

# **Sewer Technologies Used in the Washington Suburban Sanitary District**

**Ken Dixon, Planning Group, WSSC  
Alan Soukup, Montgomery County  
DEP**

# WSSC Overview

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- Over 5,000 feet of sewer pipe serving approximately 450,000 accounts.

# Gravity Sewer

- Most developed in the WSSC service area served by gravity sewer.
- Dependent on topography for gravity flow
  - Very reliable when properly designed, operated, and maintained
  - Initial high construction cost
  - Low cost for operation and maintenance
  - Major repairs can cause disruption in service

# Wastewater Pumping Station

- Used to transport wastewater in cases where outfall cannot transmit via gravity.
- Owned, operated and maintained by WSSC
- Expensive initial capital cost
- Extensive O & M costs
  - Electricity (dual-feed or generator)
  - Pump service or replacement
  - Safety and aesthetic (odor control) requirements

# Wastewater Pumping Stations

## (continued)

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- Flow collected to station service area or subdivision by gravity to pump station
- Pump station sends flow through force main to carry wastewater out to a nearby gravity collection system

# Pumping Stations

- Pumping station types, complexity & cost vary depending on:
  - Size of service area
  - Flow
  - Distance and elevation wastewater needs to be pumped
  - Odor and corrosion control
  - Site requirements (e.g.: access, security, buffers)
  - Other design/technical requirements

# Grinder Systems

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- Comprised of grinder pumps located on private property;
- Use low-pressure small PVC pipe to transmit flow from homes to transition (nearby gravity system) point;
- Property owners typically own, operate, and maintain grinder pumps; WSSC owns and maintains small pipes in public right-of-way;
- Lower cost to install systems but high operation and maintenance costs can occur for homeowner and utility;
- Service unavailable when power outages occur

# Grinder Systems (continued)

## ■ WSSC History

- Over 1,300 pumps in service area;
- Vast Majority are maintained by the homeowner/owner;



## ■ Typical problems experienced

- Some areas have experienced odor problems in the downstream gravity areas (odors from the transition traveled up service lines to the interior of residences or in the community).
- Reliability/maintenance problems for the customer;
- Lack of service during power outages



# WSSC Grinder Systems Policy (revised)

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- WSSC preference for sewer service to development is (1) gravity, (2) centralized pumping (WWPS), (3) grinder system;
- At times, WSSC staff understand that local planning, economic, and/or environmental considerations will also weigh on the methodology used to serve development.

## WSSC Policy (continued)

- WSSC sewer service policy dictated by area designations/policies as set by County Water and Sewer Plans, Master Plans, and applicable studies/reports;
- Includes measures/procedures to minimize potential odor problems;
- Includes measures/procedures to help ensure properly designed applications.