

Sustainable Water Infrastructure Task Force

Wyoming Valley Sanitary Authority
Evaluation of Assets

Bernard R. Biga
Director of Operations

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Wyoming Valley Sanitary Authority

Wilkes-Barre, PA



WVSA Overview and Background

- Wyoming Valley Sanitary Authority Was Formed In 1962
- Primary Treatment Began November 1969
- Secondary Treatment Began December 1987

WVSA Service Area

- 14 Charter Communities
- 22 Additional Communities Served
 - 94,000 Equivalent Dwelling Units (EDU's) With a Population of Nearly 250,000

WVSA Budgets

- 2008 Operating Budget = \$17,807,772
 - Plant Operation & Maintenance = \$8,272,500
 - Pumping Stations = \$1,950,000
 - Total \$10,222,500
- 2008 Capital Budget = \$2,750,000
- Spare Parts Inventory = \$2,500,000

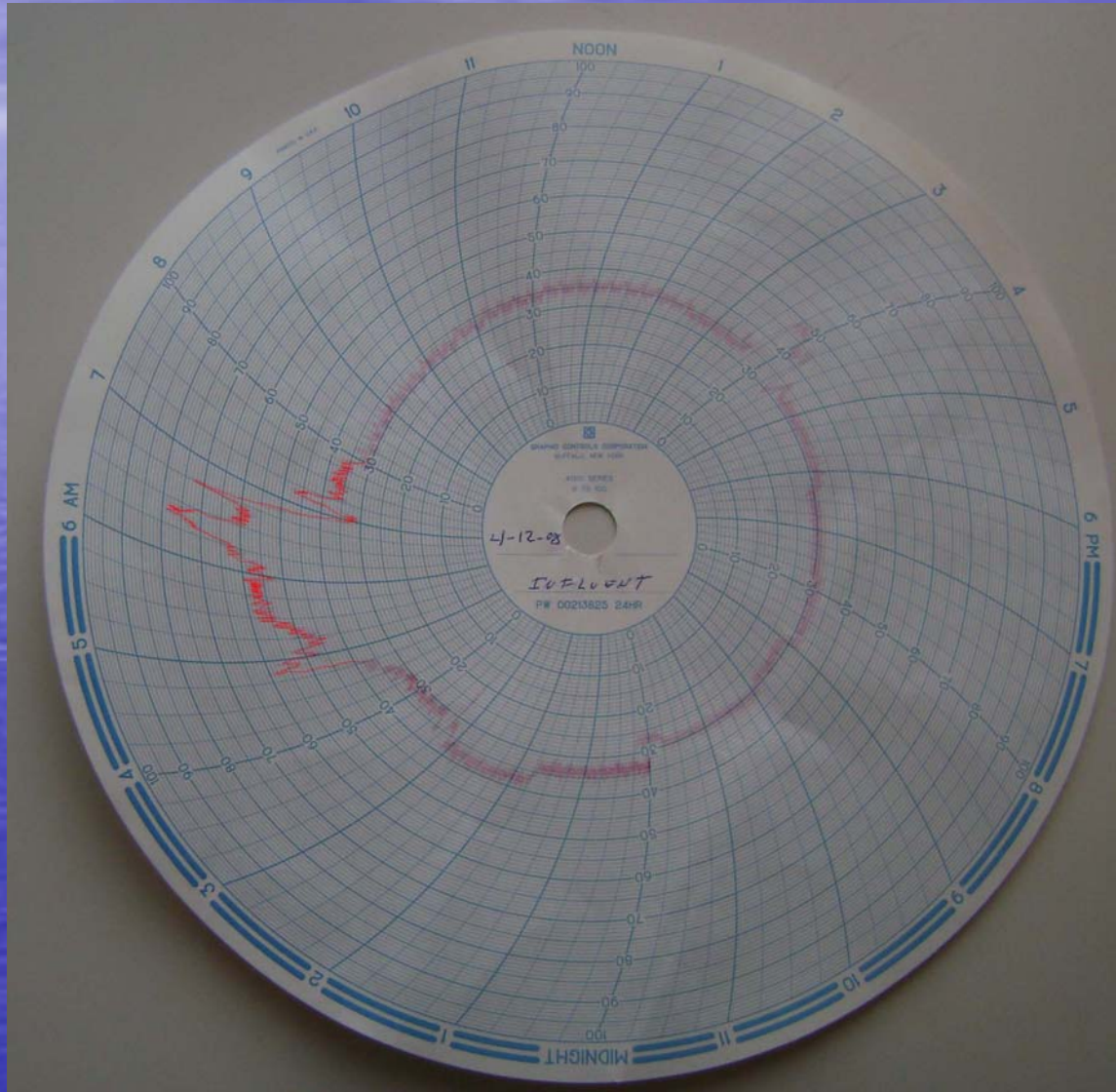
Flows and Loadings

- Permitted Average Monthly Flow = 50 MGD
- Dry Weather Flow = 32 MGD
- Five Year Average = 26.02 MGD

- Organic Loading (BOD)
 - Five Year Average = 39,670 pounds/day

WVSA Flow Chart

4/12/2008



Plant Layout



Major Plant Components

- Main Pump House
- Headworks
- 4 Secondary Activated Sludge Treatment Trains
 - Each Train has:
 - 5.52 MG Aeration Reactor
 - 2 Circular Units 185 Feet in Diameter
 - 1.88 MG Final Clarifier
 - Circular Unit 165 Feet in Diameter
- Solids Handling

Major Out-Plant Components

- 56 Pumping Stations - Each Consisting of:
 - 2 or 3 Motors and Pumps
 - Motor Control Center
- 56 Diversion Chambers (DC)
 - Combined Sewer Overflow (CSO) Points

Major Out-Plant Components

- 35 Miles of Pipe
 - 20 Miles of Gravity Sewer Lines
 - Range in Size from 8 to 84 Inches
 - 15 Miles of Force Main (Pressure Pipe)
 - Range in Size from 18 to 36 Inches

What does "It" mean?

- "It" means that the cost to Wyoming Valley Sanitary Authority ratepayers will increase significantly.
- Why?
 - WVSA must meet the Chesapeake Bay Strategy's Nutrient Limits, CSO requirements and Infrastructure upgrades.

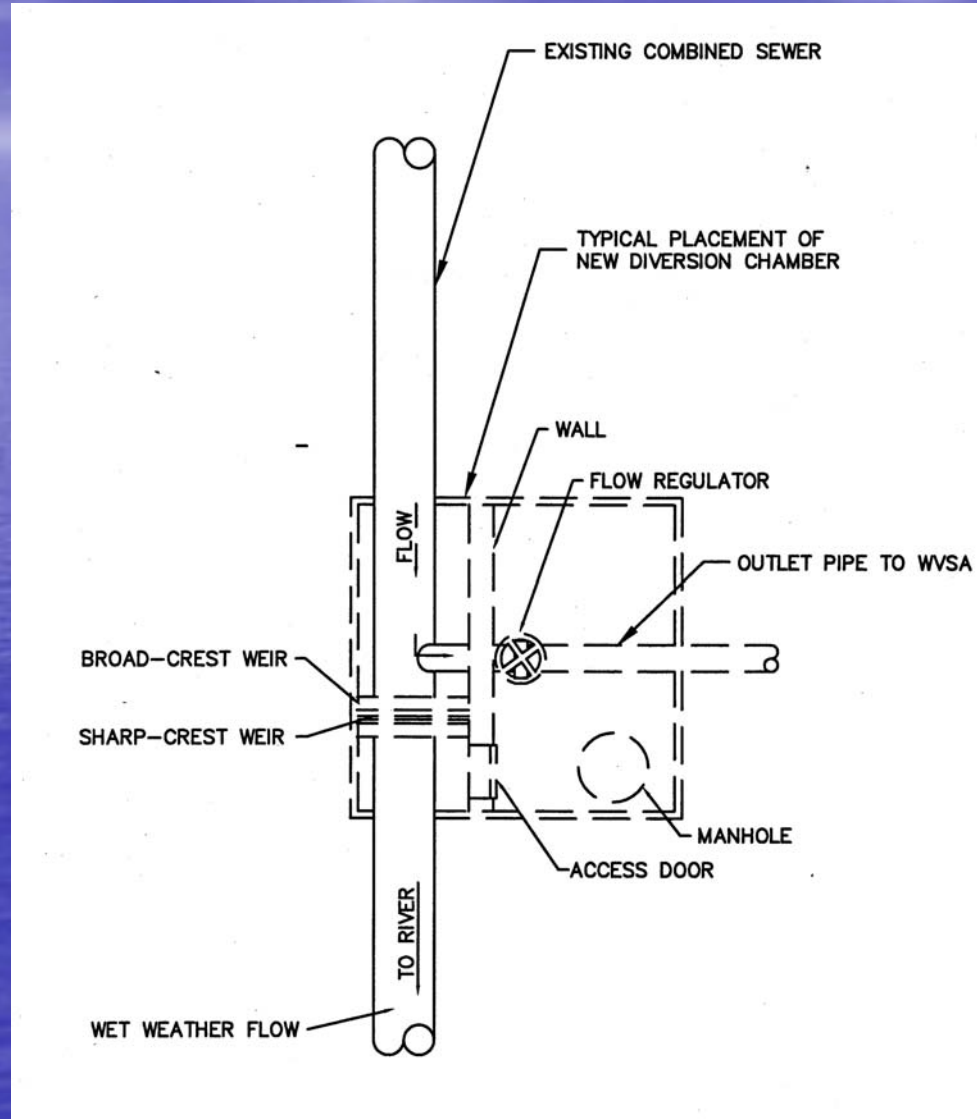
The Chesapeake Bay Strategy

- WWSA Must Meet the Mandated Cap Loads for Nitrogen and Phosphorus
 - Estimated Capital Cost = \$6,200,000
 - Meet First Compliance Year Ending 30 September 2011.

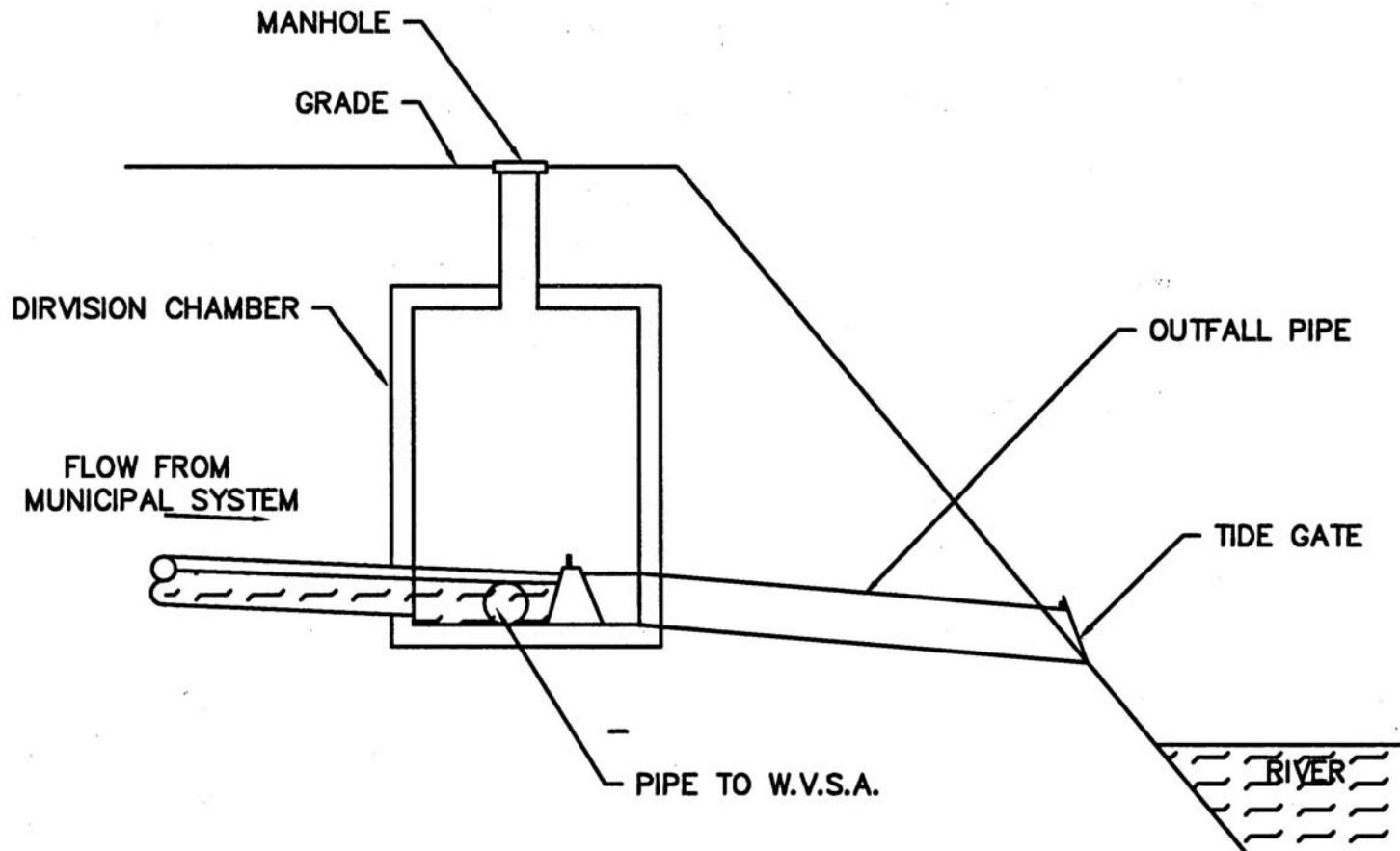
Combined Sewer Overflows

- 55 Diversion Chambers
 - Points Where Combined (Sanitary and Storm) Flows Exceeding Hydraulic Capacity of the System Diverted.

WWSA Diversion Chamber



WVSA Diversion Chamber



NORMAL OPERATION

Combined Sewer Overflows

- Cost to Eliminate from System
 - 2002 Engineering Study Places Cost at \$90,000,000 to Meet That Year's Regulations
 - Cost in Today's Dollars = \$114,000,000
- The Above Estimate Includes Site (Local) Treatment and Discharge

Combined Sewer Overflows

- Engineering Estimates for Total Separation of Combined Sewers in Service Area Approach \$400,000,000!
 - Currently a CSO Project is Underway at the Ross Street Diversion Chamber
 - Cost = \$7,400,000 for ONE CSO Elimination Project

PA Senate Bill No. 101

- WWSA Supports Senate Bill No. 101 (Session of 2007) Introduced by Senator Raphael Musto and Other Senators.
- Bill was Introduced on March 2, 2007
- Authorizes Incurring Indebtedness of \$1,000,000,000 for Control of Discharges from Combined Sewer Overflows.

Pumping Stations

- 56 Stations
 - 25 Original WWSA Stations
 - 31 Additional Stations WWSA Acquired Since 1990
- Cost Estimate to Upgrade 25 Original Stations = \$15,000,000

Pumping Stations

- 31 Acquired Stations Improvements = \$10,000,000 (These are Smaller Stations)
- Total Pumping Station Improvements = \$25,000,000

Plant Equipment Needs

- Recognized Useful Life of Wastewater Equipment is 20 – 25 Years
 - Solids Handling Equipment is Approaching that Age
 - Replacement of Centrifuges and Ancillary Equipment = \$3,500,000
 - Replacement of Fluidized Bed Incinerator and Ancillary Equipment = \$5,500,000
- Total Dewatering/Incinerator Cost = \$9,000,000

Total Cost of All Sizeable Projects

- Chesapeake Bay Mandate = \$6,200,000
- Elimination of CSO's = \$114,000,000 to \$400,000,000
- Pump Station Upgrade = \$25,000,000
- Centrifuge/Incinerator Replacement = \$9,000,000
- Total Cost = \$131,000,000 to \$440,200,000

"Disclaimer"

- WWSA's Charge is the Transmission and Treatment of Wastewater. We Do Not Know the Age Nor the Condition of More Than 800 Miles of Pipe in the Collection Systems of the Service Towns. (Some installed in the 1800's) Over 400 Miles of Those Pipes are in Combined Sewer Systems. The Cost of Separation is Unknown with Estimates Running in the Hundreds of Millions of Dollars.