiated by HRG, and to conduct additional investigations relative to eliminating Sanitary Sewer Overflows (SSO's). HEI developed a two-part Task Activity Report (TAR), which included completion of the initial scope of work started by HRG and a supplemental scope of work focused on SSO elimination.

#### A. Initial TAR

The list of activities in the initial TAR includes:

1. Complete the remaining work items from the initial 2009 Task Activity Report.
2. Revisit the Alternatives Analysis for extending sewers to the five Study Areas, including updates to cost estimates.
3. Assist HTSA in selecting Preferred Alternatives for each of the Study Areas, including priorities and schedules for the sewer extensions.
4. Update the Environmental Clearances for each Preferred Alternative.
5. Respond to the comments in DEP's May 9, 2012 comment letter.
6. Assist HTSA in the Plan Adoption process, including planning agency reviews, public comments/hearings, etc.

**B. Supplemental**

The list of activities in the supplemental TAR includes:

1. Analyze the new flow meter data to be collected by HTSA at the Five Mile and Six Mile Pump Stations, as well as all previous data.
2. Develop a computer model to simulate the hydraulic response of the major components of the sewer system to wet weather events.
3. Analyze various alternatives to eliminate the SSO's at Five Mile Pump Station and Six Mile Pump Station.
4. Develop cost estimates for each of the practicable alternatives.
5. Assist HTSA in selecting Preferred Alternative(s).
6. Incorporate the Preferred Alternative(s) in the overall Act 537 Plan to be adopted by Harborcreek Township.

The Task Activity Report reflects only HEI effort and costs; previous consultant costs, HTSA staff time and costs, meter rental/purchase, etc. is not included. The complete TAR is contained in Appendix 1.

**II. PLANNING AREA**

**A. Initial TAR**

The initial planning area evaluated by HRG included extending sewers to the following five (5) Study Areas:

**TABLE**

<u>Study Area</u>	<u>General Vicinity</u>	<u>Identified EDU's</u>
1	Shannon Road Area	73
2	East Lake Road Corridor	352
3	Firman Road Area	31
4	Luxury/Yale/Hannon Road Areas	63
5	Village and Buffalo Road Areas	<u>201</u>
Total =		720

The boundaries of each of the five Study Areas are shown on the map in Section II, Exhibit II-1.

**B. Supplemental TAR**

The supplemental planning area involved analysis of the entire sewer system, with emphasis on the two locations that experience SSO events: Five Mile Pump Station and Six Mile Pump Station. The primary areas of focus included:

1. Five Mile Pump Station
2. Six Mile Pump Station
3. South Shore Pump Station
4. Iroquois Avenue (proposed gravity diversion)

**III. SELECTED ALTERNATIVES**

HTSA and Harborcreek Township have determined that the Plan will include projects to eliminate SSO's, and to extend sewers to selected areas of the Township. Drawings showing that proposed work are located in Appendix 10.

**A. SSO Elimination**

The selected SSO elimination strategy includes the following elements:

Phase 1

1. Construction of gravity sewer from Nagle Road along Iroquois Avenue and East Lake Road to the City of Erie connection at Franklin Avenue. This sewer will convey all HTSA flows south of Route 20 up to 5 MGD to the City by gravity. Flows in excess of this will continue to flow down Nagle Road to the Five Mile Pump Station. In addition to reducing the load on the Five Mile Pump Station by about 50%, the Iroquois Avenue Sewer will also provide the potential for connection of sewage generated within Lawrence Park Township, and corresponding reduction of load on Lawrence Park's Sudan's Pump Station.

HTSA will re-capture the combined 1.4 MGD of capacity it currently leases to the Borough of Wesleyville and Lawrence Park Township, and will utilize its full 12.6 MGD capacity allocation to the City of Erie.

2. Upgrades to Six Mile Pump Station, including construction of a new station and 0.75 Million Gallons of Equalization (EQ) Storage capacity.

## Phase 2

3. Possible upgrades to Five Mile Station including 0.5 Million Gallons of EQ Storage at either Five Mile or South Shore to prevent exceedance of the maximum allowable discharge to the City of Erie at Franklin Avenue. HTSA will evaluate the need for this additional EQ storage after completion of the Iroquois Avenue gravity diversion and collection/analysis of additional data.

## Ongoing

4. Continuation of effort to eliminate the extraneous Inflow and Infiltration (I/I) from the system. In doing this, HTSA hopes to either eliminate or reduce the size of the necessary EQ basins currently planned for Five Mile Pump Station and/or Six Mile Pump Station.

## **B. Sewer Extensions**

Upon completion of the SSO Elimination project, HTSA will initiate extension of sewers to selected subsections within the 5 Study Areas. The subsections are as follows:

1. Knipper, Louise and east end of Frazier (Subsection of Study Area 4).
2. Kraus Drive (Subsection of Study Area 2).
3. Luxury Drive (Subsection of Study Area 4).
4. East Lake Road from Kraus Drive to Bartlett Road including Old Shades Beach (Subsection of Study Area 2).
5. The Village of Harborcreek (Subsection of Study Area 5).

Sewers will be extended to the remaining portions of the 5 Study Areas as availability of funding and development pressure warrant.

## **IV. COST ESTIMATES**

Construction cost estimates were developed for both the SSO Elimination Strategy and the 5 subsections of the sewer extensions. The estimates include allowances for contingency and engineering, legal and administrative costs.

**A. SSO Implementation Selected Alternative 2C**

Iroquois Ave. Diversion & E. Lake Rd. Sewer	\$5,200,900
Six Mile PS Replacement & EQ Tank	\$2,219,700
Five Mile PS & EQ*	<u>\$1,007,400</u>
TOTAL	\$8,428,000

\*EQ tank to be constructed if required after completion of Phase 1 and review of data.

**B. Sewer Extensions**

<u>Subsection Area</u>	<u>Study Area</u>	<u>General Vicinity</u>	<u>Cost</u>
1	4	Knipper, Louise, and east end of Frazier	\$190,500
2	2	Kraus Drive	\$576,800
3	4	Luxury Drive	\$193,800
4	2	East Lake Road from Kraus Drive to Bartlett Road including Old Shades Beach	\$556,300
5	5	The Village of Harborcreek*	\$2,025,200
		*This will require additional system improvements to the Wal-Mart Pump Station, force main and the Buffalo Road gravity sewer main from Clark Road to Walbridge Road.	\$1,524,900
		Total Project Cost (1 through 5)	\$5,067,500

**V. MUNICIPAL COMMITMENT**

The Harborcreek Township Board of Supervisors has endorsed the Plan presented herein, and will formally adopt the Act 537 Plan after the public comment period.

HTSA will implement the Plan, including financing, design, permitting and construction.

The contemplated financing plan involves borrowing \$10 million in bonds, which will be used to fund the SSO Elimination Project, as well as repay existing debt services. The rate impacts associated with this borrowing are shown in the table below.

**VI. SCHEDULE OF IMPLEMENTATION**

The schedule for implementation of the SSO Elimination Strategy and the Sewer Extension Areas is indicated below. The SSO Elimination Implementation will be completed first, followed by the 5 sewer extensions. The current plan is to construct one sewer extension each year following completion of the SSO Elimination Project. Following the completion of the fifth sewer extension, the remaining 16 subsections will be re-evaluated for need, priority and cost-effectiveness.

In anticipation of the borrowing for the SSO Elimination Project, HTSA plans to increase residential user rates by \$5 per quarter for the next 4 years starting in 2015. The first \$5 increase was put in place in January 2015, resulting in a quarterly user rate of \$101. The revenue generated from these increases will initially be used to fund I/I removal projects and engineering for the SSO Elimination Project. Once the project is financed the revenue will be used for debt repayment. It is anticipated that the sewer extension projects will be “self-funded” through Tapping Fees and additional user fees.

<u>Task</u>	<u>Anticipated Completion Date</u>	<u>Quarterly Residential Rate (\$/Qtr./EDU)</u>
HTSA 2014 Initial Rate	---	\$96
First Rate Increase	2015	\$101
Submit Final Act 537 to PA DEP	July 2015	\$101
Continue I/I Reduction Project	2015-2017	\$101-\$111
Design and Permit Work	2016-2017	\$106-\$111
SSO Implementation Construction Begin	2018	\$116
SSO Implementation Construction End	2020	\$116
Sewer Extension Subsection 1	2021-2022	\$116*
Sewer Extension Subsection 2	2022-2023	\$116*
Sewer Extension Subsection 3	2023-2024	\$116*
Sewer Extension Subsection 4	2024-2025	\$116*
Sewer Extension Subsection 5	2025-2026	\$116*

\* The sewer extension projects are anticipated to be self-funding. System improvements benefiting customers outside the extension areas may require user rate increases.