



PUBLIC SEWER SERVICE, CAPACITY MANAGEMENT & MUNICIPAL PLANNING

Our shared role in protecting
local water resources



Joanne M. Mahoney
County Executive

Goals for this presentation:

- Water Environment Protection?
- Clean Water - What is it worth?
- Aging Infrastructure Issues
- System Status Report
- Planning Opportunities and working together!

Joanne M. Mahoney
County Executive

Tom Rhoads
Commissioner



Water Environment Protection – What Is That?

- **What we do:**



Water Environment Protection – What Is That?

- **What we do:**



Water Environment Protection – actually we make dirty water clean!



Clean Water – What Is It Worth?

- **Clean Water is vital for life! Human life, plant life, and animal life. Your sewer system protects life.**
- **Clean Water is vital for our economy: farming, industry, and commerce.**
- **Clean Water adds to our property value, to our recreational opportunity, and to the quality of our life.**



What is the County doing to keep our water clean?

- **Save the Rain** projects are dramatically improving local receiving waters including Onondaga Lake and its tributaries.
- WEP owns and operates six wastewater treatment plants.
- WEP operates and maintains over 150 pump stations; some County owned, some municipal.



Some interesting performance indicators for WEP.

- Wastewater Conveyed and Treated: 29 billion gallons
- % Compliance of SPDES permits (all six plants): >99%



- Number of Permitted Industries: 69
- Number of Industrial User Inspections: 100
- Number of Industrial User Permits Issued: 19



- Number of Samples Collected: 13,148
- Number of Analyses performed: 94,399

What is the County doing to keep our water clean?



- Award winning Save the Rain projects are dramatically improving local receiving waters including Onondaga Lake and its tributaries.



Pass Arboretum, Syracuse

What is the County doing to keep our water clean?

- WEP owns and operates six wastewater treatment plants: Baldwinsville, Meadowbrook, Oak Orchard, Metro, Wetzels and Brewerton.



What is the County doing to keep our water clean?

- **WEP operates and maintains over 150 pump stations; some County owned, some municipal.**
- **We maintain 2100 miles of sewers that we own and through Intermunicipal Agreements with Towns.**
- **\$2,000,000 Suburban Green Grants**



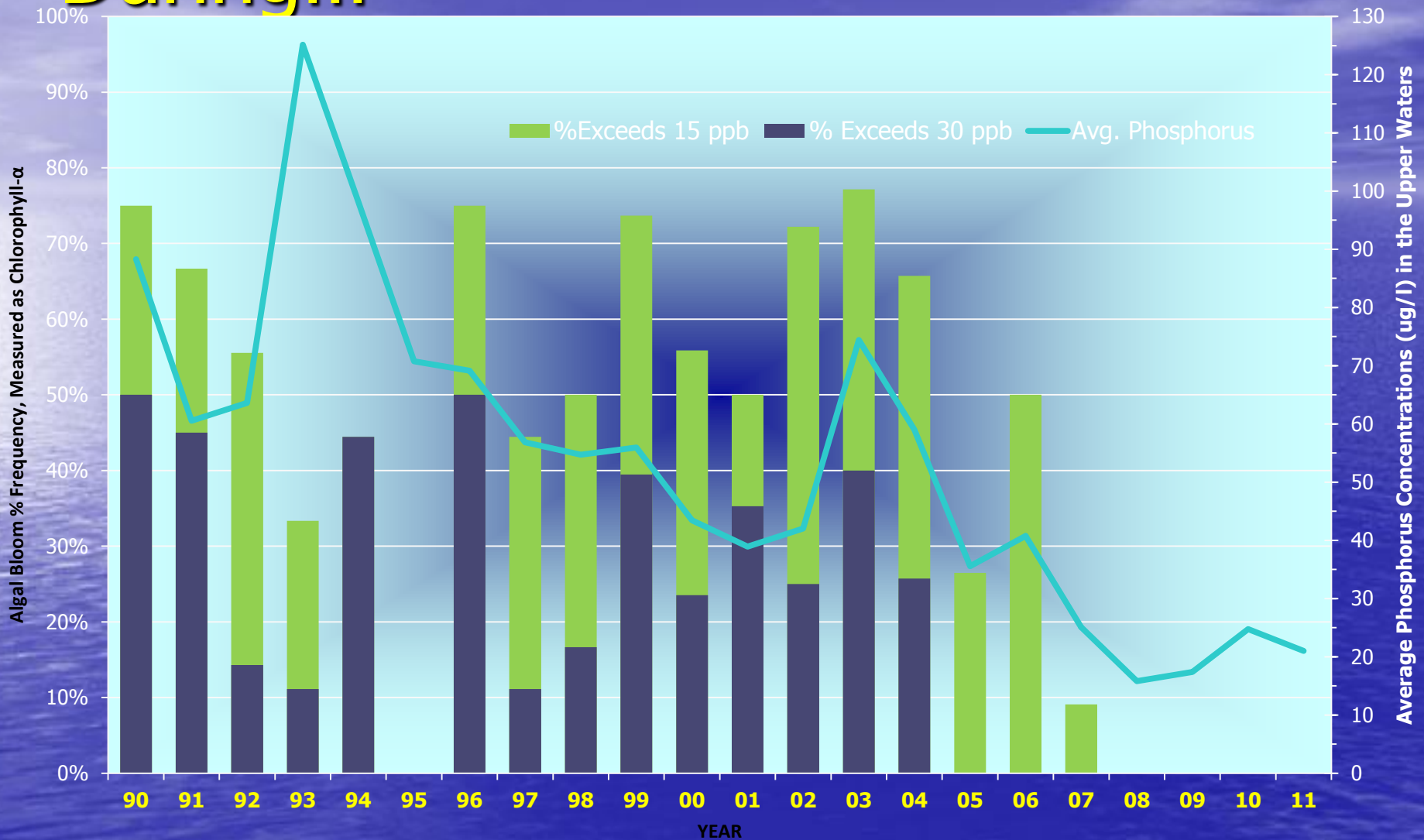
onondaga
county

**SUSTAINABLE
DEVELOPMENT PLAN**

Onondaga Lake Before



During...



Summer (June-September) Algal Bloom Frequency & Summer Average Phosphorus Concentrations in the Upper Waters (0-3m) of Onondaga Lake

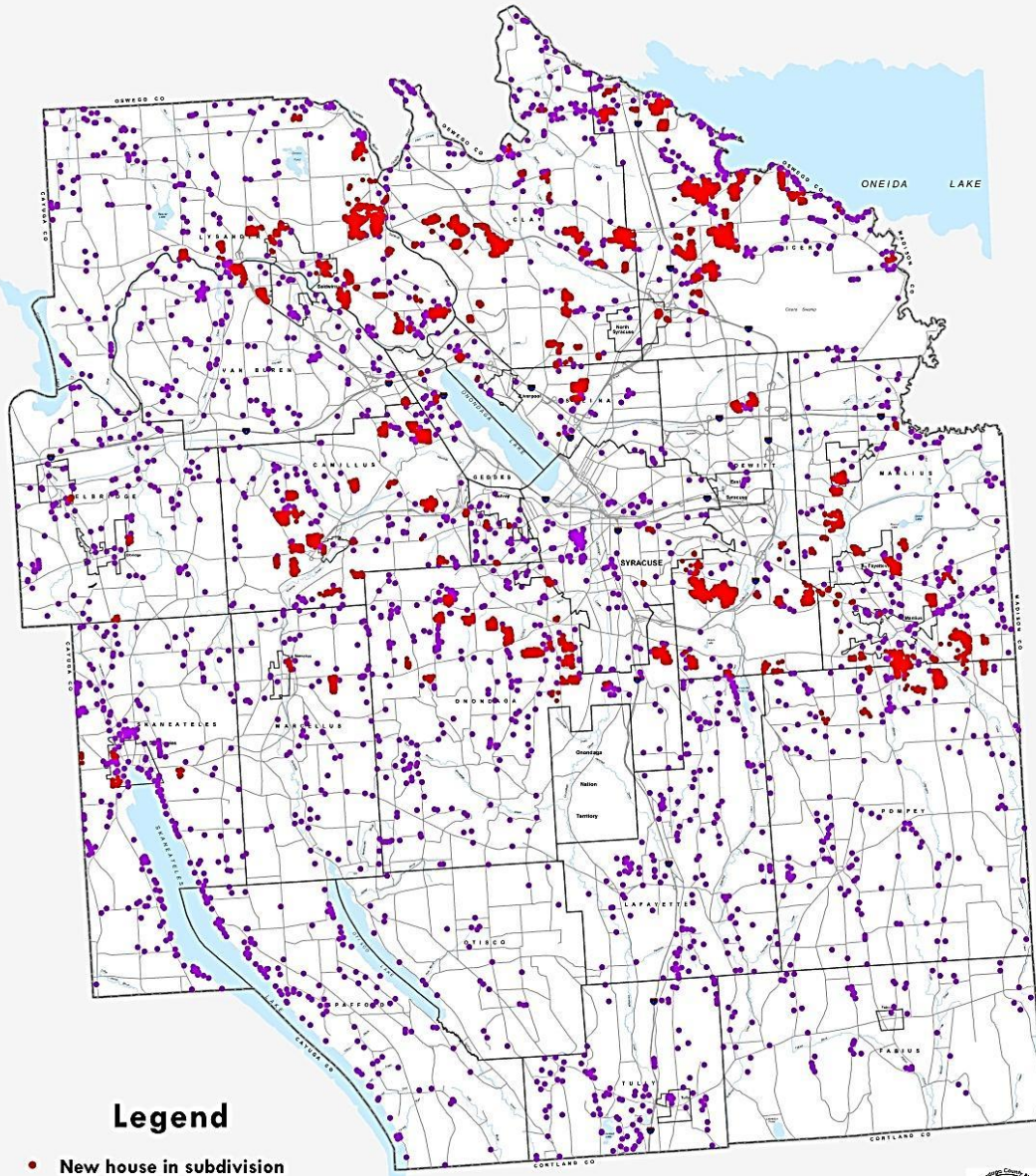
Onondaga Lake After



Let's transition to some legacy planning issues

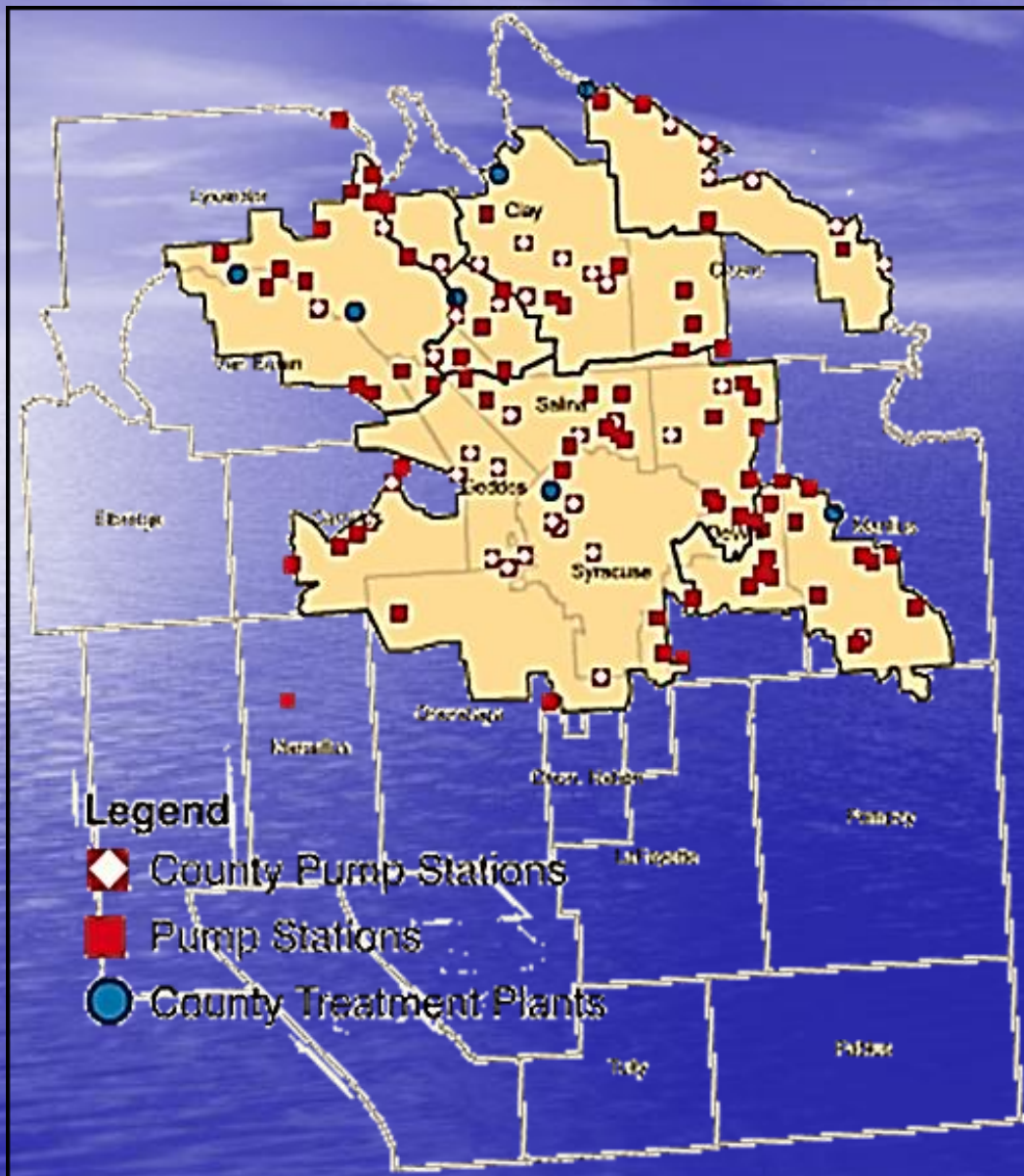
- Call it what you want, we have spread the population out but it has not grown. **Is that sustainable?**
- More infrastructure + same population served = strained budgets and rate increases.
- We are adding new infrastructure, but Towns and Villages are not always fixing the old. **Shouldn't we fix it first before we add more?**

Residential Development in Onondaga County 1998-2010

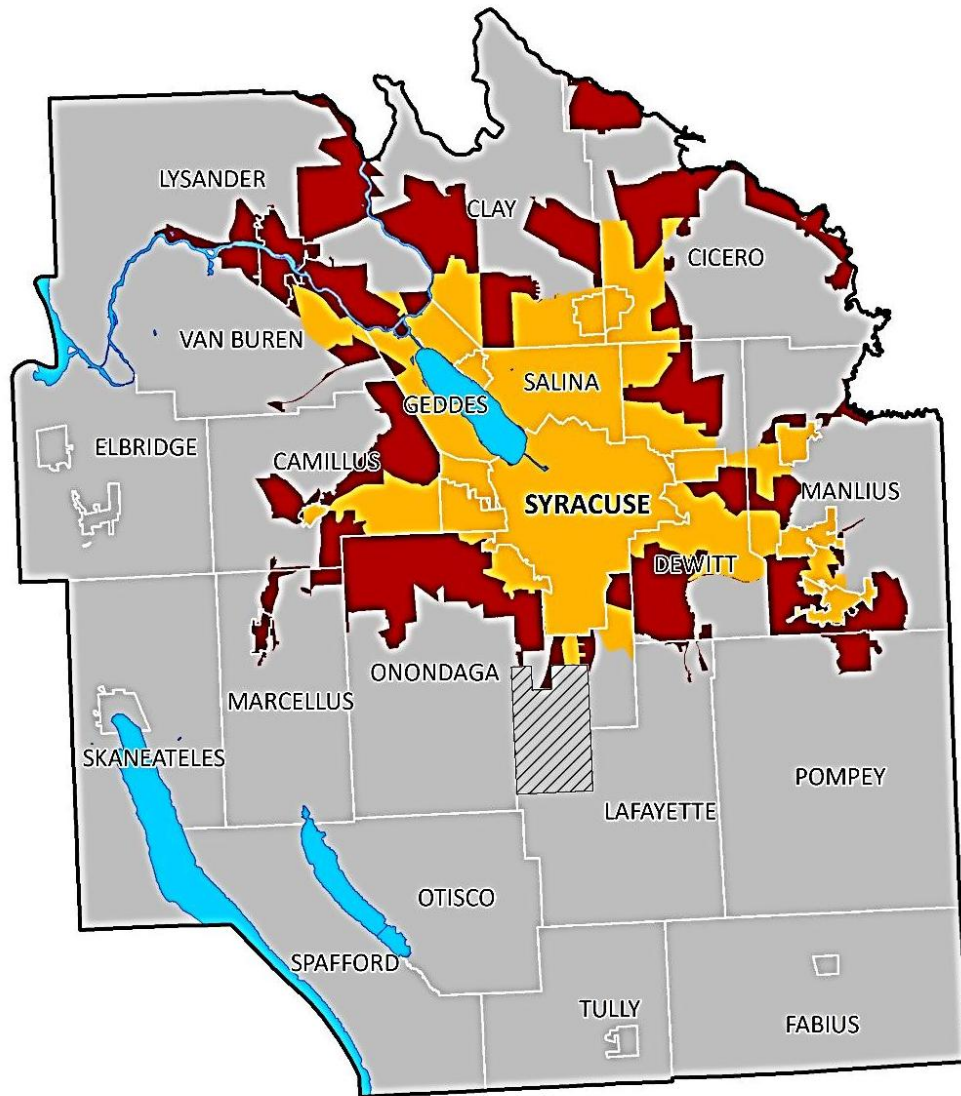


- Since 2000, almost 7,000 new residential parcels have been created.
- That includes 147 major subdivisions covering 2,600 acres. (that's just the red dots)





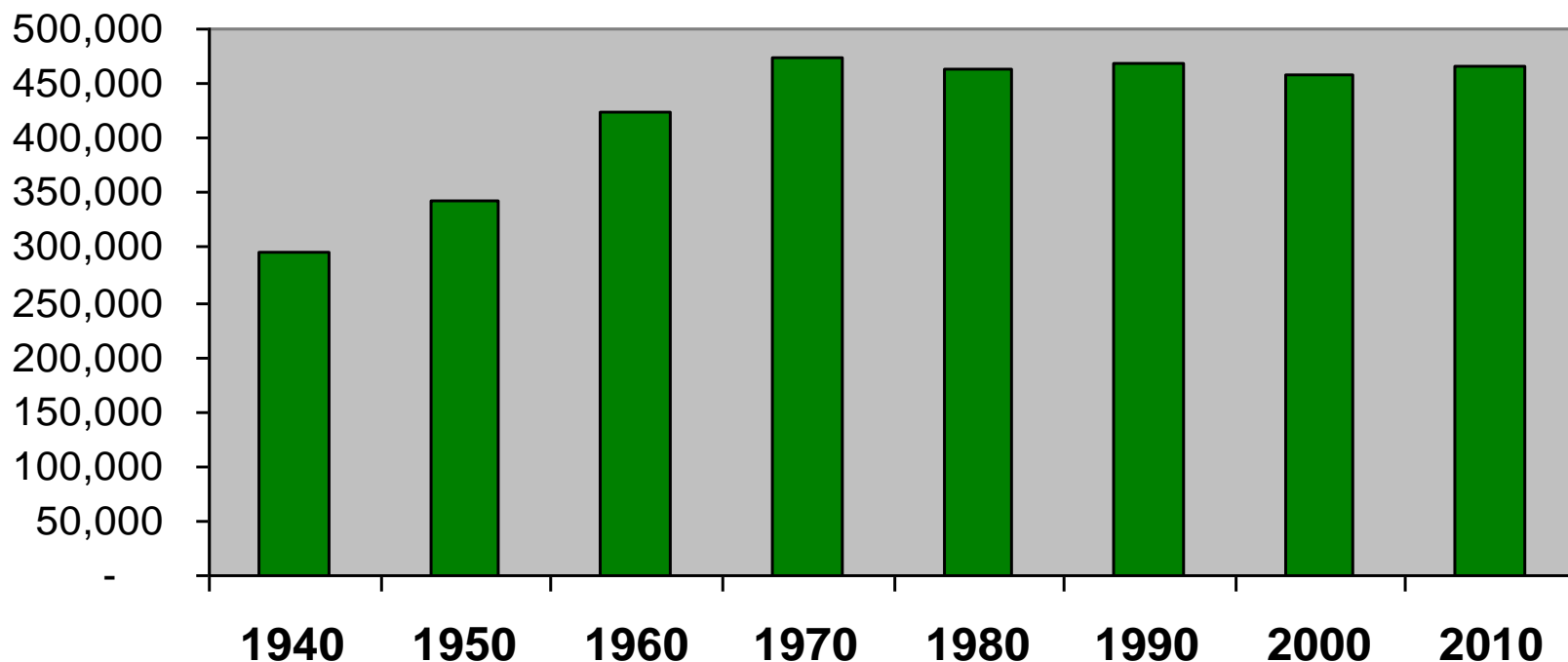
- Over 10 miles of new sewers in 2007 alone!
- Added 12,550 acres to Sanitary District since 1998



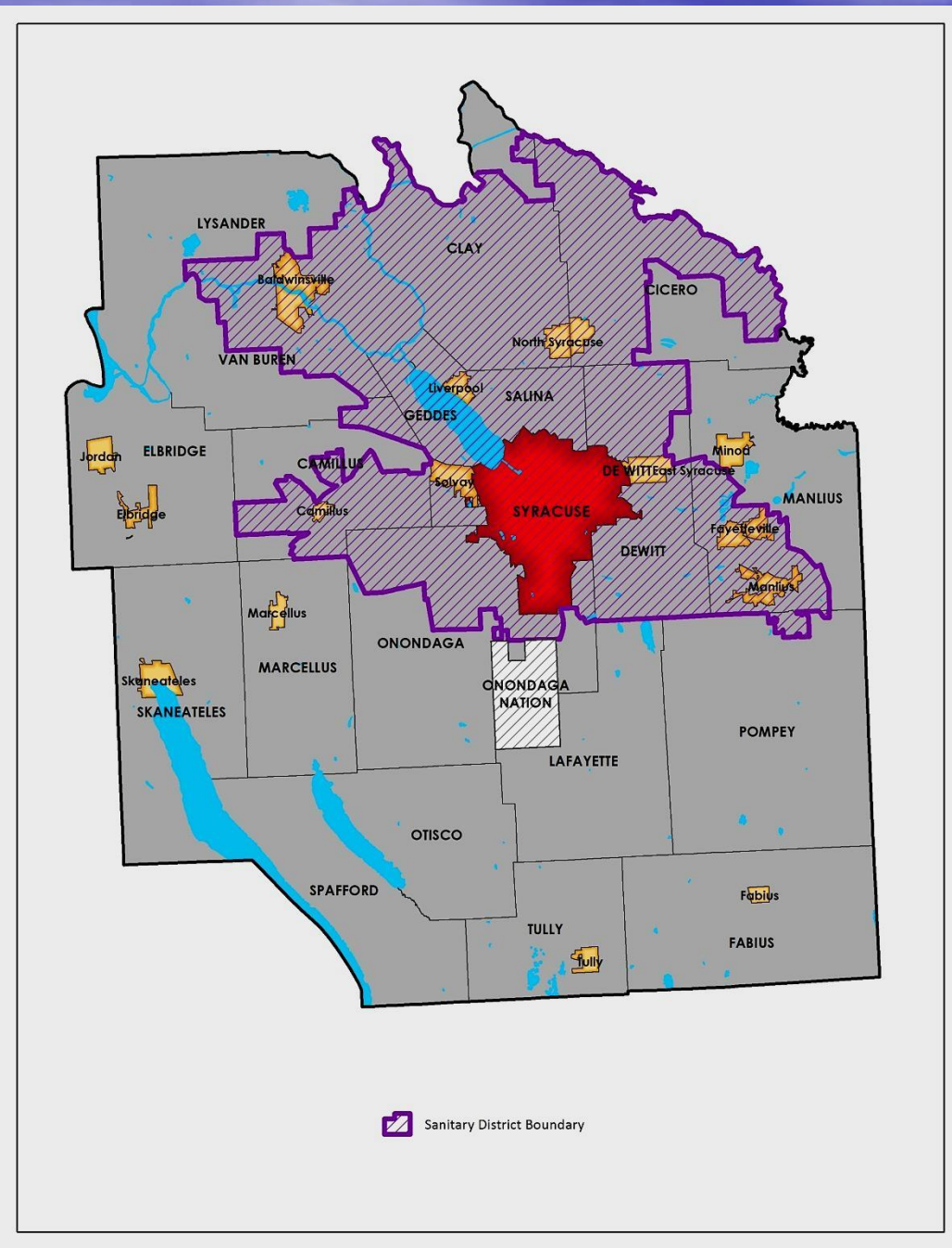
- 1970 Urbanized Area
- 2010 Urbanized Area

- The areas in red were all urbanized after 1970.
- The population has spread out since 1970; it has not grown.

ONONDAGA COUNTY POPULATION



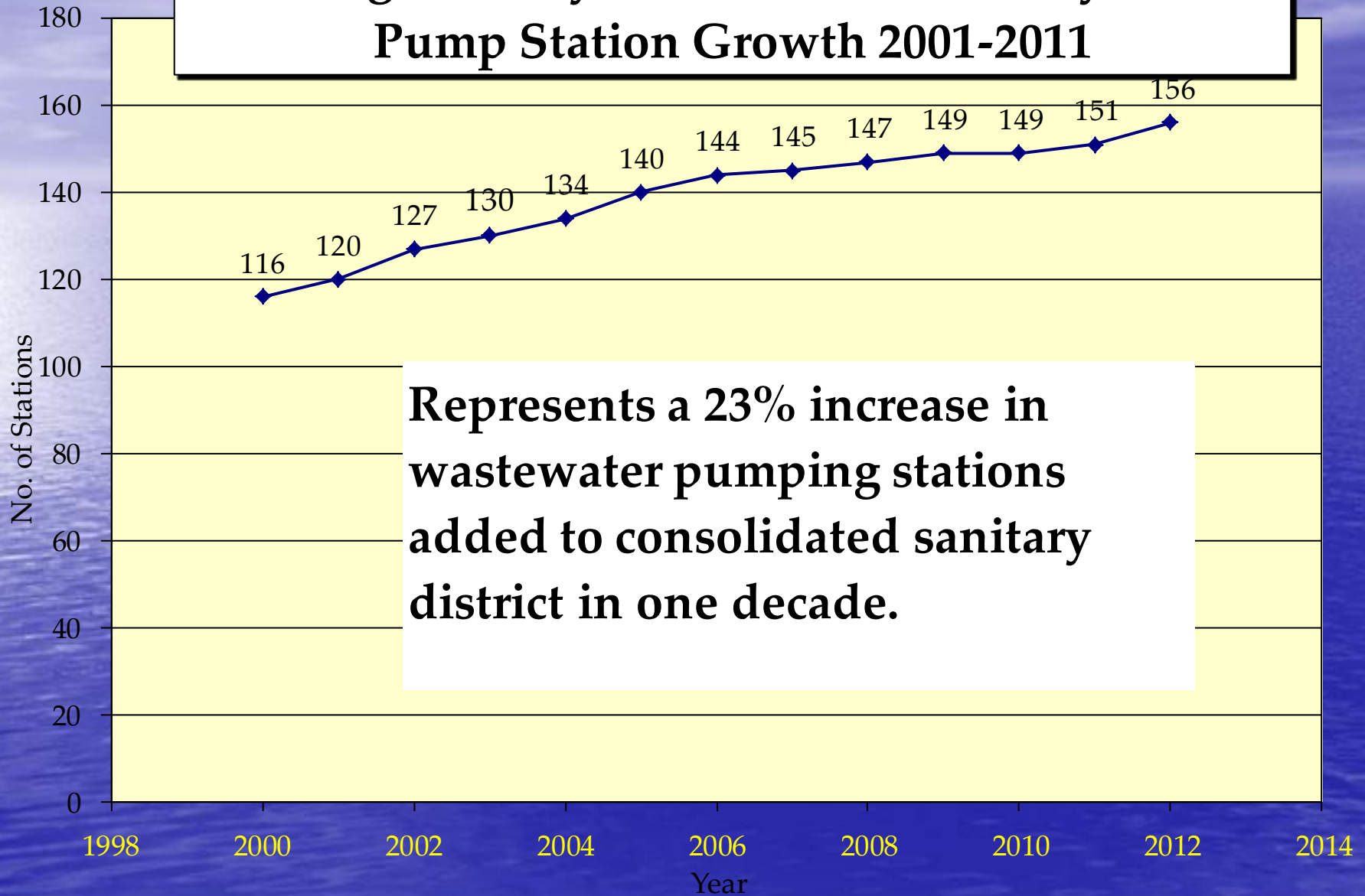
- **Population is flat since 1970. We spread out; we did not grow.**
- **Result: More sewer infrastructure to serve the same population. Rate stress!**



- The spreading urbanized area matches the changing spread of the combined sanitary district.

- *More sewers & more pump stations, same population served.*

Onondaga County Consolidated Sanitary District Pump Station Growth 2001-2011



Cost Impacts?



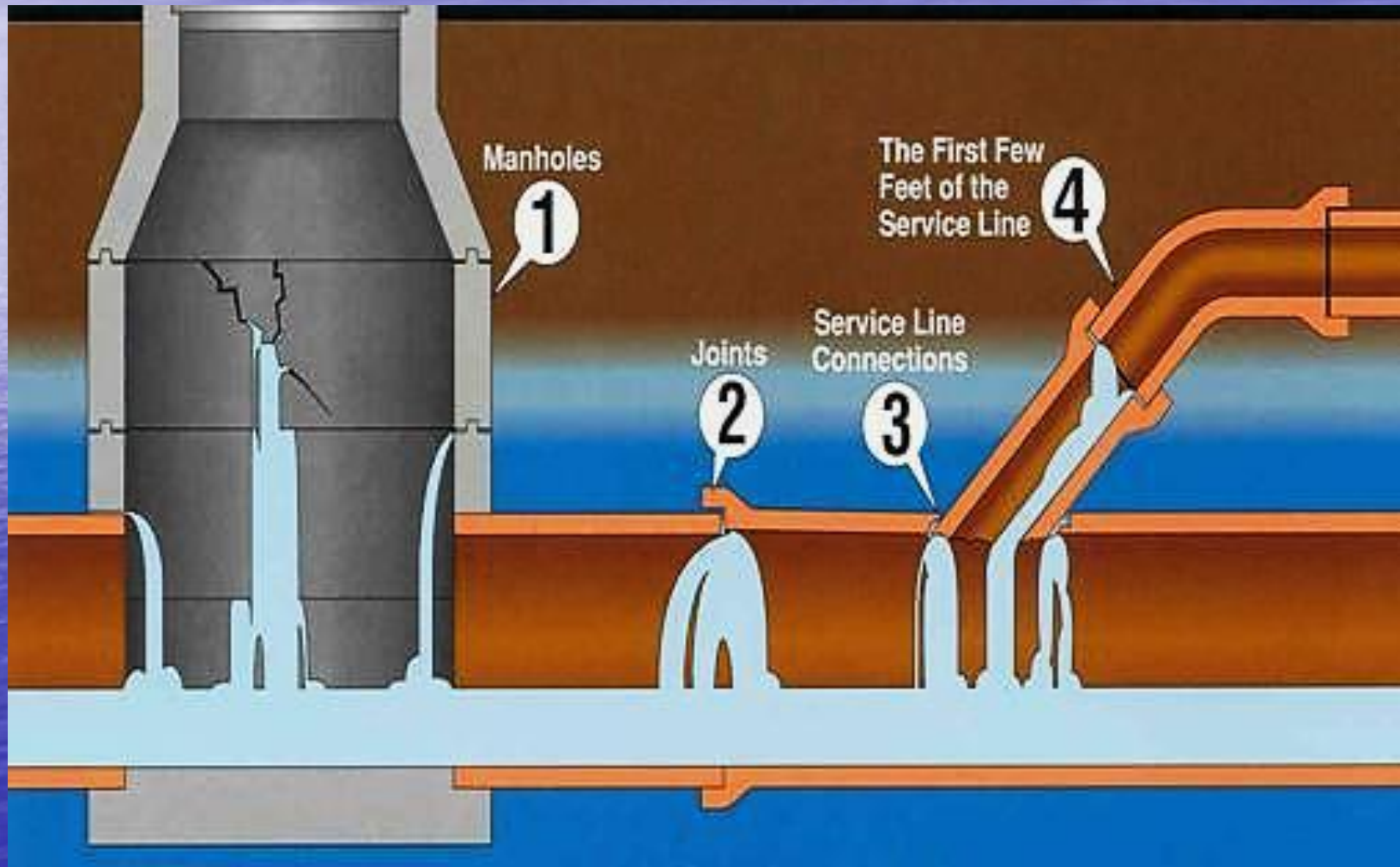
- It costs about \$10,000 to \$12,000 per year to maintain a 'small' pump station.
- The typical pump station lasts about 45 years, versus 75 to 100 for gravity sewers.
- The pumps typically last only a decade or two.
- Whenever the pumps clog or during power outages, emergency service is necessary.

Cost Impacts?

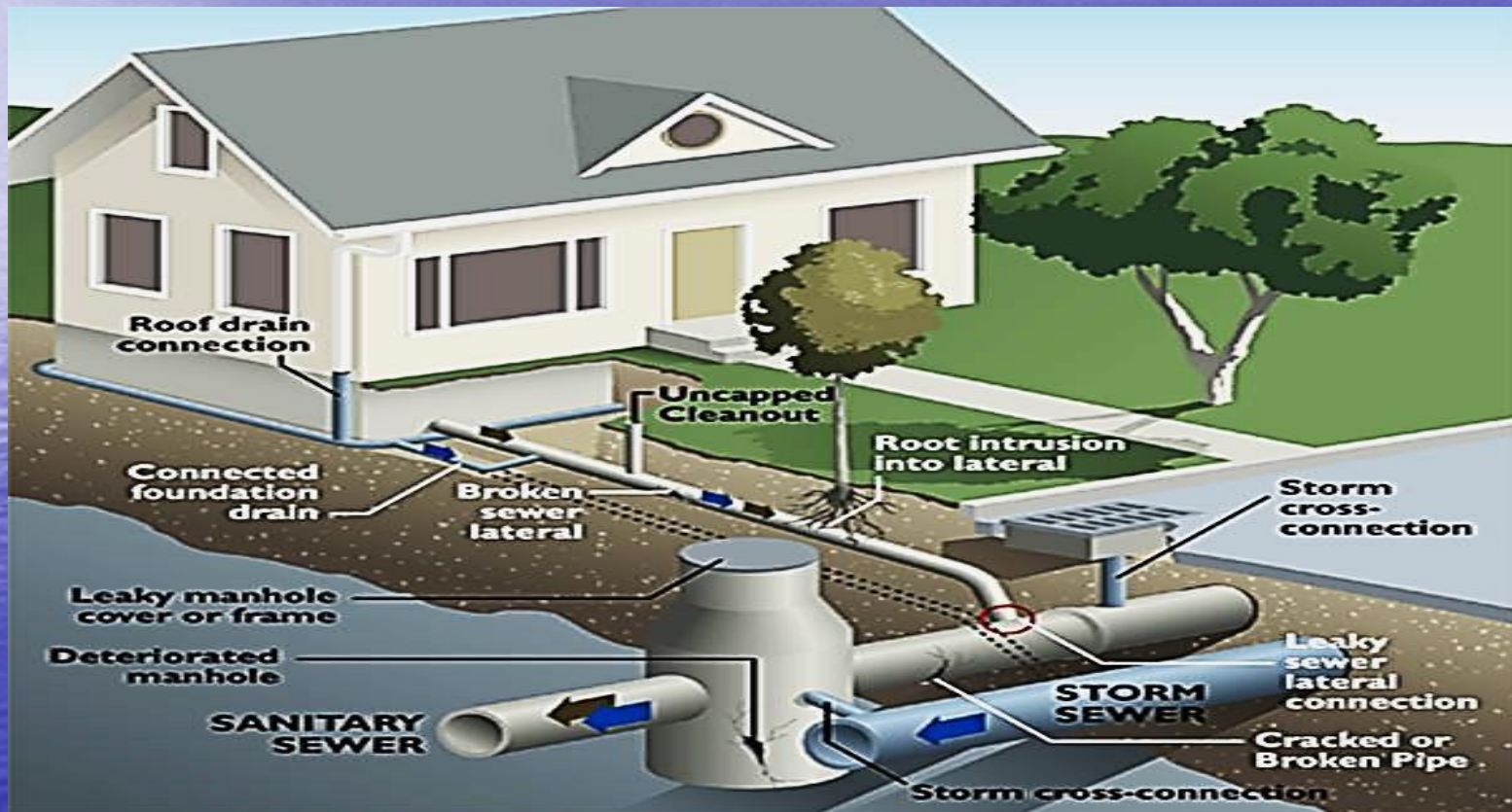
Gatewood Pump Station



Our fix it first issue: Aging Infrastructure - Prone to Inflow and Infiltration



Sources of Inflow and Infiltration



Issues Created by Inflow/Infiltration

- **Triggers prohibited sanitary sewer overflows; results in fines and penalties**
- **Uses capacity within the sewer system that should be used for economic growth**
- **Results in the unnecessary conveyance and treatment of clean groundwater**



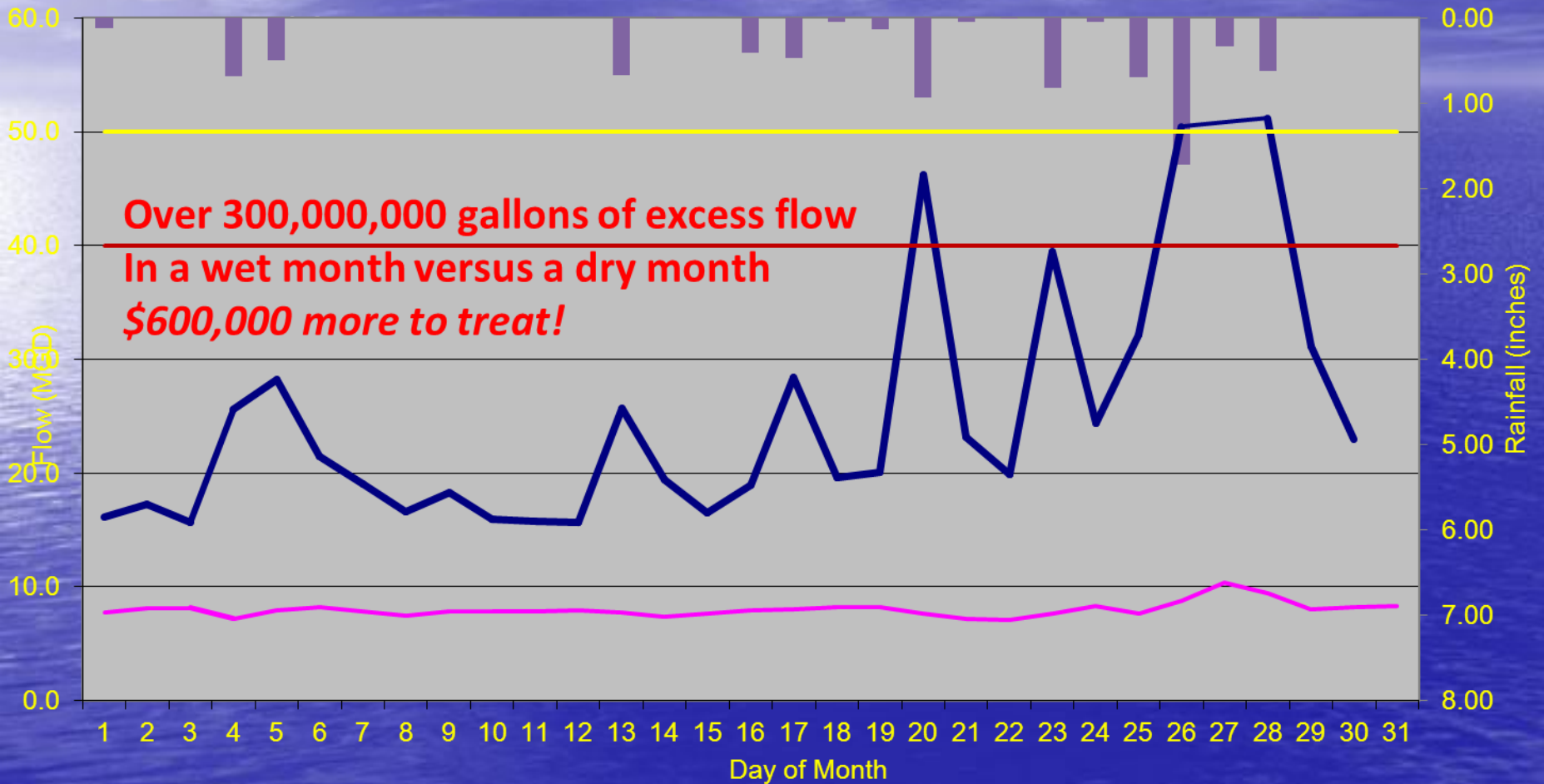
Issues Created by Inflow/Infiltration

- **Overflows may also back up into basements, causing extensive property damage.**



Impacts of Inflow/Infiltration

Ley Creek Pump Station Average Daily / Peak Flow



**Over 300,000,000 gallons of excess flow
In a wet month versus a dry month
\$600,000 more to treat!**

- Rainfall - April 2011
- April 2011 Peak Flow (Wet Weather) - Monthly Total 596.1 MG
- 5 X Dry Weather Flow
- July 2012 Avg Daily Flow (Dry Weather) - Monthly Total 248.0 MG

Issues Created by Inflow/Infiltration



Instead of an efficient little car we need the wet weather capacity of a double decker bus to manage extraneous flow. *And sometimes not all the riders can make it on the bus!*

Capacity Lost to Inflow and Infiltration



Capacity impact of inflow & infiltration



Leaking manhole before



Repaired manhole after

Eroding System Capacity – WEP's serious capacity constraints

- **In April 2012 the DEC required us to implement flow limits in the Meadowbrook service area. No new development approval with sanitary connections without flow offset.**



Eroding System Capacity – WEP's serious capacity constraints

- **By DEC regulation the Oak Orchard Treatment plant very recently reached its 95% limit for treatment capacity of BOD load. No new development approvals with sanitary connections while we study the issue.**



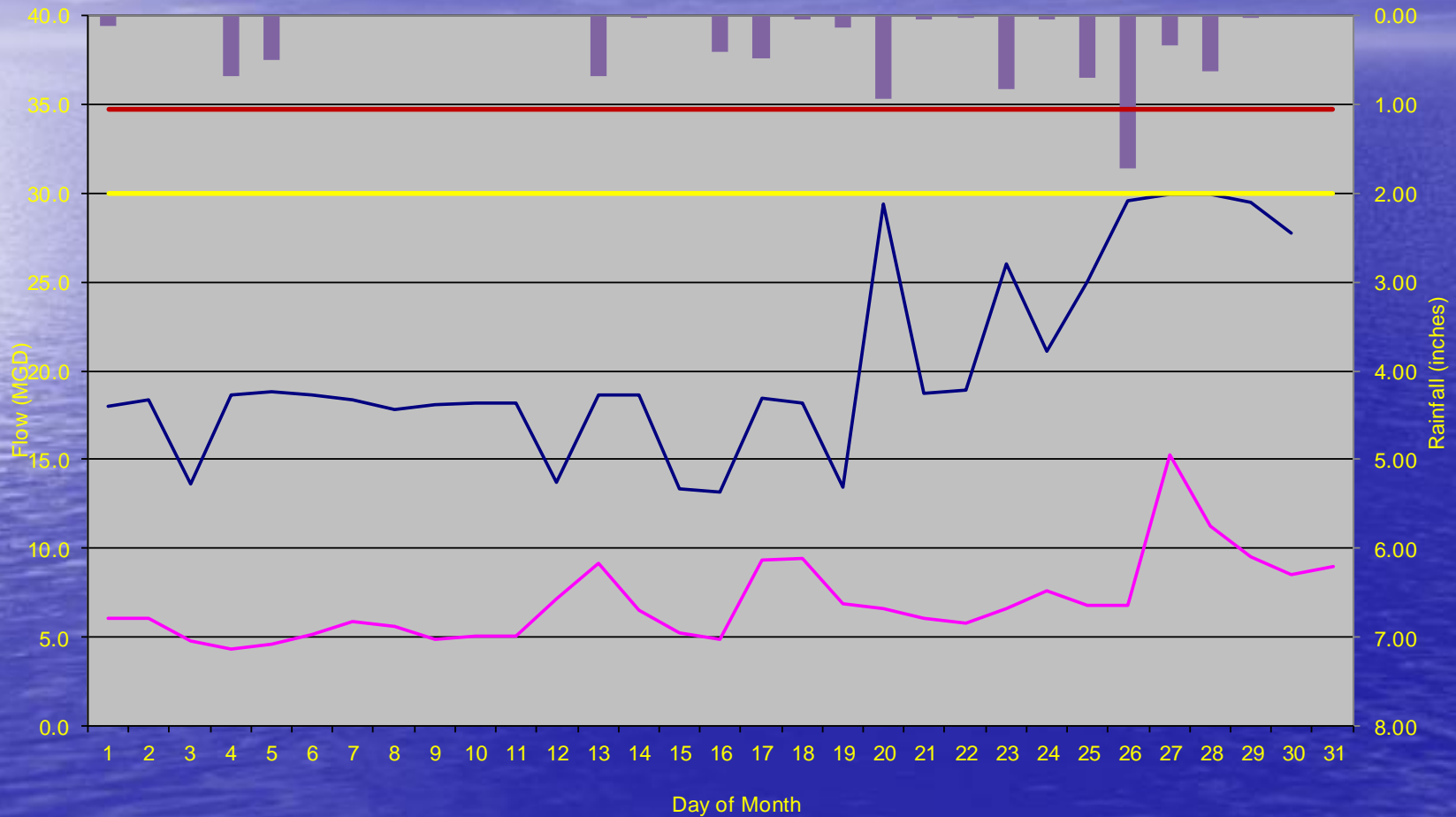
Eroding System Capacity – WEP's serious capacity constraints

**Due to previous sanitary sewer overflows -
flow and offset constraints are required for:**

- Westside Pump Station service area**
- Ley Creek Pumping Station service area**
- Davis Road Pumping Station service area**
- Liverpool Pumping Station service area**
- Electronics Park Trunk Sewer Area**

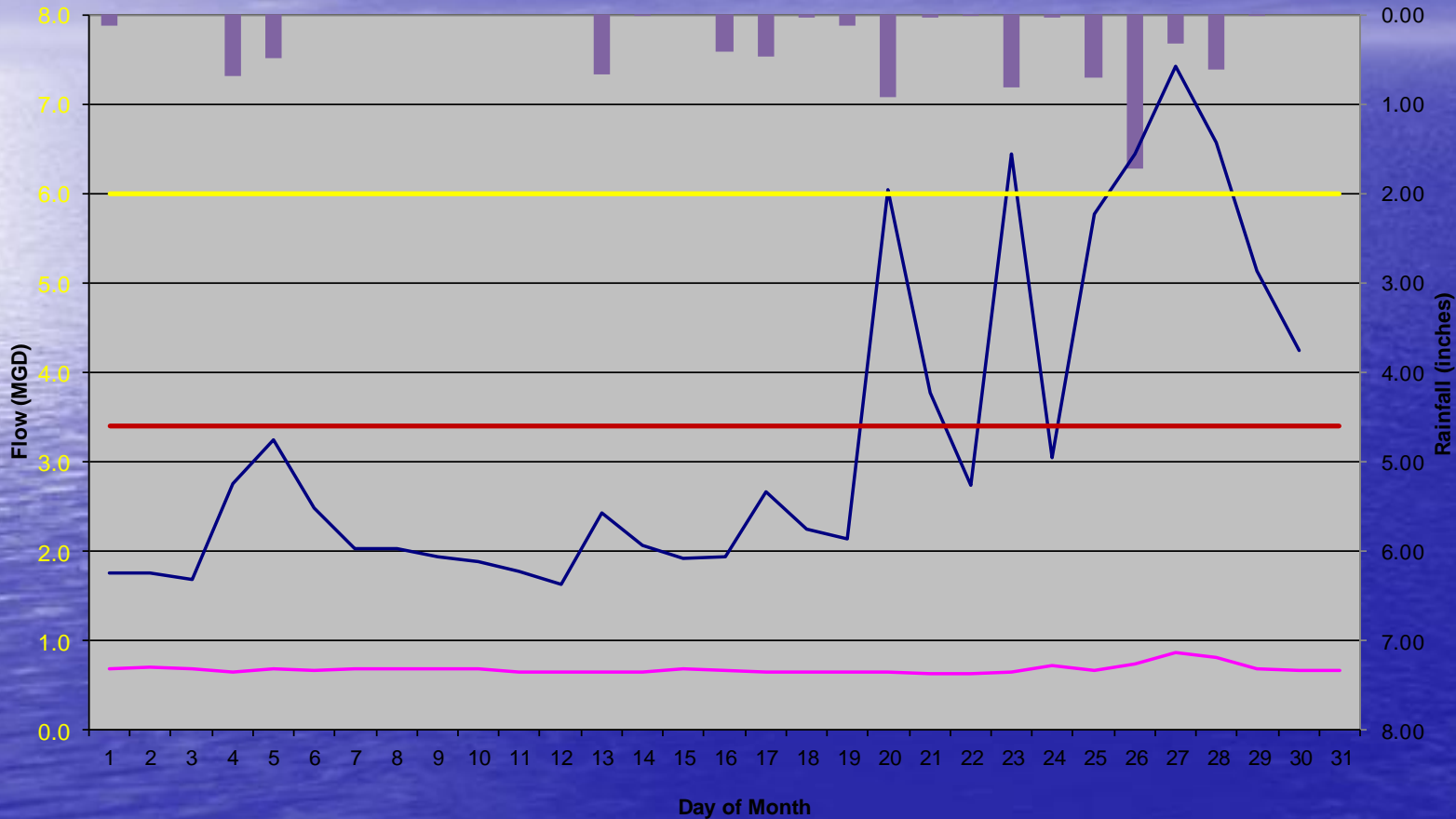
Eroding System Capacity –

Westside Pump Station Average Daily / Peak Flow



Eroding System Capacity –

Liverpool Pump Station Average Daily / Peak Flow



- Rainfall - April 2011
- April 2011 Peak Flow (Wet Weather) - Monthly Total 66.4 MG
- 5 X Dry Weather Flow
- July 2012 Avg Daily Flow (Dry Weather) - Monthly Total 21.0 MG

Shared Goals

- **Protect public health – clean water is worth it.**
- **Ensure that current and future development is not impeded by capacity constraints , through the reduction of inflow and infiltration (I & I).**
- **Preventing overflows via proper maintenance of wastewater infrastructure throughout the Sanitary District .**
- **Reduce rate stress from excess use of energy and chemicals to treat groundwater and stormwater (I & I).**
- **Use **green infrastructure** solutions to make water a resource not a waste. Use our details at www.savetherain.us**

Teamwork with Municipalities

- **Green infrastructure works; stormwater source control works. Save the Rain!**



- **Reducing I&I creates capacity for growth and reduces costs to ratepayers.**
- **Expanding service infrastructure with the same rate base only drives up costs. Let's maximize the use of existing infrastructure.**
- **Reasonable offsets are better than moratoriums, penalties, and consent orders.**



Questions? Please visit:
www.savetherain.us

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