

**Somerdale Sewer System
Renewal Program
Presentation
February 10, 2014**

SANITARY SEWER SYSTEM MAP

- SYSTEM SERVICES 1,683 RESIDENTIAL AND 285 COMMERCIAL PROPERTIES
- APPROXIMATELY 15 MILES OF SANITARY MAIN (CONSISTING OF APPROXIMATE 85% TCP AND 15% PVC)
- TOTAL OF 5 MUNICIPAL PUMP STATIONS AND 1 C.C.M.U.A. METERING STATION
- BOROUGH WAS DEVELOPED BETWEEN THE 1930'S TO 1960'S
- APPROXIMATE AGE OF SANITARY SEWER SYSTEM IS 50 TO 80 YEARS OLD
- EXPECTED SERVICE LIFE OF SANITARY SEWER SYSTEM IS 50 YEARS



LEGEND

- ■ ■ BOROUGH BOUNDARY
- PUMP STATION

REV.	DATE	DESCRIPTION	DRAWN	CHECK
Sanitary Sewer System Map				
Borough of Somersdale Camden County, New Jersey				
DATE: 1/25/23	DRAWN BY: GE		SCALE: 1" = 100'	
DATE: 8/2	PROJECT NO: 2-223 - FIELD BOOK/PAGE 1		SHEET NO. 1 OF 1	
GREGORY BLASE FUSCO PROFESSIONAL ENGINEER				
NPE No. 32823 PA/PE No. 036608-E NJ PROFESSIONAL PLANNER No. 4076				

MODUTEC
Engineers & Constructors, Inc.

80 S. White Horse Pike
Berlin, New Jersey 08009

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- **How the system was designed**
 - **Terra cotta pipe segments 2 feet long. Joints made with Jute Rope**
 - **Cast iron force main**
 - **Brick manholes**

- **What age has done to the system**
 - **Jute Rope disintegrated**
 - **Tree root intrusion**
 - **Cracked and settled piping**
 - **Manholes are deteriorating**
 - **Grease build-up**

Result

Very bad blockages due to:

- **Severe grease build-up**
- **Very bad tree root intrusion**
- **Severe groundwater infiltration in pipe joints and manholes**

- **Photos of deteriorated mains**



- **Photos of manholes**



Example of Terra Cotta Pipe in Good Condition



Vassar Ave Dead End to 25 Browning
5/25/10]

12:33 25.05.10 PC: 0

LC1: 002.90 ft

Vassar Ave Dead End to Browning
5/25/10

12:34 25.05.10 PC: 0

LC1: 000.00 ft

Vassar Ave Dead End to S. Browning
5/25/10

12.37 25.05 100 IPC: 10

LC1: 004.20 ft

Vassar Ave Dead End to S. Browning

6/28/10

1

13:16 25.05.10 PC: 0

LC1: 000.00 ft

Manhole available to Sunbelt
12/19/08 3rd attempt with small life

12:00 19.12.08 PC: 0

LC1: 006.80 ft



Manhole at 802 Mildred to Sunset
12/13/08 3rd attempt with small tires|

12:01 12.08 PC: 0

LC1: 008.20 ft

1107 Sunset to Beverly|

08:52 06.10.09 PC: 0

LC1: 111.20 ft

1:00 | Sunset to Overlym |

08:56 06.10.09 PC: 0

LC1: 110.80 ft

1107 Sunset to Beverly|



12:07 06.10.09 PC: 0

LC1: 156.80 ft

How Does It Affect Me?

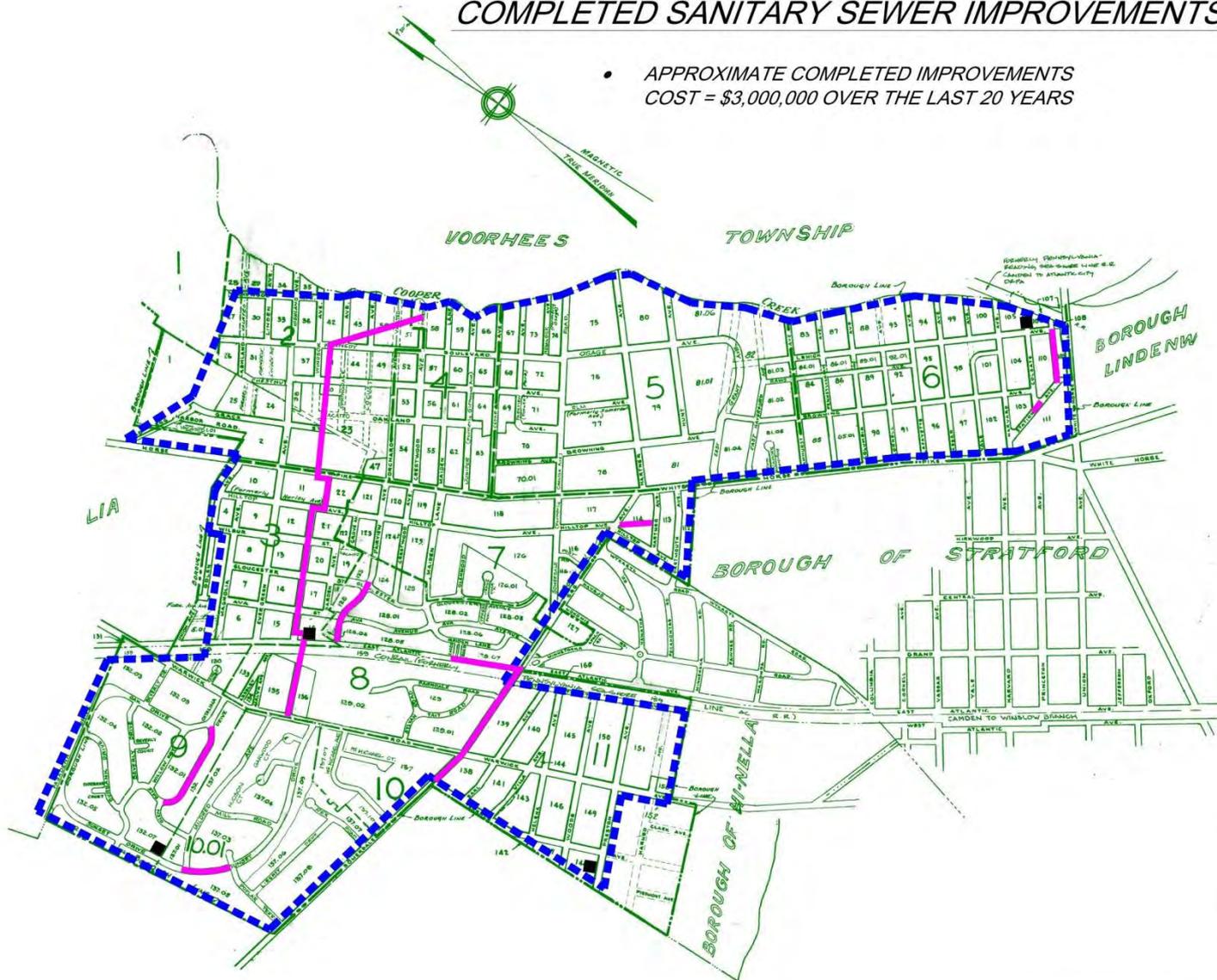
- Sanitary effluent can back up into homes and basements.
- Continual ground water infiltration and illegal sump pump connections cause pump stations to run constantly. This results in higher energy costs to operate the system.
- During times of inclement weather, rain water and ground water enter the system causing long sections of the system to be over burdened and effluent spills into the street.
- The system is well beyond its expected useful service life. Sewer main blockages that must be repaired in an emergency cost 2 to 3 times as much as scheduled or planned repairs.

We Have Been Getting By All This Time, What Are We Worrying About?

- The cost of labor and materials are skyrocketing.
- Rain water and ground water intrusion is so high that the system can no longer handle the flow.
- The additional clear water flow is effecting the operations at the Camden County Municipal Utilities Authority plant in Camden.
- The NJDEP has informed the Borough that if they do not start correcting the situation soon, fines will be assessed. The fines could be in the range of \$10,000 per day.

COMPLETED SANITARY SEWER IMPROVEMENTS

- APPROXIMATE COMPLETED IMPROVEMENTS COST = \$3,000,000 OVER THE LAST 20 YEARS



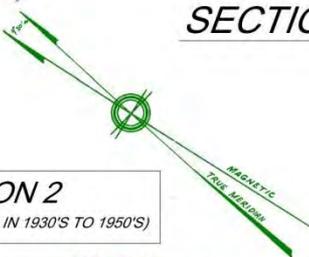
LEGEND

- BOROUGH BOUNDARY
- PUMP STATION REPAIRED OR REPLACED
- SEWER MAIN REPAIRED

REV.	DATE	DESCRIPTION	PREP.	CHECK.
Completed Sanitary Sewer Improvements				
Borough of Somerdale Camden County, New Jersey				
DATE: 12/25/73	DESIGNER: G.F.	SCALE: 1" = 100'		
DRAWN BY: G.F.	PROJECT NO. 7-2-73	TITLE BOOK/PAGE: 1	SHEET NO. 1 OF 1	
GREGORY BLASE FUSCO PROFESSIONAL ENGINEER				
N.J.P.E. No. 32823		P.A.P.E. No. 036608-E		
		N.J. PROFESSIONAL PLANNER No. 4076		
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SECTION & TELEVISION PLAN



SECTION 2
(DEVELOPED IN 1930'S TO 1950'S)

SECTION 1
(DEVELOPED IN 1950'S TO 1960'S)

SECTION 3
(DEVELOPED IN 1930'S TO 1950'S)

SECTION 4
(DEVELOPED IN 1950'S TO 1960'S)



■ ■ ■ SECTION LIMIT
 ——— PIPE TELEVISED AND INSPECTED
 DENOTES TELEVISED SYSTEM (TYP.)

- LEGEND**
- ■ ■ SECTION LIMIT
 - PIPE TELEVISED AND INSPECTED

REV.	DATE	DESCRIPTION	T.O.	C.E.
1/22/11		UPDATED TO 1/22/11		
		Section & Television Plan		
		Borough of Somerdale Camden County, New Jersey		
DATE: 8/10/09		DRAWN BY: G.E.		SCALE: 1" = 100'
DWG. NO.:		PROJECT NO. 2-021 - FIELD BOOK/PAGE # 1 SHEET NO. 1 OF 1		
		GREGORY BLASE FUSCO PROFESSIONAL ENGINEER		
		NUPE No. 32823		PA/PE No. 036608-E
				NJ PROFESSIONAL PLANNER No. 4076
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		0287-0000-0000-0000-0000-0000		

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Funding Sources

- Municipal Bonding
 - Borrow the Money for 20 years at 5% interest
- New Jersey Environmental Infrastructure Trust
 - 20 year Loan
 - 1/2 of the loan is at market rate
 - 1/2 of the loan is at 0%
 - Result is a 20 year loan at about 2%
- United States Department of Agriculture
 - 40 year loan at 2.75%
 - Possible Grant Money Available

USDA Funding Application

- The Borough made application to the USDA for a total of \$4,663,000.00 to address the most severe sewer related infrastructure renovations and improvements.
- The USDA awarded the Borough of Somerdale a Loan in the amount of \$3,411,000 for 40 years at 2.75% interest.
- The USDA also awarded the Borough (3) Grants totaling \$1,189,300 which provides a total of \$4,600,300 in loan/grant funding.

The Plan

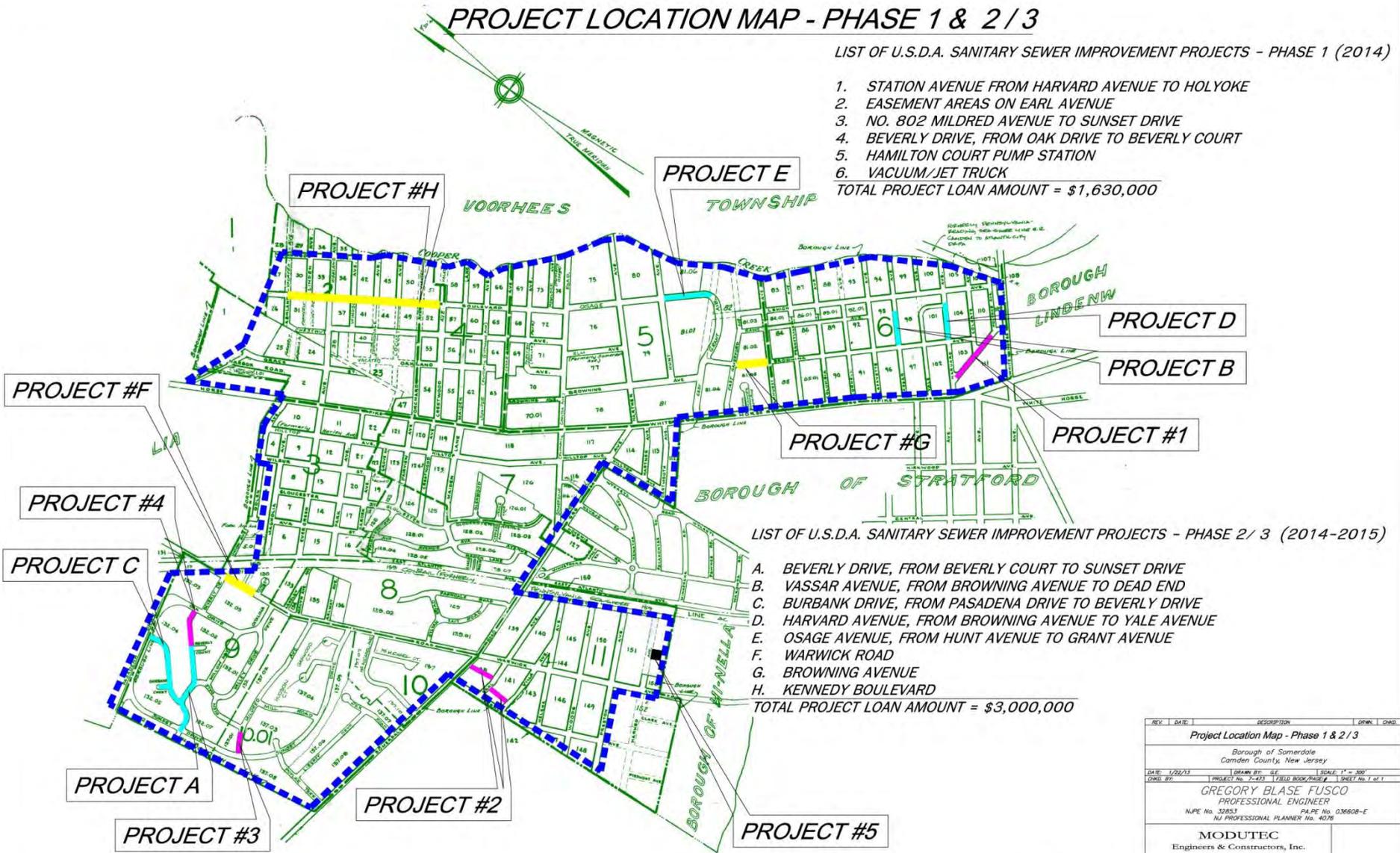
- Approximately 1/2 of the system has been televised
- A priority list has been developed
- The USDA funding will address phases 1 to 3 which have been estimated at \$4.6 Million (Immediate Priorities)
- When we complete the televising of the entire town, we will be able to accurately determine the balance of the sewer repair & replacement costs.
- We plan to apply for additional USDA funding in 2015/2016 for continued phased work (If awarded, construction on Phase 4 could begin as soon as 2017)

PROJECT LOCATION MAP - PHASE 1 & 2/3

LIST OF U.S.D.A. SANITARY SEWER IMPROVEMENT PROJECTS - PHASE 1 (2014)

1. STATION AVENUE FROM HARVARD AVENUE TO HOLYOKE
2. EASEMENT AREAS ON EARL AVENUE
3. NO. 802 MILDRED AVENUE TO SUNSET DRIVE
4. BEVERLY DRIVE, FROM OAK DRIVE TO BEVERLY COURT
5. HAMILTON COURT PUMP STATION
6. VACUUM/JET TRUCK

TOTAL PROJECT LOAN AMOUNT = \$1,630,000



LIST OF U.S.D.A. SANITARY SEWER IMPROVEMENT PROJECTS - PHASE 2/3 (2014-2015)

- A. BEVERLY DRIVE, FROM BEVERLY COURT TO SUNSET DRIVE
- B. VASSAR AVENUE, FROM BROWNING AVENUE TO DEAD END
- C. BURBANK DRIVE, FROM PASADENA DRIVE TO BEVERLY DRIVE
- D. HARVARD AVENUE, FROM BROWNING AVENUE TO YALE AVENUE
- E. OSAGE AVENUE, FROM HUNT AVENUE TO GRANT AVENUE
- F. WARWICK ROAD
- G. BROWNING AVENUE
- H. KENNEDY BOULEVARD

TOTAL PROJECT LOAN AMOUNT = \$3,000,000

REV	DATE	DESCRIPTION	BY	CHKD
Project Location Map - Phase 1 & 2/3				
Borough of Somerdale Camden County, New Jersey				
DATE: 1/22/13	PROJECT NO: 2-013	TITLE BOOK: PHASE 1 & 2/3	SCALE: 1" = 300'	
GREGORY BLASE FUSCO PROFESSIONAL ENGINEER				
NAPE No. 32853		PA-PE No. 036608-E		
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				DATE

Construction Schedule

Street	2014												2015											
Month:	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Phase 1																								
1. Station Avenue						X	X																	
2. Earl Ave. Easements								X																
3. Mildred Avenue									X															
4. Beverly Drive										X														
5. Hamilton Ct Pump								X	X	X														
Phase 2																								
6. Beverly Drive Sec. 2													X											
7. Vassar Avenue														X										
8. Burbank Drive															X									
9. Harvard Avenue																X								
10. Osage Avenue																	X							
11. Warwick Road																		X						
12. Browning Avenue																			X					
13. Kennedy Blvd.																				X	X			

Construction Plan (Long Range)

- Phases 1-3 (Approx. 1.75 miles of pipe)
 - (12) Streets/Sewer Segments
- Phase 4 (Pipe Slip Lining)
 - Approx. 1 mile of pipe (Street Locations TBD)
- Phase 5 (Pipe Slip Lining)
 - Approx. 1 mile of pipe (Street Locations TBD)
- Phase 6 (Pipe Slip Lining)
 - Approx. 1 mile of pipe (Street Locations TBD)

Debt Planning

- Phases 1-3 Borrowing \$3,411,000 (40 yrs @ 2.75%)
 - Encumber 2014 with debt payments starting in 2015
- Phase 4 estimated \$1,250,000 (40 yrs @ 4%)
 - Projected debt payments starting in 2017
- Phase 5 estimated \$1,250,000 (40 yrs @ 4%)
 - Projected debt payments starting in 2023

Debt Planning

- Phase 6 estimated \$1,250,000 (40 yrs @ 4%)
 - Projected debt payments starting in 2032
- Total Planned Sewer Refurbishing Investment
 - \$8.35M Dollars over an 18 Year period
- Replace/Refurbish approximately 5 miles (33%) of system piping
- From 1996 through 2032 this program will address a total of 8 miles (over 50%) of our sewer system

Sewer User Fee Impact

- 2014 – Increase Residential Fees to \$155 annually and provide a new “quarterly” Payment plan (hold qualifying senior rates to \$90/yr.)
- 2016 – Increase Residential fees by \$5 per year through 2020 & Commercial fees 3% per annum (hold qualifying senior rates to \$90/yr.)
- 2021 – Increase Residential fees by \$6 per year through 2025 & Commercial fees 3% per annum (hold qualifying senior rates to \$90/yr.)
- 2026 – Increase Residential fees by \$7 per year through 2035 & Commercial fees 3% per annum (hold qualifying senior rates to \$90/yr.)
- 2036 – Increase Residential fees by \$4 per year through 2040 & Commercial fees 3% per annum (hold qualifying senior rates to \$90/yr.)
- 2041 through 2055 - No Residential fee increases needed for projected debt. Continue Commercial fee increases at 3% per annum through 2055

Budgetary Summary

- Residential fees will escalate gradually over a 26 year period and flatten for the next 15 years (assuming no additional debt beyond these projections are needed)
- Commercial fees will escalate at a steady but nominal rate of 3% per year
- This planned fee schedule will enable the borough to complete the necessary sewer line refurbishing or replacing program which will have a minimum useful life of approximately 50 years and address over 50% of the entire system piping
- Sufficient surplus will be maintained to guard against unexpected emergency repairs
- Residential fees will cap at \$300/yr. in 2040 (26 years from now)
- \$300 in 2040 is equivalent to \$108 today (assuming a 4% average inflation rate over the next 26 years)
- Today's fee of \$155 equates to \$744 in year 2055 dollars (nearly 2.5 x more then the planned rate for that year)

What Can The Public Do?

- Disconnect your basement or crawl space sump pump from the sanitary sewer piping in your home.
- Remove trees on your property and at the curb line if you know they are near your sewer lateral or clean out.

Existing Ordinances

- **The Borough Zoning Code, Article 1, Section § 212-18 defines the responsibility of owner and Borough for sanitary sewer lateral/main**
 - A. All fixtures with outlets emptying into the main sewer hereafter installed in cellars or basements of any or all buildings within the limits of the Borough of Somerdale are done so solely at the risk of the owner. Any fixtures are required to have a back flow prevention device installed between the fixture and the sewer connection line.
 - B. The Borough of Somerdale will not be responsible for any damage or inconvenience sustained by any property owner owing to the backing of sewage into cellars or basements of any or all buildings where fixtures have been installed preceding the adoption of this Article.
 - C. Maintenance of the house drain to the main sewer shall be the responsibility of the property owner.
 - D. The Borough shall maintain the main sewer, manholes and pumping stations.

Existing Ordinances

- **The Borough Zoning Code, Article 1, Section § 212-1 prohibits the use of the sanitary sewer system for the disposal of discharge from the following shall be removed forthwith:**
 - A. Sump Pumps
 - B. Cellar Drains
 - C. Leaders
 - D. Downspouts
 - E. Developer's Cellar Pits
 - F. Foundation Underdrains
 - G. Floor Drains
 - H. Area or Yard Drains
 - I. Industrial or Manufacturing Equipment Drains
 - J. Conductors
 - K. Air-Conditioning Equipment
 - L. Stormwater Inlets
 - M. Catch Basins
 - N. Stormwater Conduits or Drains
 - O. Garbage and Disposals

Questions?