



Foraging for sustenance in the hunt for appropriate rate structures

Angela Licata

Deputy Commissioner for Sustainability

New York City Department of Environmental Protection

DEP is the largest combined water and wastewater utility in the United States, with 6,000 employees and an annual revenues of more than \$3.5 billion.

WATER SUPPLY

- Deliver almost 1 billion gallons of water to nine million New Yorkers every day and maintain 6,800 miles of water mains
- Protect over 2,000 square mile watershed, including 19 reservoirs and three controlled lakes



WASTEWATER TREATMENT

- Treat almost 1.3 billion gallons of wastewater each day
- Operate and maintain 14 treatment plants, 96 pumping stations, and over 7,500 miles of sewers



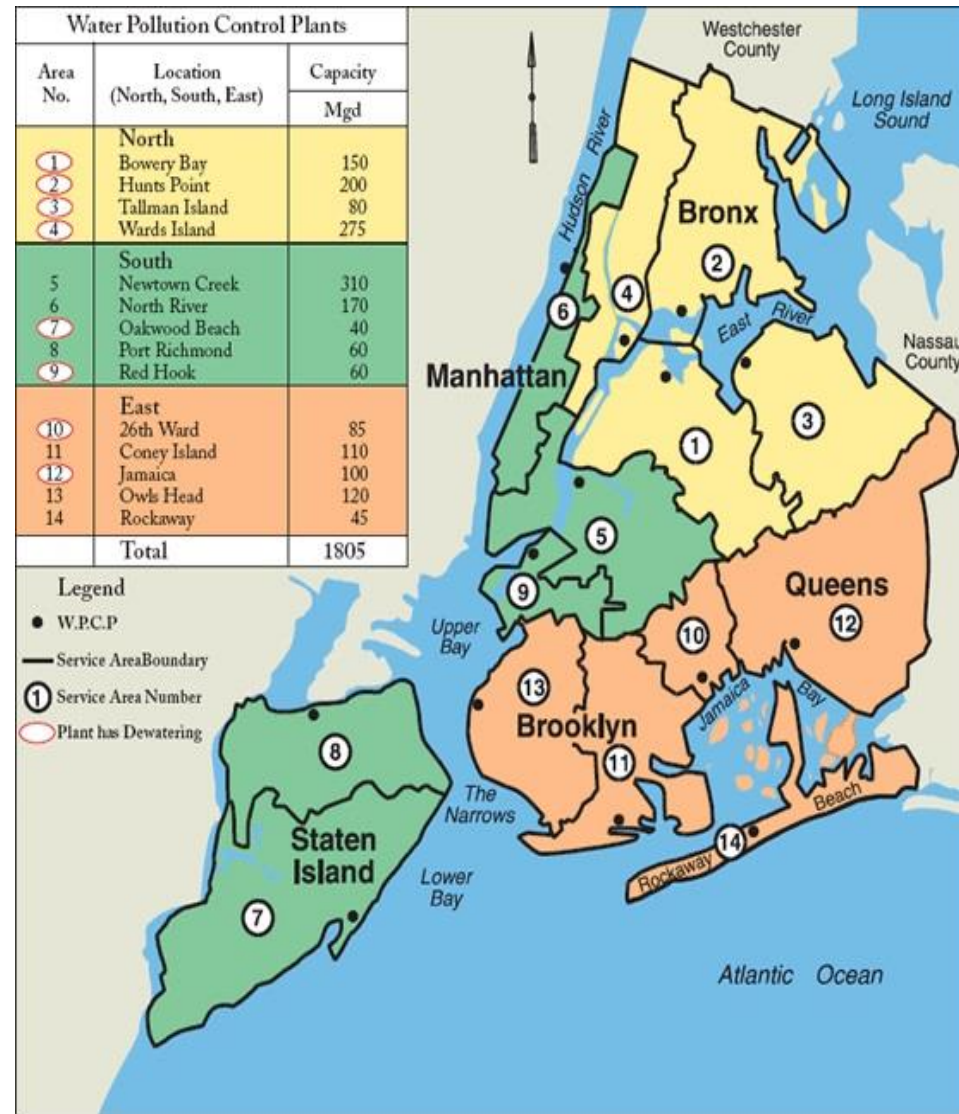
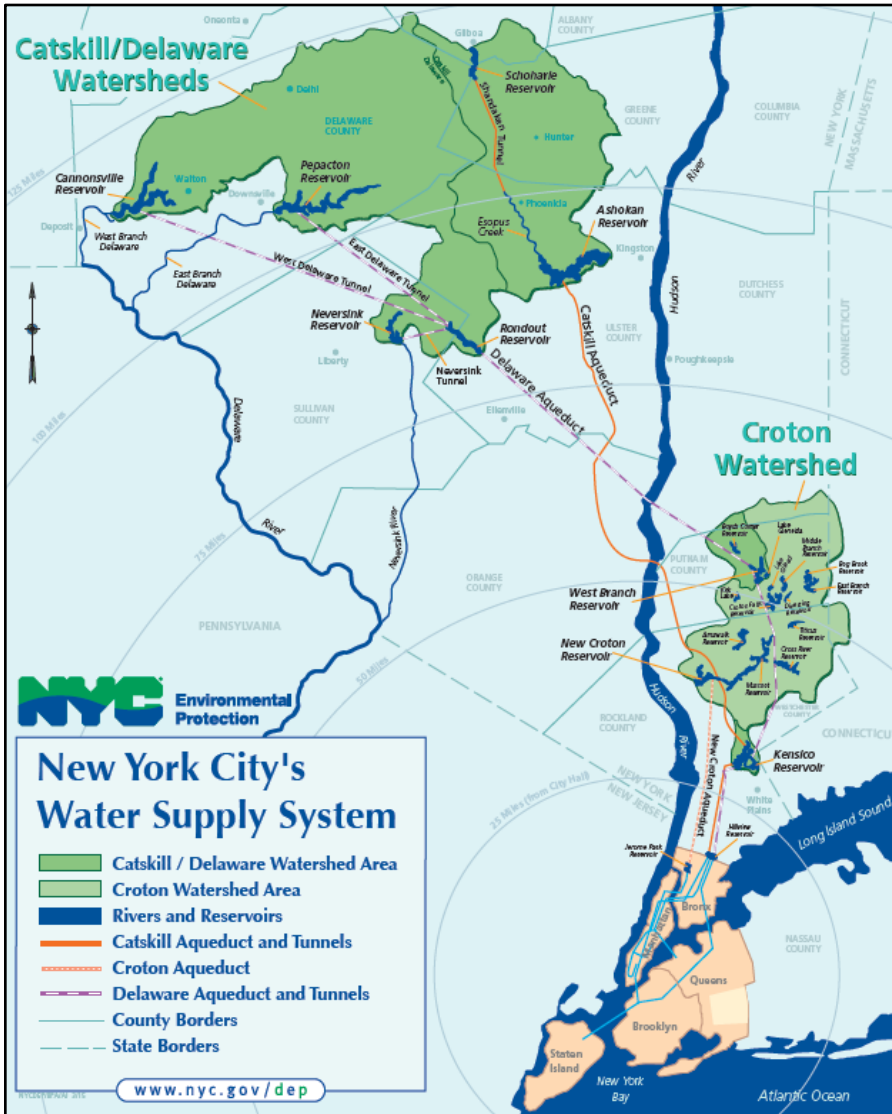
AIR, NOISE, AND HAZARDOUS WASTE

- Enforce the NYC Air Pollution Control Code to reduce local emissions, enforce the NYC Noise Code, and regulate hazardous waste



NYC Water Supply & Wastewater System

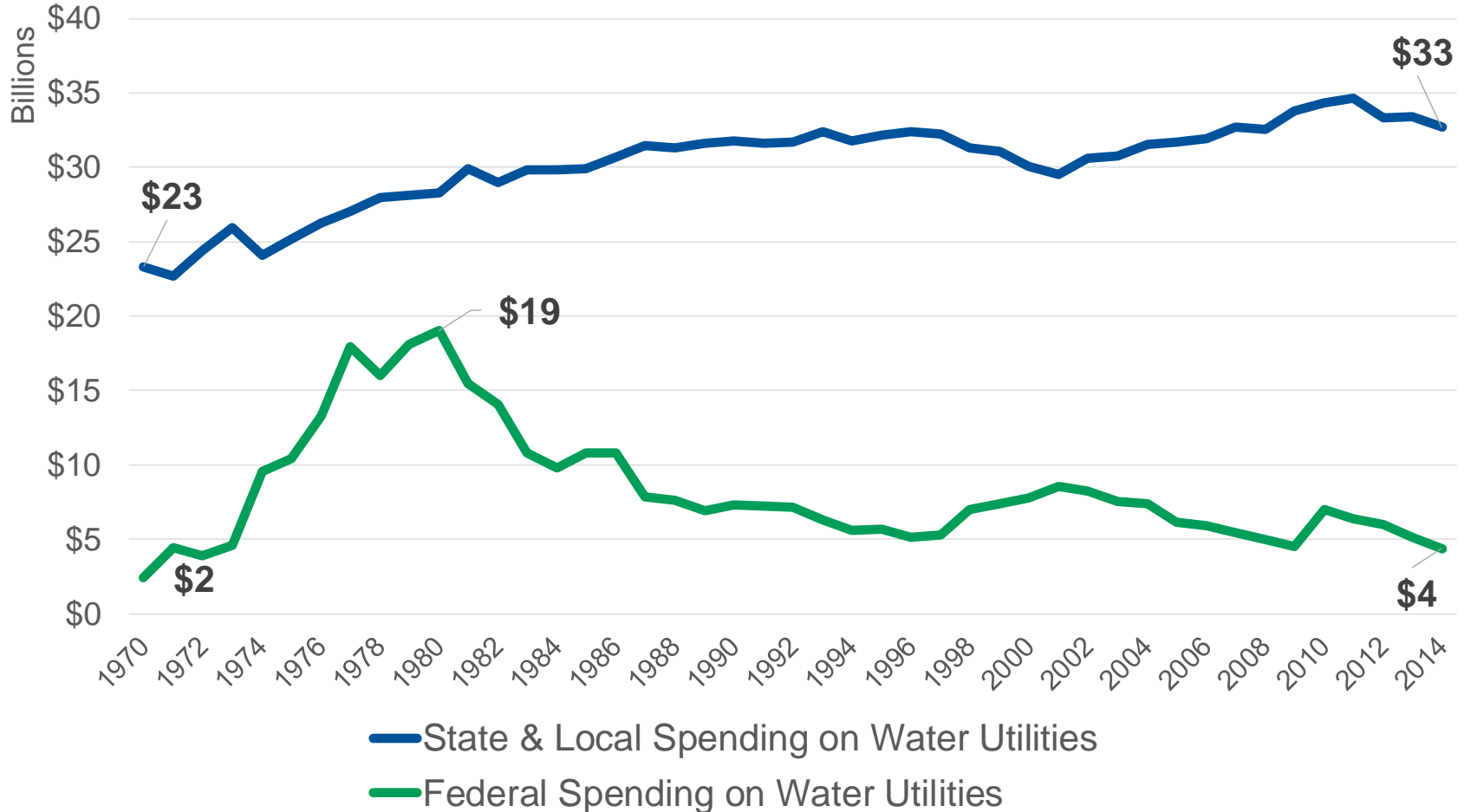
The NYC water supply watershed extends far beyond the city's borders, and wastewater treatment is distributed across 14 plants.





Pressures on Utilities and Customers

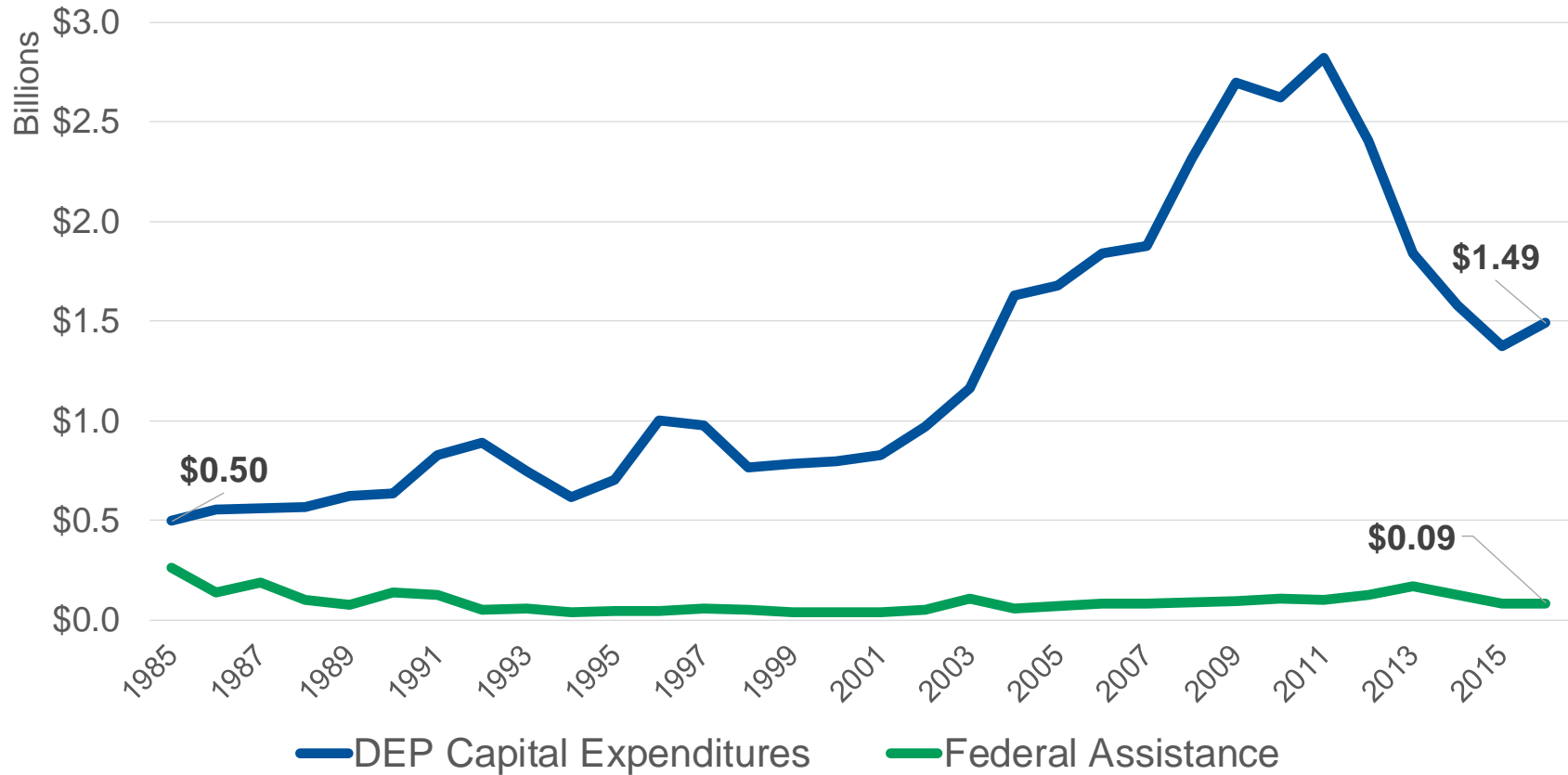
National State & Local Spending vs. Federal Spending on Water Utilities
in 2014 dollars



Source: CBO, Public Spending on Transportation and Water Infrastructure, 1956 to 2014

DEP CapEx and Federal Funding Assistance

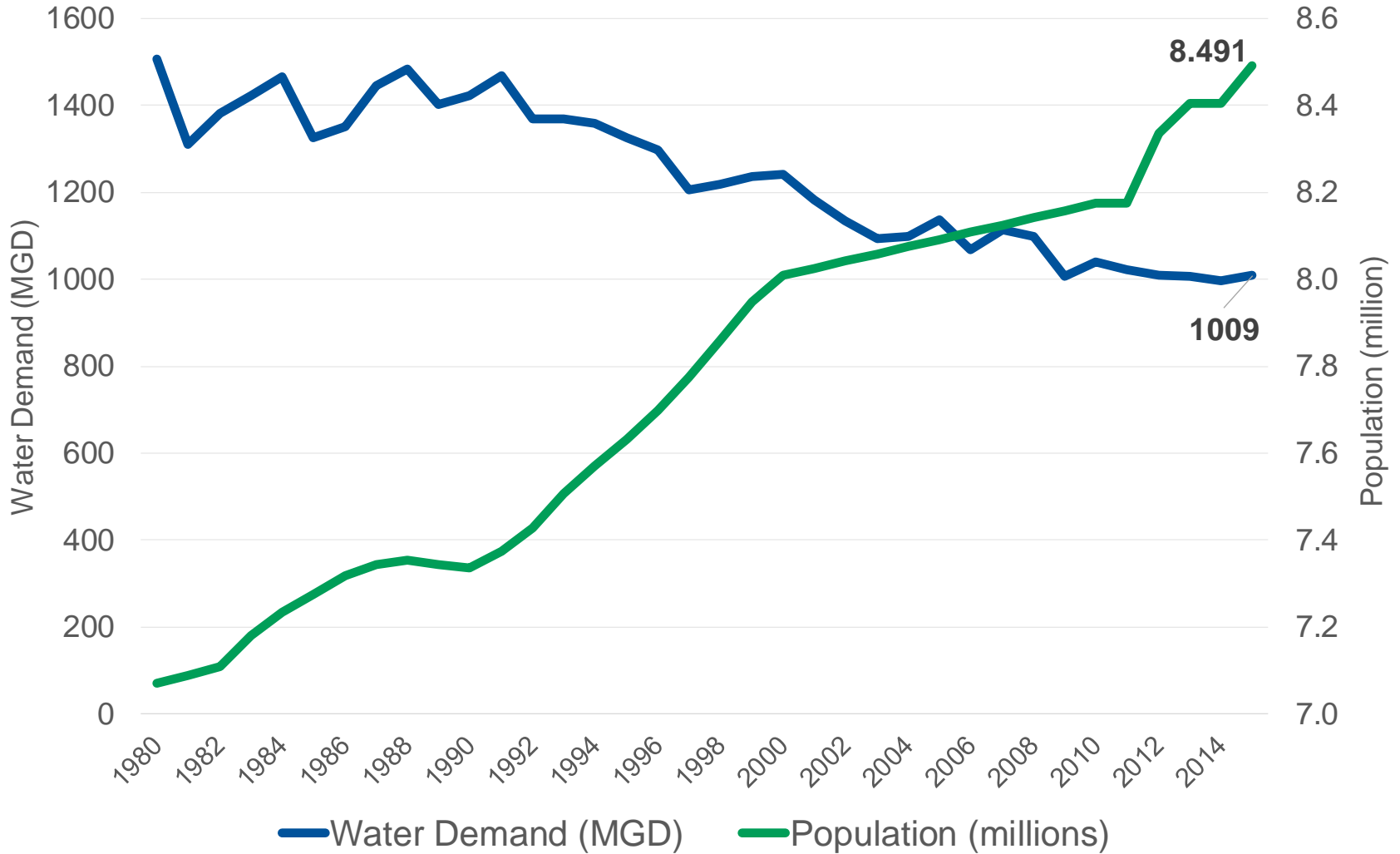
DEP CapEx & Federal Assistance, 1985 – 2016



- In 1985, Federal assistance composed 52% of DEP CapEx
- In 2016, Federal assistance composed 6% of DEP CapEx

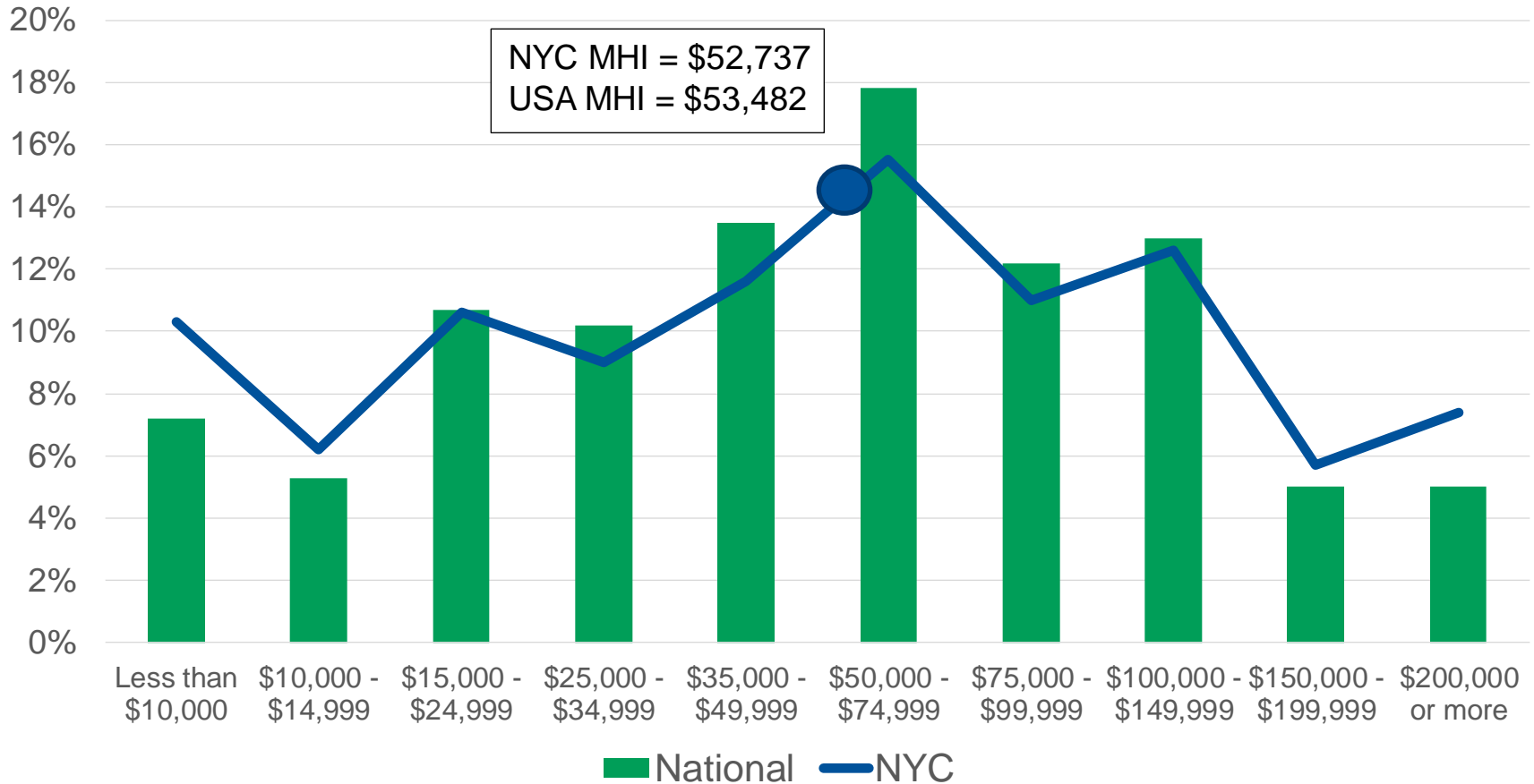
Increasing Population – Decreasing Demand

NYC Population & Water Demand, 1980-2014



Uneven Income Distribution

NYC & National Household Income



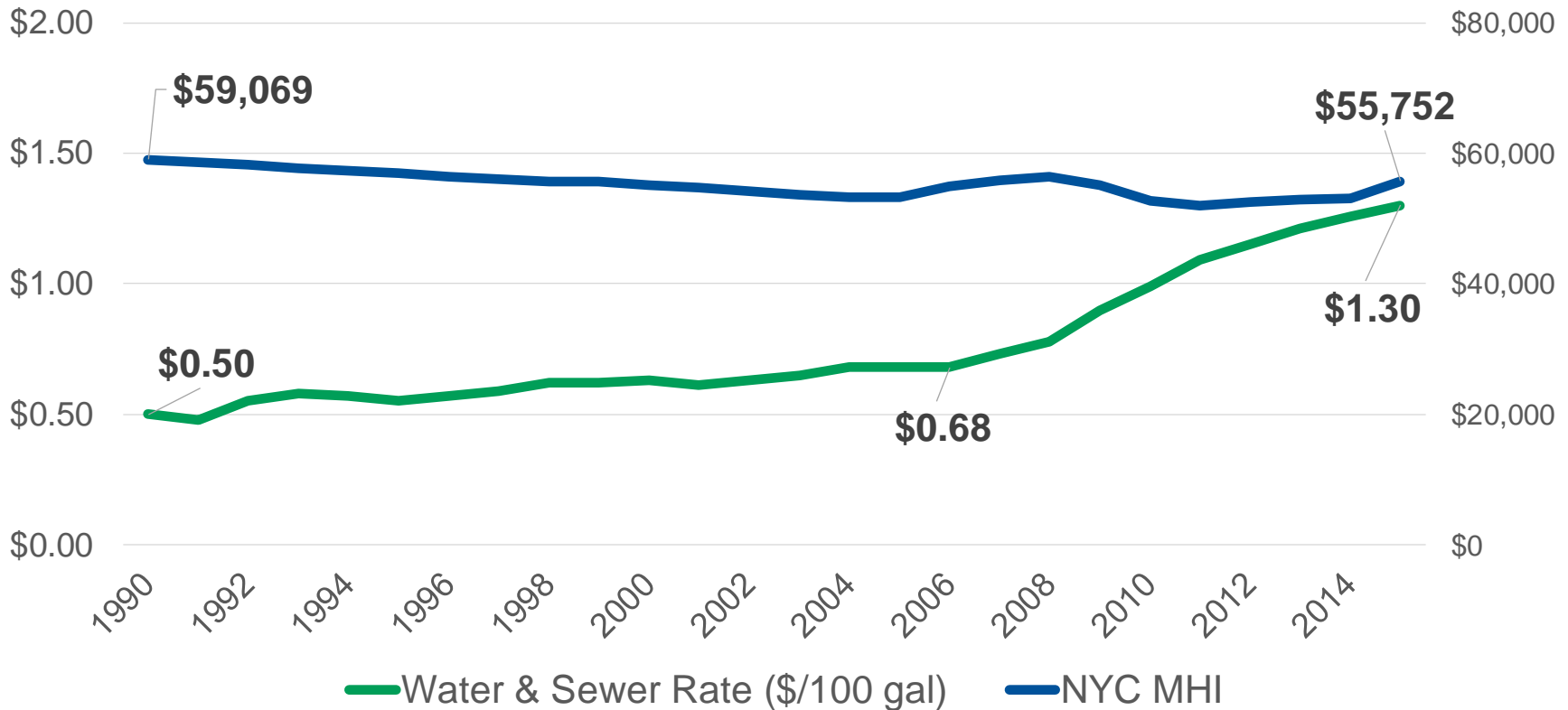
NYC – 27% of the population makes less than \$25,000/year

National – 23% of the population makes less than \$25,000/year

Rising Rates – Stagnant Income

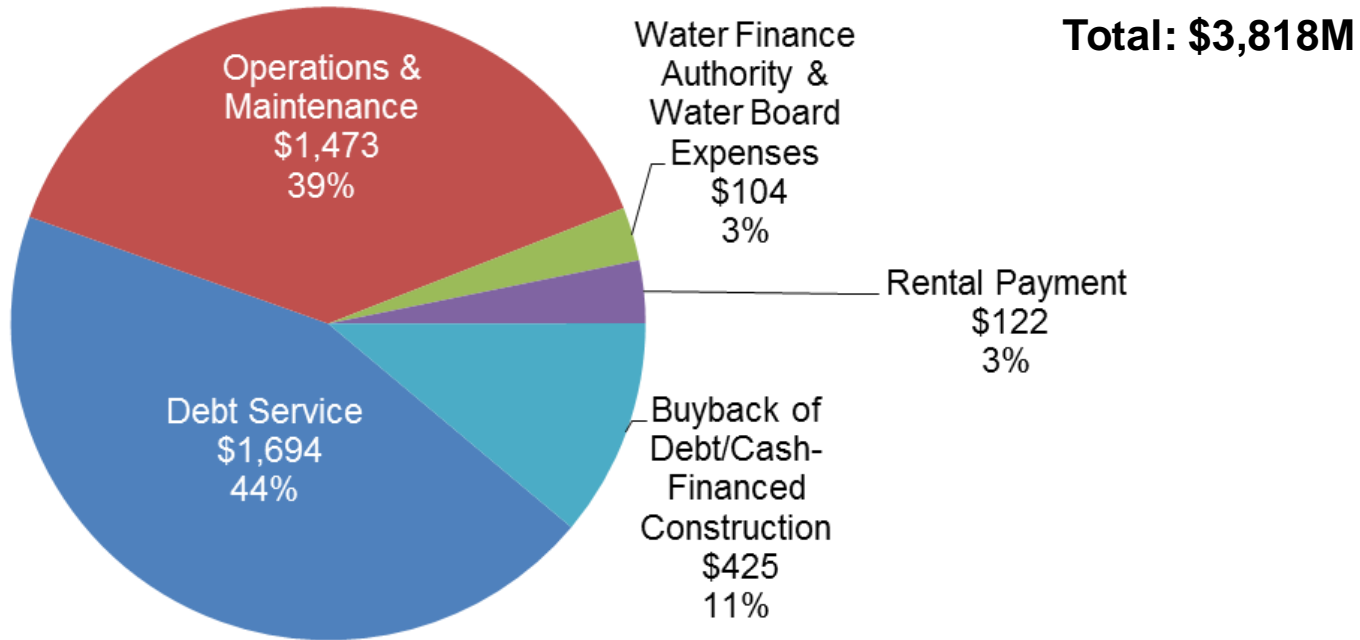
Water & Sewer Rates and MHI, 1990-2016

2016 dollars



- NYC MHI declined by over \$3,300/year, adjusted for inflation
- Rates rose 160%, adjusted for inflation

System and Debt Service Costs, FY16



Total System Costs (\$M)	FY 2017
Debt Service	\$1,694
Buyback of Debt or Cash-financed Capital Construction	\$425
Operations & Maintenance (O&M)*	\$1,577
Rental Payment	\$122
Net Total System Costs	\$3,818

* Operations & Maintenance in the table is the sum of the chart's "Operations & Maintenance Expenses" and "Water Finance Authority & Water Board Expenses"

Legal Mandates cost average homeowners ~ \$255 in FY16

Croton Filtration Plant:

- Cost to NYC = \$3.2 billion
- Cost to homeowner = \$46/year



Catskill/Delaware UV Plant:

- Cost to NYC = \$1.6 billion
- Cost to homeowner = \$23/year

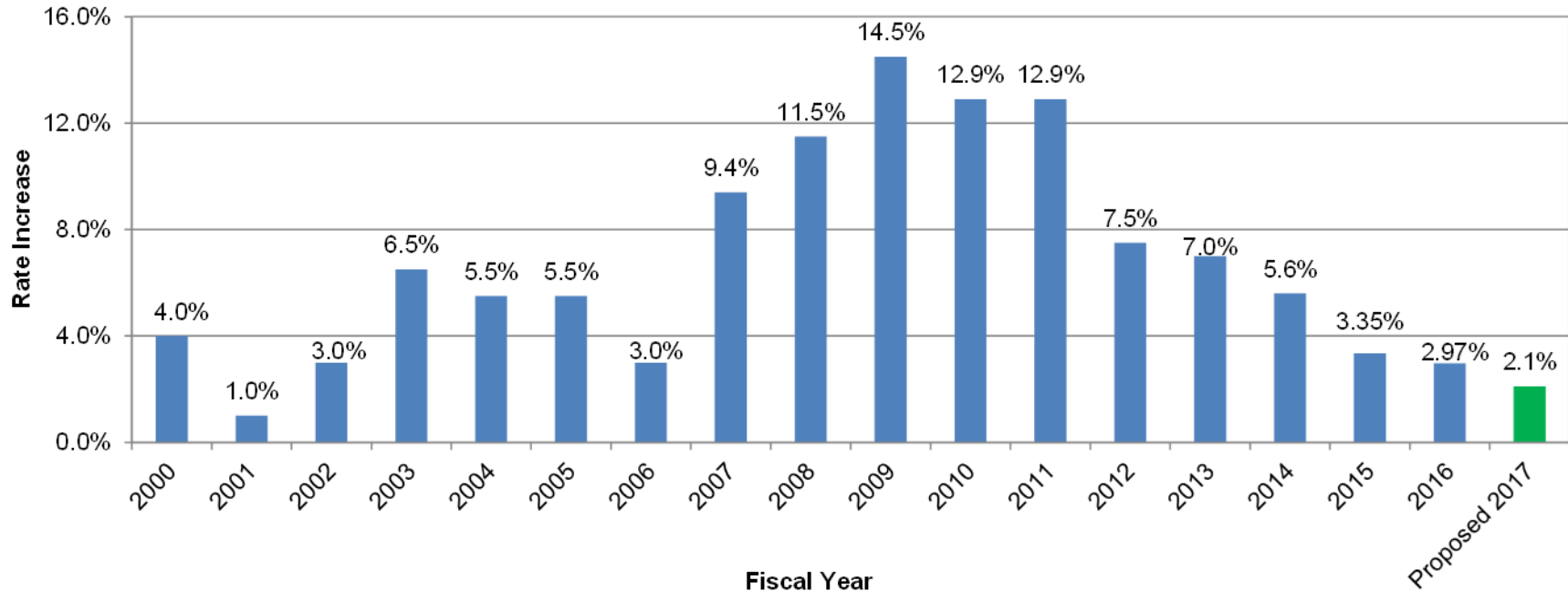


An aerial photograph of a large, winding reservoir nestled in a mountainous region. The water is a deep blue-grey color, reflecting the sky. The surrounding hills are covered in dense green forest. In the foreground, there's a small area with a bright green field, possibly a golf course or a park, and some buildings. The sky is filled with soft, white clouds. The overall scene is serene and natural.

Finding a Sustainable Rate Structure

Raising Rates to Fund Investment

- Proposing 2.1% rate increase in 2017
- Lowest rate increase since FY 2001, 16 years ago



Metered Rates	Proposed FY 2017
Water (per 100 cubic feet)	\$3.89
Wastewater (per 100 cubic feet)	\$6.19
Combined Water & Wastewater (per 100 cubic feet)	\$10.08
Combined Water & Wastewater (per gallon)	\$0.0135

- Filtration Avoidance Determination (FAD)
- 1997 - use land in upstate watersheds to filter water and avoid building a filtration plant
- Voluntary basis (willing buyer / willing seller) – no eminent domain
- Allows DEP to purchase vacant lands or conservation easements to protect open space in perpetuity throughout the watershed.

- FAD costs approximately \$1.5 billion
- **Avoided cost by not building a filtration plant**
\$8 to \$10 billion capital
+ \$100 million/year O&M



Smart Investments – Green Infrastructure

- \$1.5 billion green infrastructure program, will defer grey spending
- Creates green and public space for communities across the city



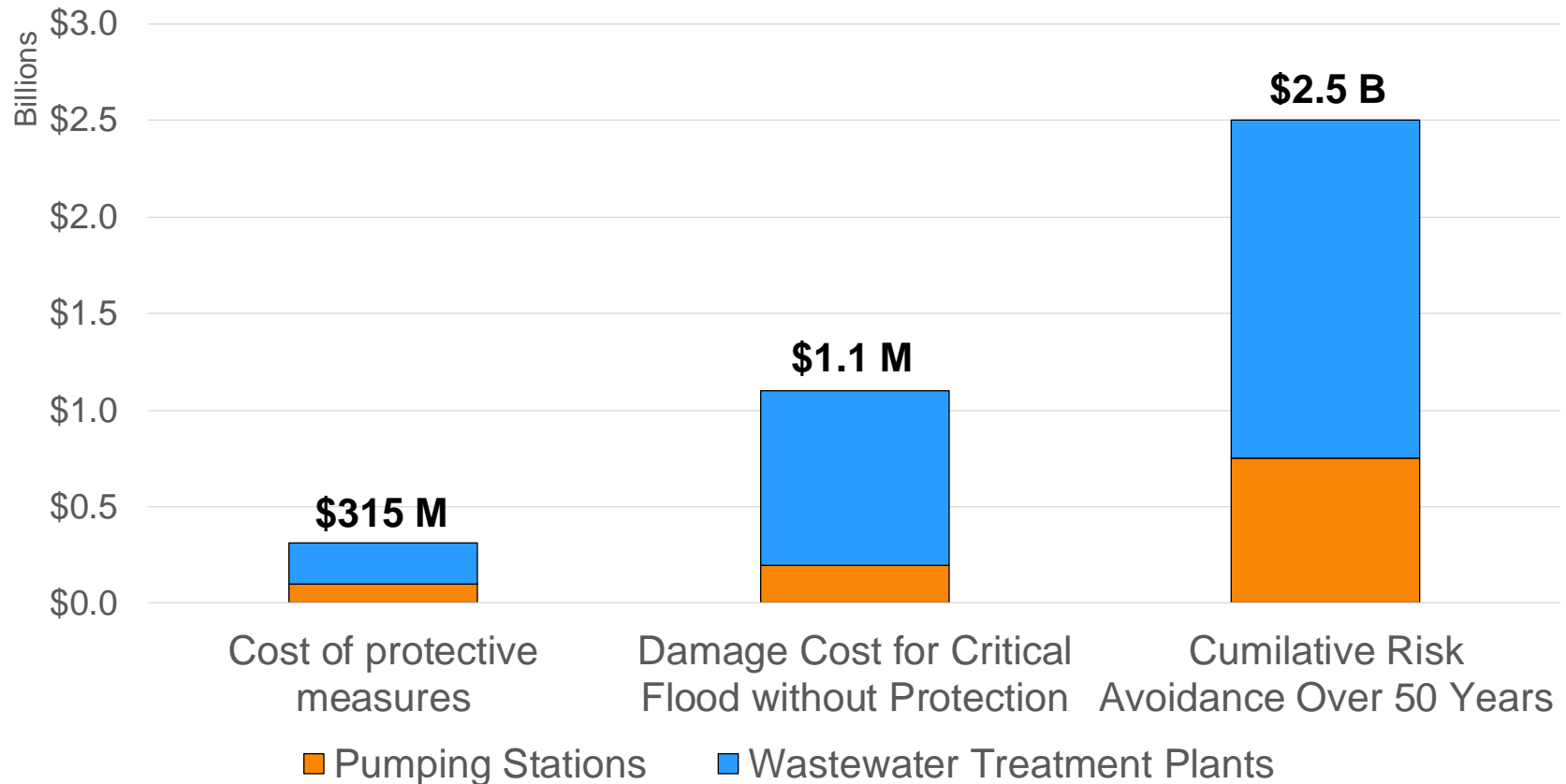
PS 15 after green infrastructure

PS 15 before green infrastructure



Smart Investments - Climate Change

\$1.1 billion of vital infrastructure is at risk. Investing **\$315 million** in construction of strategic fortification can save the City **\$2.5 billion** in emergency response costs over the next 50 years.

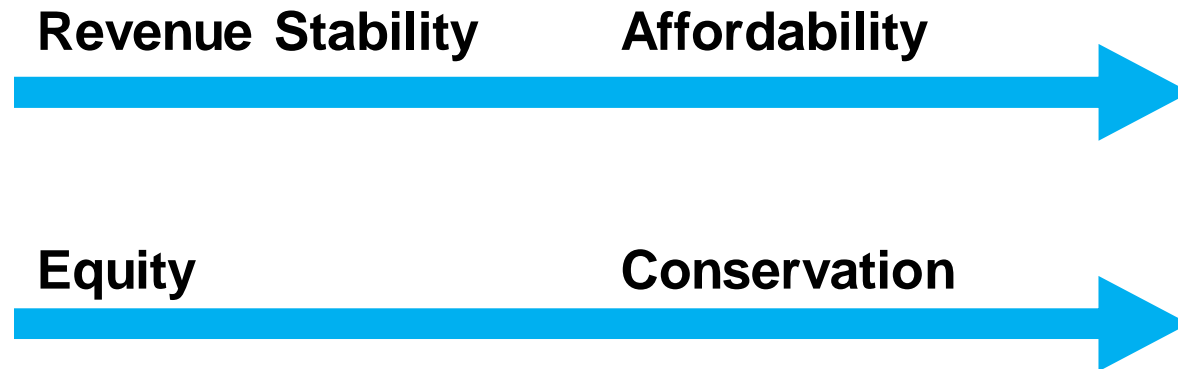


DEP is looking at how we can adapt rate structures to the modern context

Current analysis focuses on:

- Asset Recovery Fee Study
- Stormwater Fee Study

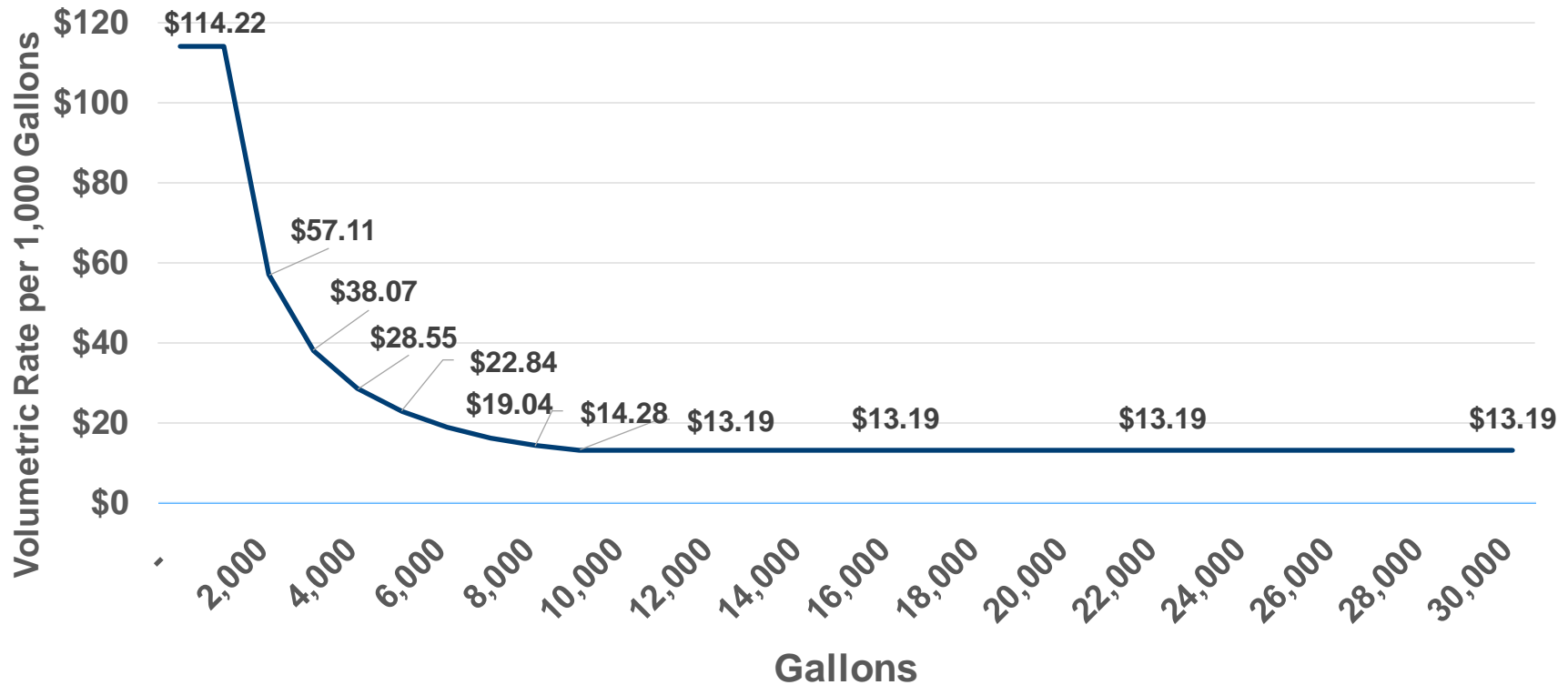
Our Drivers



Fixed Minimum Fees in NYC

- FY16 volumetric rate: \$13.19/1,000 gallons for customers consuming more than 8,640 gallons/quarter
- Customers consuming less than 8,640 gallons/quarter pay a minimum charge
- Minimum quarterly charge: \$114.22 (FY16)

Implied Volumetric Rate per 1,000 gallons



Fixed Fee Study Preliminary Results

Meter Size (Inches)	Percentage of Customers	Current Revenue by Meter Size	Overall Bill Change	Fixed Fee Added to Volumetric Charge
5/8	8%	3%	↓	\$9.05
3/4	51%	21%	↑	\$9.05
1	28%	16%	↓	\$13.57
1 1/2	5%	7%	↑	\$45.23
2	5%	12%	↓	\$72.37
3	1%	9%	↓	\$144.74
4	1%	16%	↓	\$226.16
6	1%	13%	↓	\$1,085.57

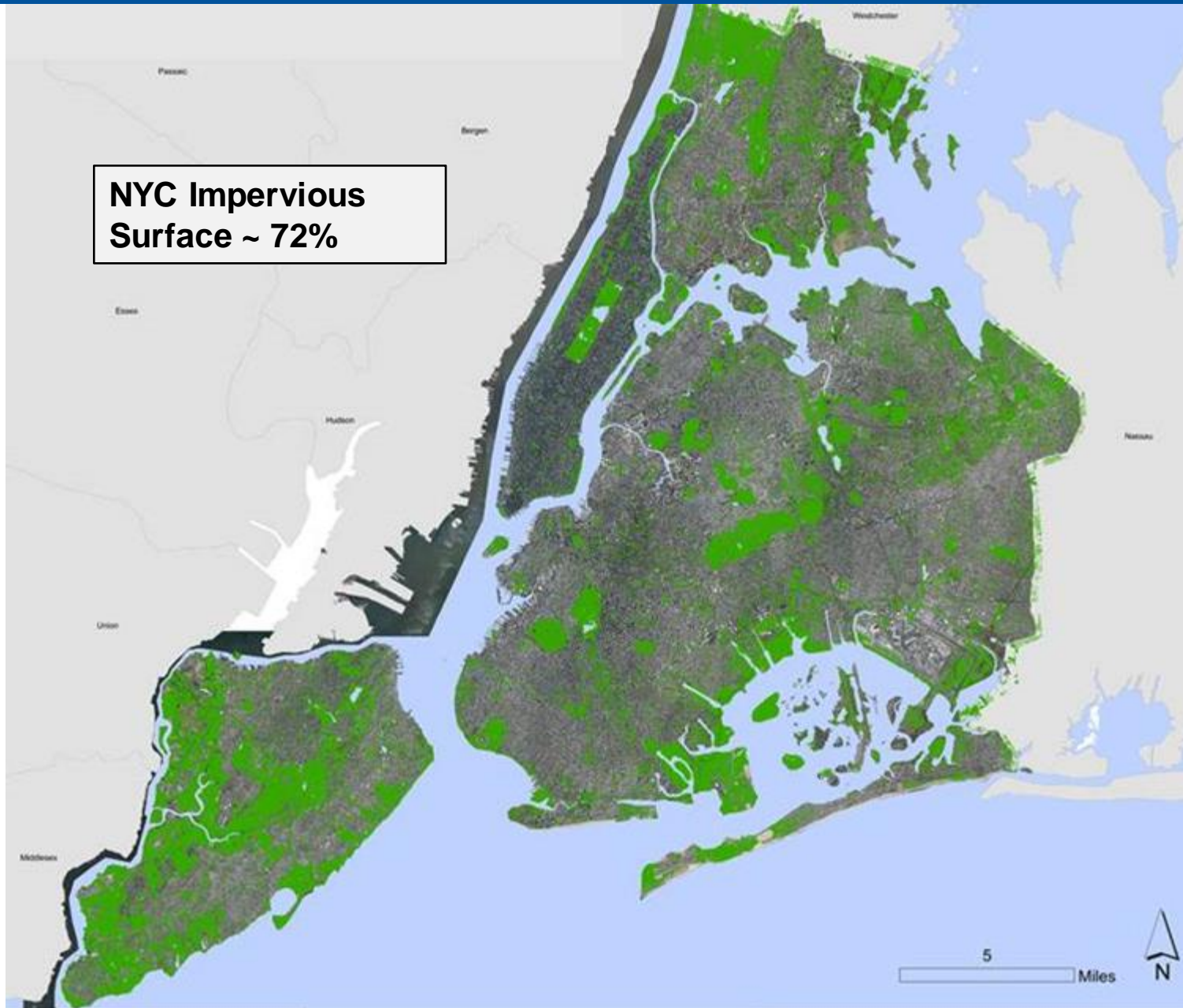
✓ **Stability**

✓ **Affordability**

✓ **Equity**

✓ **Conservation**

Rate Structure Considerations – Stormwater Fee



Opportunities

- Potential additional revenue opportunity to fund capital improvements
- Promote city's sustainability goals (green infrastructure, climate change)
- Incentivize stormwater management through GI and reduction of impervious area

Challenges

- Stakeholder buy-in
- Legal authority
- Integration with DEP billing system
- Resources



Central considerations:

- No regret strategies: customer impacts vs benefits
- Nexus between rate structures, equity and affordability
- Early planning among competing needs
- Stakeholder outreach

Angel Licata
Deputy Commissioner, Bureau of Sustainability
NYC Department of Environmental Protection

