

# The New York State Environmental Facilities Corporation



Energy Management and Funding Sources  
at Water Infrastructure Facilities

SUNY College of Environmental Science and Forestry,  
Syracuse, NY

October 6, 2010

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David Paterson, Governor

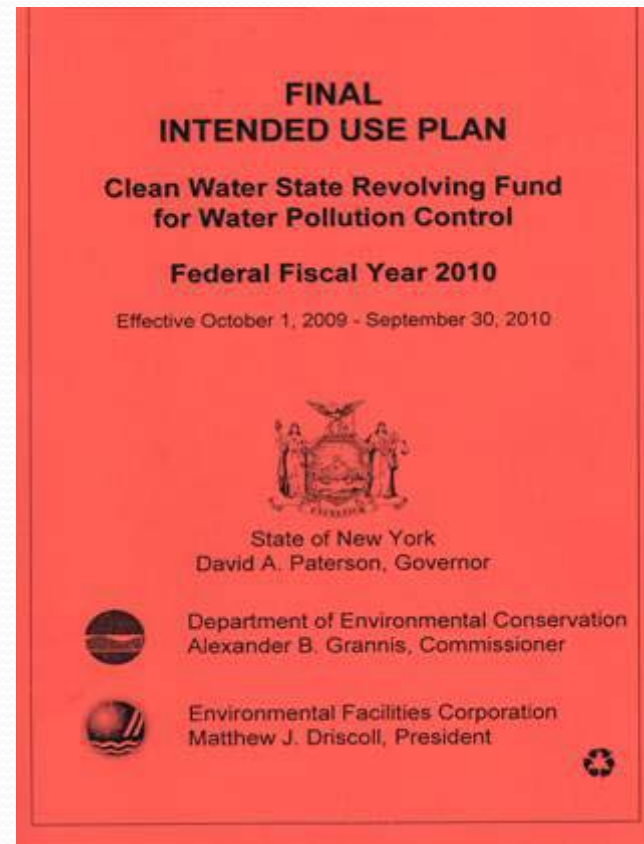
Pete Grannis, Chairman

Matthew J. Driscoll, President & CEO

# The Environmental Facilities Corporation

*Providing Low-cost Financing and Technical Assistance to Municipalities, Businesses, and NY State Agencies for Environmental Projects*

- A Public Benefit Corporation
  - Accountability
  - Transparency
- Clean Water State Revolving Fund (1987 Clean Water Act Amendments)
  - Clean Water Program:  
50% Interest Subsidy
- Drinking Water State Revolving Fund (1996 Safe Drinking Water Act)
  - Drinking Water Program:  
33.3% Interest Subsidy



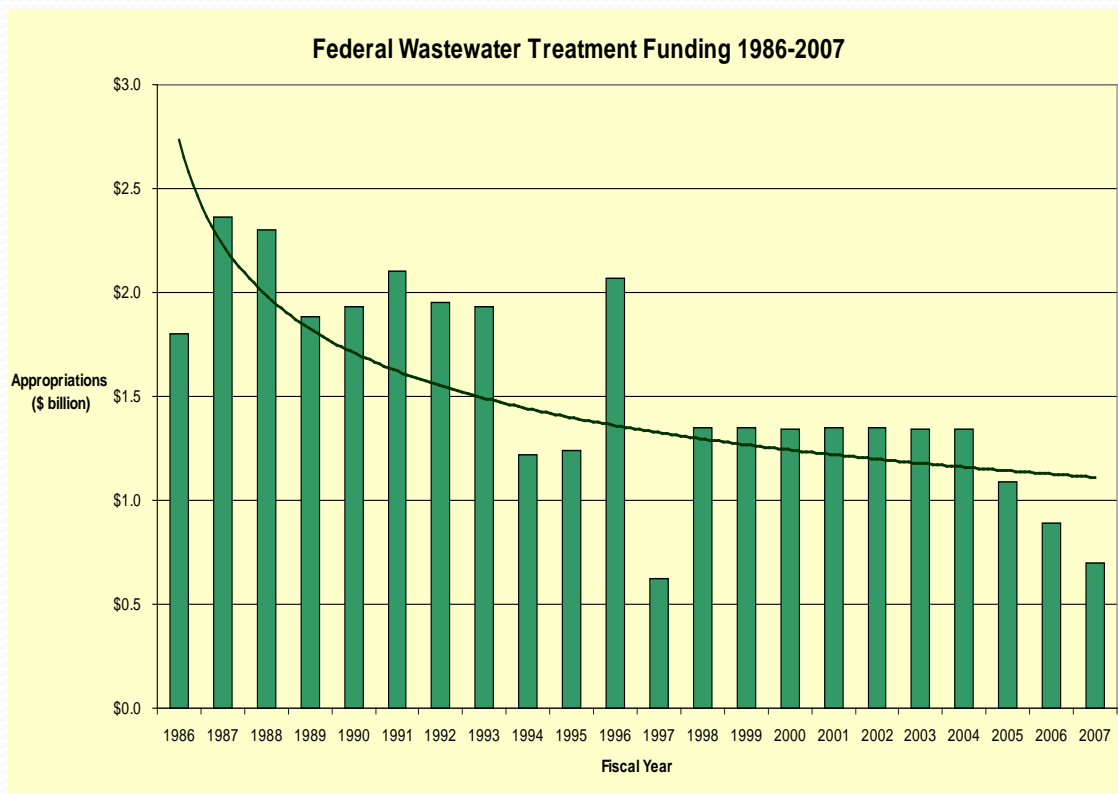
# Brief History of Water Finance

- 1<sup>st</sup> Generation: CWA Construction Grants Program (1972 – 1987)
  - Large Federal grants (75%) Successful – but not sustainable
- 2<sup>nd</sup> Generation: SRF Programs  
CW (1987 – present); DW (1996 – present)
  - Loan program (reduced interest rate)
  - Successful – but not always affordable/feasible/ accessible



# Two Years Ago

- Historic declines in federal funding
- Growing need
  - CW/\$36 Billion: 20 yrs
  - DW: \$38 Billion: 20 yrs
- Threat of defunding by 2011
- Many projects stalled
- Impending water quality declines
- An EPA study estimated that \$335 Billion would be needed simply to **maintain** the nation's drinking water systems in coming decades\*



\*Source: USEPA Drinking Water Infrastructure Needs Survey and Assessment



# National Water and Sewer System Numbers



- 850 Billion gallons of untreated wastewater discharged annually
- 32 years average useful life of water treatment equipment
- \$390 Billion to replace and build new wastewater systems over next 20 years
- \$10,000 per household cost of replacing water mains and treatment plants
- **3% of US electricity demand** accounted for by water systems
- Power is the second largest operational cost for wastewater treatment plants



# What Did We Do About It?



an Water Collaborative

ormation on existing conditions

on & educate the public/lawmakers

a funding priority

e Water Finance Solutions

monstrate communities will “Fix it First and

ments of engineering reports to identify

iciency features

a New Generation of Water Finance.



# Water Finance: The Next Generation



# Our Plan

- 3<sup>rd</sup> Generation = Take the best of both!
  - Loans + Grants
  - Embrace “Green” priorities/ energy efficiency
  - Establish asset management as priority
  - Fair (Not Full) Cost Pricing
  - Continue Federal/State/Local partnerships



# ARRA

The 3<sup>rd</sup> Generation Arrived!

# February 17, 2009



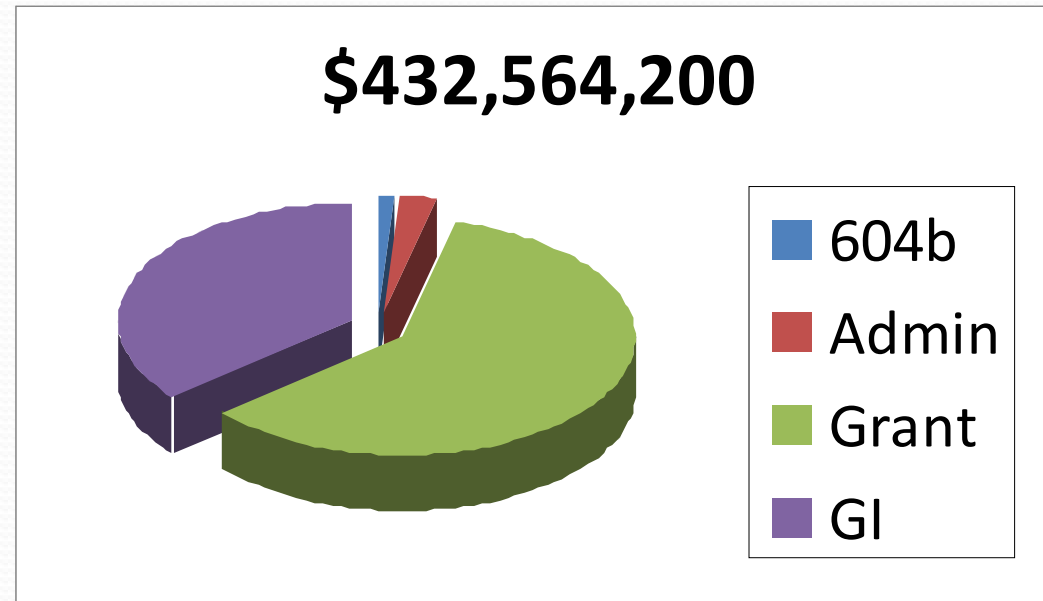
Vice President Joe Biden stands with President Barack Obama as he signs the American Recovery and Reinvestment Act at the Denver Museum of Nature and Science in Denver, Colorado, on February 17, 2009.



# How Did NY Do?

## CWSRF:

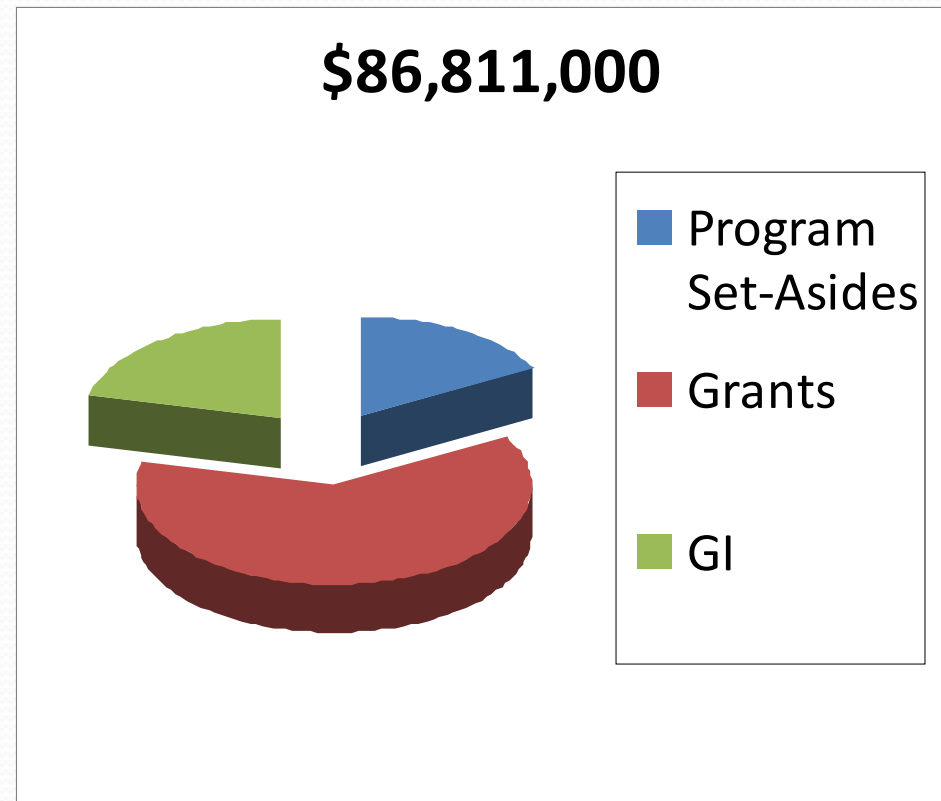
- \$4 Billion Nationally
  - \$11.9 Million CWSRF Admin.
  - \$420 Million in principal forgiveness & grant
  - \$157 Million for “Green” Reserve
  - 80 Projects
  - \$573 Million in Assistance Agreements



# How Did NY Do?

## DWSRF:

- \$2 Billion Nationally
  - \$5.2 Million State Set-Asides
  - \$71 Million in principal forgiveness & grants
  - \$29 Million GI
  - 30 Projects
  - \$141 Million In Assistance Agreements



# Green Project Reserve

*The GPR requires 20 % of clean and drinking water funds be reserved for projects that use innovative approaches to energy, water efficiency, and green infrastructure.*

- Water Efficiency
- Energy Efficiency
- Green Wet Weather Infrastructure
- Environmental Innovation

- EFC created the Green Innovation Grant Program (GIGP) as part of its effort to distribute the GPR portion of the ARRA funds
  - New York was the only State to apply their “green” dollars in this way
  - USEPA awarded the NYS CWSRF the 2009 PISCES Award for this ground-breaking program



# Maximizing Energy Efficiency

The ARRA Experiment



# Wastewater Efficiency Program

- Jointly administered by NYSERDA/EFC
- Promote inclusion of energy efficiency technology in CW infrastructure
- Build off existing NYSERDA's Flex Tech program
- Established Baseline Standard Practices
- Benefits from Regional Greenhouse Gas Initiative (RGGI)



# Typical Savings Measures



- Fine Bubble Diffusers
- Solar Hot Water Panels
- Building Insulation/Lighting
- High Efficiency Motors
- Variable Frequency Drives
- Water Meters  
(CWSRF/DWSRF)
- Reed Bed Sludge Treatment
- Low Pressure/High Intensity UV



# Partnership Dividends

- Award Winning Program
  - Received the "States Stepping Forward: Best Practices for State-Led Energy Efficiency Programs Award" in 2010 from the American Council on an Energy Efficient Economy
- 25 Capital Projects
- RGGI Investment = \$720,000
- EFC obtained EPA approval for \$98 Million in GPR funding for Energy Efficiency improvements (embedded and added)
- 2009 ARRA GPR requirement for NY CW was \$86.5 Million



# Measurable Energy Efficiency Savings

- \$1 of Energy Efficiency evaluation = \$135 in GPR verification
- \$1 of Energy Evaluation = \$3.60 in annual energy savings for CWSRF clients vs. baseline
- 16 Million kWh per year when compared to baseline
- 53,000 MMBTU
- Emissions avoidance/ reductions of 9,700 tons per year of CO<sub>2</sub>



# A Few Examples

## Middletown, NY – Water Treatment Plant Expansion & Upgrade



- ARRA CW Recipient
  - CWSRF Financing: \$27 million
    - ARRA Principal Forgiveness: \$16 million
    - ARRA GPR Funds: \$4.2 million
- Energy-Efficient / Cost-Saving Benefits
  - NYSERDA identified 9 project components to incorporate energy-efficient and cost-saving processes to be funded through the GPR
  - \$421,351 in annual cost savings
  - 3.7 million kWh/yr



# Cayuga County Regional Digester

- Awarded \$6.2 million GIGP ARRA grant
- Anaerobic digester processes:
  - Local manure
  - Agricultural waste
  - Food waste
- Environmental Benefits
  - Generate:
    - over 5 million kWh of electricity annually
  - Reduce:
    - nutrient overloading and runoff
    - potential for pathogens to be released into the environment
    - air pollution and uncontrolled emission of greenhouse gas from manure



# Westcott Reservoir



- Awarded \$753,543 in GIGP ARRA grants
- Microturbine System
  - 3<sup>rd</sup> largest water tanks in the world
  - Expected to generate 438,000 kWh of electricity annually
- Solar Photovoltaic System
  - Expected to produce 56,000 kWh of power annually
- The energy generated from the new systems will allow the facility to operate almost entirely “off-the-grid”



# What Comes Next?

2010 And Beyond

# Life After-ARRA



- 2010 Intended Use Plans
- \$3.5 Billion in Federal appropriations for both SRFs in 2010! Great Accomplishment!
- Green Project Reserve continues – 20% (\$45 million)
- Principal Forgiveness & Grants continues – First time in 20 years for clean water projects
  - Required to distribute at least \$33.7 million
  - EFC allocated maximum amount of \$112.3 million
- Maintain focus on energy efficiency



# 2010 CWSRF IUP Principal Forgiveness

## *For Disadvantaged Communities*

<b>Category</b>	<b>Description</b>	<b>Amount of PF Awarded</b>
A	Populations up to 3,500	\$7.2 million
B	Populations 3,500 – 2 million	\$30.1 million
C	Populations over 2 million (New York City)	\$30 million (all for GPR)
D	Hardship Communities	\$30 million
G	GIGP	\$15 million (all for GPR)
		<b>TOTAL PF: \$112.3 million</b>



# NYSERDA/EFC Take 2

- EFC/NYSERDA continue to partner on energy efficiency effort (Categories A, B & D projects)
  - 38 projects announced in July 2010 worth \$67.2 million in principal forgiveness
  - 100% additional subsidization benefit when energy efficiency study is conducted and implemented
  - No study = max benefit is limited to 80%
- Drive better outcomes vs. pay for energy efficiency improvements



# 2010 CWSRF Category G GIGP Grants

Application period: September 29, 2010 – December 3, 2010

Two types of Grants: \$15 Million available

- **Construction Grants**

- Grant for up to 90% of construction costs, not exceeding \$750,000
- Require complete Engineering Report (treatment plant projects) or concept plan and feasibility report for green infrastructure / stormwater projects at time of application.

- **Design Grants**

- Grant for up to 50% of design costs, not exceeding \$50,000 per project
- Require complete Feasibility Study (treatment plants) or Concept Plan (green infrastructure / stormwater projects) at time of application.

Projects must comply with USEPA 2010 CWSRF GPR criteria

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# Needs Remain Significant

<b>2011 IUPs</b>	<b>Clean Water</b>	<b>Drinking Water</b>	<b>Total</b>
President's Budget	\$2 Billion	\$1.3 Billion	\$3.3 Billion
Funds Available in NY	\$1.1 Billion	\$390 Million	\$1.49 Billion
Project Demand	\$6.9 Billion	\$3.9 Billion	\$10.8 Billion
Projects Listed on IUP	683	685	1368



# Raising The Bar



- Fighting to Maintain Federal Funding At Current Levels
- RGGI Benefit Continues
- Reward Fix-It-First/Build-It-Better....Require later?
- Update Design Standards
  - March 2010 NYSERDA Best Practices Handbook
- Enhance Scoring System/Drive Sustainable Solutions

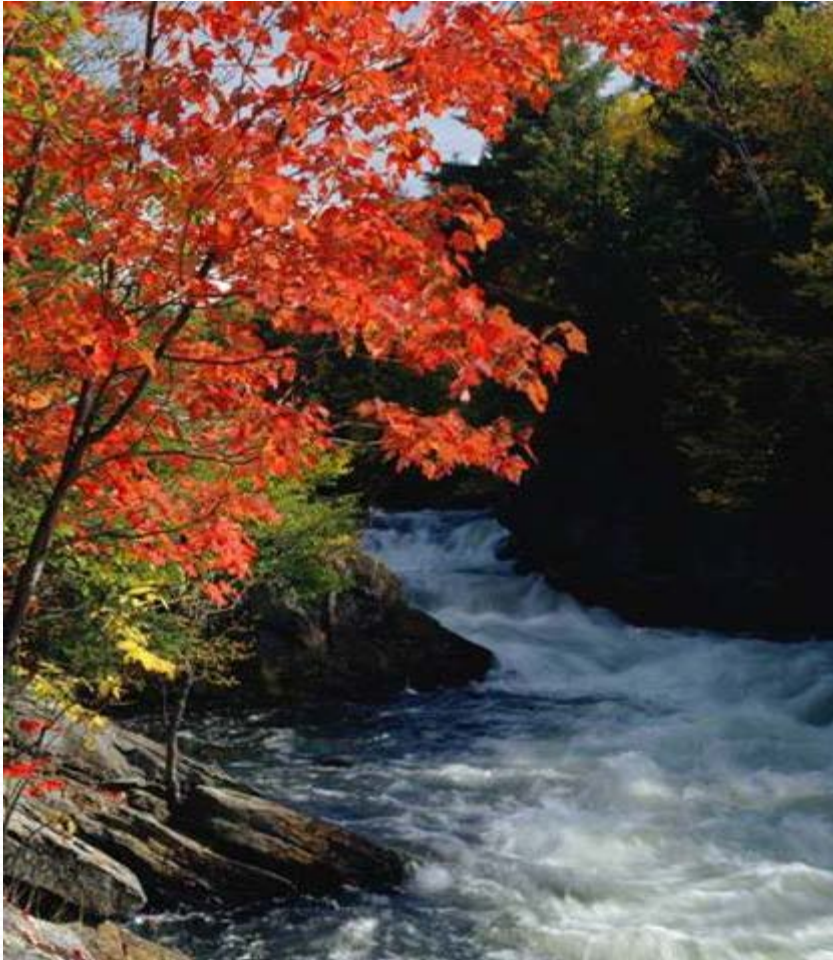


# What About My Community?

- List Your Project on the Annual IUP  
(need technical/engineering report)
- Develop Strong Plan for Energy Efficiency,  
Smart Growth and Asset Management
- Consider Other Green Innovations (Stormwater)
- Thank Congressional Delegation/Ask To Sustain  
Funding



# In Conclusion



- Green technologies are here to stay
- The bar will continue to rise
- Energy efficiency provides multiple benefits to residents
- NYSERDA/LIPA/EFC/NYPA will continue to collaborate
- Significant competition for funding
- Call for Technical Assistance
  - 1-800-882-9721



# Stay Informed

[www.nysefc.org](http://www.nysefc.org)

## Email

- Receive immediate notice of new and updated funding opportunities, programs, and initiatives

## SRF Newsletter

- Sign up to receive EFC's quarterly newsletter

## Webcasts

- Join EFC live to discuss important issues





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*Financing for a Sustainable Future*

