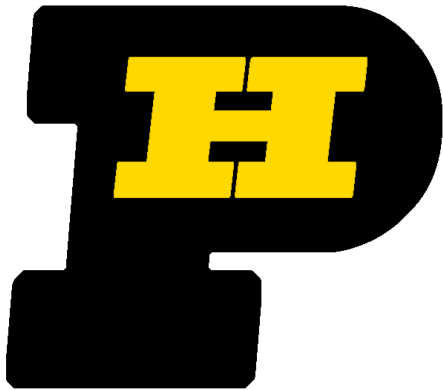


# PENN HILLS PUBLIC SEWER WORKSHOP

Presented by:  
Penn Hills Mayor & Council,  
The Penn Hills Water Pollution Control Department,  
The Gateway Engineers, Inc.

JULY 8, 2019



**GATEWAY**<sup>®</sup>

On Call. On Time. On Target.

# Agenda

- WPCD Facilities
- WPCD Responsibilities
- O&M Summary to Date
- Past Budgets
- Outstanding & Ongoing O&M Work
- Upcoming Issues
- WPCD Debt Summary
- Rate Breakdown
- Q&A Session

- Two (2) ***Wastewater Treatment Plants*** to treat sewage and discharge clean water to streams:
  - **Plum Creek Wastewater Treatment Plant (3.9 MGD Design)**
    - Treated an average of 3.84 MGD in 2018
      - 2.34 MGD (61%) was from Penn Hills Residents
      - 1.50 MGD (39%) was from Plum Borough Residents
  - **Lincoln Road Wastewater Treatment Plant (0.24 MGD Design)**
    - Treated an average of 0.124 MGD in 2018

# WPCD Facilities

- Twelve (12) **Pump Stations** that pump sewage to the Penn Hills Wastewater Treatment Plants or to the ALCOSAN System:

1. Long Road
2. Rodi Road
3. Tyler Road
4. Jade Drive
5. Lougeay Road
6. Plum Street
7. Lincoln Road
8. Paxico Street
9. Quigley Run
10. Meadow Avenue
11. Jefferson Road
12. Jodi Lane (PC EQ)

- Seven (7) **Equalization Facilities (EQ)** to store sewage during high flow events caused by rain/snow:

1. Sandy Creek EQ
2. Long Road EQ
3. Gascola EQ
4. Plum Creek EQ
5. Jefferson EQ
6. Rodi Road EQ
7. Lincoln EQ

- **The above WWTPs, EQs and Pump Stations contain:**

- 30 Buildings – with windows, doors, roofs, heating, ventilation, roads, fencing, etc. that must be maintained
- 65 Storage or Treatment Tanks - most are old, concrete and spalling
- 59 Major Pumps – many operate continuously
- 13 Emergency Power Generators

- Penn Hills **Sanitary Sewers** Pipelines
  - 245 miles of 8 inch to 48 inch sewers mostly made of vitrified clay pipe from 3 feet to 40 feet deep.
  - Clay pipe is said to last 50 – 60 years. The majority of Penn Hills sewers were installed in 1950 & 1960's.
  - 7,172 manholes, many made of brick and in need of repair
- Sewage **Flow** in 2018 from Penn Hills averaged 9.41 million gallons per day (MGD):
  - 6.95 MGD (74%) went into the ALCOSAN system
  - 2.46 MGD (26%) was treated in the Penn Hills Plum Creek or Lincoln Road WWTP.
- There are approximately 17,500 sewage customers in Penn Hills:
  - 14,100 are serviced by the Penn Hills collection system & treated by ALCOSAN
  - 3,400 are serviced and treated by Penn Hills

# WPCD Responsibilities

## Plum Creek WWTP Operations

- Adjust and monitor wastewater processes
- Perform process control lab tests
- Waste & pump sludge & measures blankets
- Take readings and measurements
- Maintain facilities buildings
- Performs minor equipment PM
- Operates dewatering centrifuge
- Maintains plant operational records
- Inspects and adjusts UV Disinfection system
- Remove grit & screenings to disposal unit

## Operation & Maintenance Operators

- Fills PC & Monitor Operator shifts during vacation/sick
- Works weekend Monitor 7AM – 3PM
- Operate the Lincoln Road WWTP
- Performs maintenance and repairs at the WWTP and EQ's
- Complete special projects and equipment installation
- Assist the Line Maintenance Crew
- Clean treatment system tanks

## Monitor Operators

- Inspect each EQ and WWTP every shift
- Operate & adjust EQs during events
- Read meters, gauges and dials
- Complete shift reports
- Receive Resident backup complaints
- Call out emergency crew to respond to sanitary sewer backups
- Respond to security system alarms
- Notify ACHD about after hour issues
- Assist the Line Crew on backups

## Line Maintenance

- Respond to Residential complaints (230/yr)
- Mark PA One Call notices (1,815/yr)
- Perform PM flushing of sewers
- Walk and inspect remote sewers
- CCTV problem sewers
- Meet with Plumbers/Residents
- Raise or adjust manholes
- Salt and plow WPCD facilities
- Haul sludge from Lincoln WWTP to PC for processing
- Inspect and record manhole condition
- Inspect sewer taps

# Operations & Maintenance (O&M) Summary to Date: Sewer Repairs and CCTV Summary 2010 – 2018

YEAR	EXCAVATION		LINING		PIPE BURST	
	Number	LF	Number	LF	Number	LF
2018	24	108	45	9952	0	0
2017	39	602	167	10,531	0	0
2016	76	819	80	13,843		
2015	178	1,570	0	0	1	222
2014	94	0	261	10,881		
2013	97	808	181	10,860	1	202
2012	80	673	243	9,044	3	370
2011	109	876	170	6,977		
2010	62	995	115	3,523	1	145
<b>TOTAL</b>	<b>759</b>	<b>6,451</b>	<b>1,262</b>	<b>75,611</b>	<b>6</b>	<b>939</b>

**REPAIRS:**

**83,001  
Linear Feet**

**15.72 Miles**

YEAR	MH's Installed	MH's Raised
	Number	Number
2018	3	14
2017	7	11
2016	11	3
2015	12	28
2014	18	41
2013	9	35
2012	4	52
2011		
2010		
<b>TOTAL</b>	<b>64</b>	<b>184</b>

**MANHOLES:**

**64 Installed**

**184 Raised**

YEAR	CCTV
	LF
2018	159,828
2017	105,553
2016	26,313
2015	148,000
2014	180,500
2013	194,582
2012	143,364
2011	197,287
2010	184,108
<b>TOTAL</b>	<b>1,339,535</b>

**CCTV:**

**1,339,535  
Linear Feet**

**253.7 Miles**

## Past Budgets

YEAR	ADOPTED BUDGET
<b>2010</b>	\$11,238,868
<b>2011</b>	\$12,479,224
<b>2012</b>	\$13,310,026
<b>2013</b>	\$13,545,469
<b>2014</b>	\$13,940,282
<b>2015</b>	\$14,634,146
<b>2016</b>	\$13,298,426
<b>2017</b>	\$15,271,000
<b>2018</b>	\$15,569,361



# Outstanding and Ongoing O&M Work

## Outstanding EPA/DEP Required Repairs

- Specialty Excavation Repairs
  - North Joslyn Drive, McCurdy Drive, Stotler Road, Palm Avenue, Van Tine Street, Guylyn Drive, Hawthorne Drive, Lime Hollow Road, Sherwood Drive, Sycamore Drive
  - Frank Wood Drive, Ridgecrest Drive Rodi Road, Lincoln Road, Verona Road, Stephens Lane
  - Idlewood Drive, Gaywood Drive, Green Oaks CC
  - Total Estimated Cost \$500,000 (To be conducted in the 2019 Contract \$250,000)
- Spot Liners – 450 proposed and outstanding liners throughout Penn Hills
  - Total Estimated Cost: \$1.1 Million

## Ongoing Work

- CCTV:
  - All Priority Sewer Segments inspected every 5 years
  - All Non-Priority Sewer Segments inspected every 10 years
- Repairs: 1 year after discovery
- Mapping: As Needed – *Diameters, lengths, locations, materials, repairs, defects, etc.*
- Inspections
  - Manholes – 10 year cycle
  - Exposed Sewer Lines and Sewers within/around streams: After major rain events and at least annually

# Upcoming Issues

## Regionalization

- Review proposed agreement with ALCOSAN to accept sewer lines & pump station & EQ tank facilities
- Review requested updates to pump station and EQ facilities prior to ALCOSAN Acceptance

## Source Reduction

- Infiltration and Inflow (I&I). Storm Water and Groundwater leaking into the system. It must be reduced.
- **New Consent Order** to set limits on sewage flow to ALCOSAN. Flow Monitoring and Flow Isolation work is needed to assess the size of Penn Hills' I&I problem.

## Feasibility Study

- As a result of the 2013 Feasibility Study Report that summarizes the sewer segments that are overcapacity (surcharging or overflowing), **23** Projects have been proposed at a total cost of **\$27,400,000**. It remains to be seen if these projects will be required to be implemented – tied to source reduction success.

## Flow Target / Source Reduction Consent Order, 2019/2020

- This is a new DEP order that is anticipated to require the elimination of sanitary overflows and compliance with specific flow limits being discharged to ALCOSAN. This will require municipalities to reduce source flow (infiltration and inflow) to acceptable limits. We anticipate an adaptive approach which will most likely lower the flow limit every 5 years or so. Requiring continual source reduction efforts for many years.

# WPCD Debt Summary

- **September 1991** - Preliminary Injunction Order
- **September 1993** - Preliminary Injunction Order
- **June 1998** - Federal Consent Decree with the Federal Department of Justice
- **2008** - Federal Consent Decree Terminated
- **2008** - PA DEP Consent Order & Agreement (CO&A)
- **2016** - 2008 DEP CO&A Terminated
- **2016** - DEP Phase I CO&A and First Amendment
- **June 2018** - DEP Phase I CO&A and First Amendment Terminated

## Rate Breakdown (Cost per 1,000 gallons)

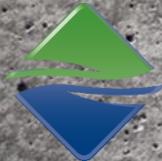
Total Rate per 1,000 Gallons	ALCOSAN Portion of the Rate (Treatment)	Penn Hills Debt Service Portion of the Rate <sup>1</sup>	Penn Hills O&M Portion of the Rate <sup>2</sup>
<b>\$19.37</b>	<b>\$7.94</b>	<b>\$4.97<sup>3</sup></b>	<b>\$6.46</b>

<sup>1</sup>Penn Hills Debt: 1994 - \$91 Million 2019 - \$64 Million

<sup>2</sup>This comparison does not include quarterly service charges (ALCOSAN or Penn Hills)

<sup>3</sup>Based on the percentage of the typical WPCD Budget amount

# Questions and Answers



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