CHELTENHAM TOWNSHIP

SANITARY SEWER UPDATE

Public Works Committee Meeting

September 7, 2010

Curtis Hall

SANITARY SEWER UPDATE

1. Overview

    a. The Problem
    b. Pennsylvania Department of Environmental Protection (“DEP”)
    c. Goals and Objectives

2. Timeline of Improvements (1997-2010)

3. Planned Improvements (2011-2019)

4. Financing Options

5. Water Conservation

    a. Environmental Advisory Council ("EAC")
    b. 'WaterSense' – U.S. Environmental Protection Agency ("EPA")

1. OVERVIEW

a. The problem. The Township's 85-year old sanitary sewer system periodically experiences sanitary sewer overflows (SSOs) during heavy rain events and high groundwater conditions. Portions of the system are susceptible to water infiltration and inflow (I and I). About 8-10 properties are periodically affected. The sanitary sewer system, which is separate from the stormwater system, is 106 miles in length.

Infiltration is groundwater that enters the sanitary sewer system through leaks in the sewer pipes or manholes. These underground leaks occur at pipe joints, cracks or breaks in the pipes or manholes and laterals that have resulted from deterioration, root intrusion, poor installation, etc.

Inflow is stormwater that enters the sanitary sewer system via direct connections to the sewer pipes or manholes. Sources of inflow include house foundation drains, roof drains, outdoor driveway drains, connections from basement sump pumps, and storm sewer cross connections.

b. DEP. In 1997, DEP issued a moratorium on new sanitary sewer connections for a portion of the Township west of Easton Road due to periodic SSOs.

In 2006, the entire Township and contributing communities were placed on a moratorium for new sewer connections.

In 2006, the Township entered into a Consent Order and Agreement with DEP. The agreement set forth goals, objectives and milestones via a series of Corrective Action Plans (CAPs).

DEP has granted new sewer connections on a case-by-case basis as a result of improvements to the system. Approximately 600 connections have been granted since 1997.

c. Goals and Objectives.

i. To reduce and eliminate as much as possible sewer surcharging, SSOs, infiltration and inflow.

ii. Create sufficient capacity within the sanitary sewer system for future residential and non-residential connections (Equivalent Dwelling Units – (EDUs).

iii. To make improvements as efficient and cost- effective as possible.

2. TIMELINE IMPROVEMENTS (1997-2010)

The Township undertook the following steps to improve the system:

1998 A Professional Engineering Services contract was awarded to study the moratorium area to determine remedies. $26,000

1999 Evaluation of 1998 study and contract for repair work developed.

2000/ 2001	Cleaning, Televising and Sealing of 87,000 linear ft. of pipe. Phase I.	$214,873
2001/ 2002	Cleaning, Televising and Sealing of 20,000 linear ft. of pipe. Phase II.	$52,953

2002 A Professional Engineering Services Contract was awarded for developing a construction bid document for repairs of problems found during Phases I and II.

$28,000

2003	Repair of major problems from Phases I and II.	$265,953
2004	Follow up monitoring of flows by Engineering Consultant after repairs.	$26,000

2005/ 2006	Cleaning, Televising and Sealing of 139,000 linear ft. of pipe. Phase III.	$687,964
2005	Hired Township inspector to inspect homes and businesses for illegal sump pump hookups to sanitary sewers. Since then, 198 illegal connections have been found and corrected.	$45,000

2005 Corrective Action Plan developed for Township-wide analysis and system remediation to eliminate SSOs.

2005 Replaced section of sewer leaking near Kleinheinz Pond. $28,750

2007 Engineering firm hired to study all aspects spelled out in Consent Order and Agreement. Analyze flow monitoring, prepare hydraulic analysis of sewer lines, evaluate feasibility of pump stations, determine priority areas and rehabilitation alternatives. $297,400

2007 Remove Waverly Road Leaf Site direct stormwater connection to Sanitary Sewer System, which eliminated 5 acres of rainfall run-off draining into sewer. $928,168

2007	Cleaning, Televising and Sealing of 136,300 linear ft. of pipe. Phase IV.	$943,380
2007	2 full-time employees added to Sewer Department to increase rate of ongoing maintenance.	$80,000

2008 Engineering firm contract expanded to include additional services including flow monitoring/analyses, investigate main sewer line rehabilitation and develop bid documents for repairs found during Phases III and IV.

$321,900

2008	Engineering firm contract to design plans for main sewer line relocation to eliminate restrictive flow angle at SEPTA bridge.	$27,900
2008/ 2009	Cleaning, Televising an Sealing of 190,000 linear ft. of pipe. Phase V.	$1,048,100

2009 Replace Interceptor at SEPTA Bridge for restrictive flow angle. $973,000

2009 Engineering firm contract expanded to include additional services including flow monitoring/analyses, manhole rehabilitation and develop bid document for repairs found during Phase V. $183,500

2009	Engineering firm given contract to design plans for main sewer interceptor relocation to eliminate sag condition by Jenkintown Road.	$30,800

2010 New updated Sanitary Sewer Agreement with the Philadelphia Water Department allows Township to exceed agreed upon flow limits during heavy rain and high groundwater events.

2010 Construct interim bypass pumping system. 16,000-feet of 24-inch diameter, high density plastic pipe. Three "super quiet" portable pumps along the banks of the Tookany Creek between Wall Park and Tookany Parkway near Laurel Avenue will double sewer capacity during heavy rain/high water conditions.

$1,292,040

2010 Development of DEP-approved Act 537 Sewage Facilities Plan. Will take two (2) years to complete. Regional approach to rehabilitation of the Township system as well as systems owned by contributing municipalities – Abington Township, Jenkintown Borough, Springfield Township and the City of Philadelphia. (50% reimbursement anticipated from DEP).

$325,350

2010	Initiate groundwater monitoring study to determine groundwater elevations Township-wide. Will identify portions of the system that are below groundwater levels and thus more susceptible to infiltration. This will help pinpoint areas where replacement of sewer house laterals are necessary. Will take 12-months to complete.	$36,313
	Total Cost:	$7,863,344
	Less anticipated Grants and DEP Reimbursement:	($1,691,875)
	Net Cost:	$6,171,469

(***Special Note***: Between 2007 and 2008, average flows decreased by over half a million gallons per day, which is equivalent to slightly more than 2,000 EDU's.)

3. PLANNED IMPROVEMENTS

a. New Inter-municipal Agreements (2010-2012).

Abington, Jenkintown and Springfield. Update new cost-sharing formulas.

b. Sewer System Rehabilitation – Phase I – 8.1 miles (2010-2013).

- Lining of main sewer line between Church Road at Chelten Hills Drive and Rices Mill Road at Glenside Avenue.
- Lining of other sewer lines in the Elkins Park area.
- Repair of major problems from Phases III, IV and V.
- Eliminate 66-feet of sagging main sewer line at Tookany Creek near Jenkintown Road (in 2014 if replacement of main sewer line is not needed).
- Eliminate six (6) sharp bends that can restrict flow (in 2014 if replacement of main sewer line is not needed).

c. Flow Monitoring (2010-2018).

d. Sump Pump Inspections (continued) (2010-2013).

- To date, almost 7,000 properties have been inspected (69%).
- 198 illegal connections have been found (12.5% of all properties with sump pumps).

e. Inspection of Sewer Lines in or near creek system (2010-2011).

f. Lateral Rehabilitation – approximately 1,700 laterals (2011-2019).

Inspection, repair and/or replacement of house laterals most susceptible to groundwater and I and I.

g. Roof Drain Inspections and Disconnections (2011- 2019).

h. Manhole Inspections (2011) and Rehabilitation (2012-2015).

i. Adopt a “FOG” Ordinance (2011).

Require property owners to minimize or eliminate “Fats, Oils and Grease” from getting into laterals and clogging sewer lines.

j. Tookany/Tacony Frankford Partnership (TTFP) (ongoing).

Annual contribution to TTFP, a non-profit organization, that works with government residents and businesses. Serves as stewards to the urban stream watershed.

k. Water Conservation (ongoing).

The Township has become a member of the Environmental Protection Agency's 'WaterSense' Program, a clearing house for water conservation tips and measures.

Special Note*:** Cost estimate for items (a) through (j) is between $12 and $15 million dollars. Cost estimate for replacement of main sewer line is between $50 and $70 million dollars. These cost estimates are ***not net off future grants and shared costs from other municipalities.

4. FINANCING

a. Shared costs from other municipalities.

b. State and Federal Grants.

   i. $503,805 to replace interceptor at SEPTA bridge for restrictive flow angle.

   ii. $542,050 (PENDING) for Phase V Cleaning, Televising and Sealing Project.

   iii. $646,020 (PENDING) for interim bypass pumping system.

c. Bond Issues – Capital Borrowing.

d. Low Interest Loans

i. Pennsylvania Infrastructure Investment Authority (PENNVEST).

II. Pennsylvania Commonwealth Financing Authority (CFA)-H2O Program.

e. Sewer Rental Rates.

5. WATER CONSERVATION

a. Environmental Advisory Council (EAC)

b. 'WaterSense' – U.S. Environmental Protection Agency

- "Simple Steps to Save Water".
- "Flush Fact vs. Flush Fiction...The Truth about High-Efficiency Toilets".
- "Watering can be Efficient---Fine Tune Your Irrigation System to Save Water and Money".
- "Indoor and Outdoor Water Use in the U.S.".

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