

Gresham's Infrastructure: Financing a Sustainable Future

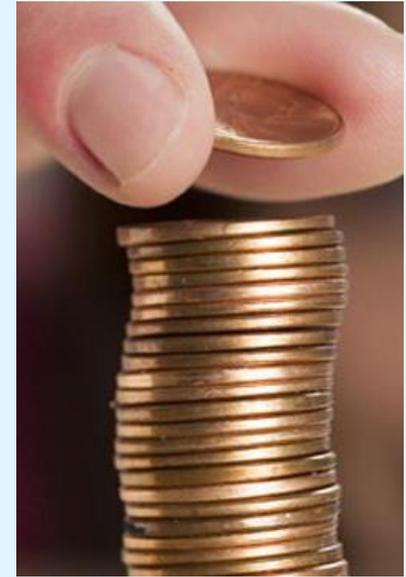
Steve Fancher, PE
City of Gresham Public Works Director

Water Finance Forum
March 31, 2016



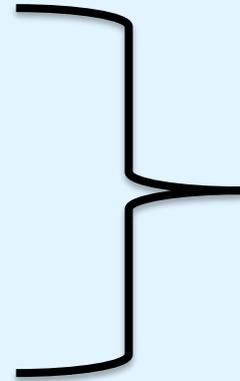
Topics

- Funding Gresham's water utilities
- Case study: Path to energy net zero wastewater treatment
- Gresham's other sustainable infrastructure projects
- Final thoughts on funding, financing, and rate politics



Gresham's Water Utilities

- Drinking Water
- Wastewater
- Stormwater

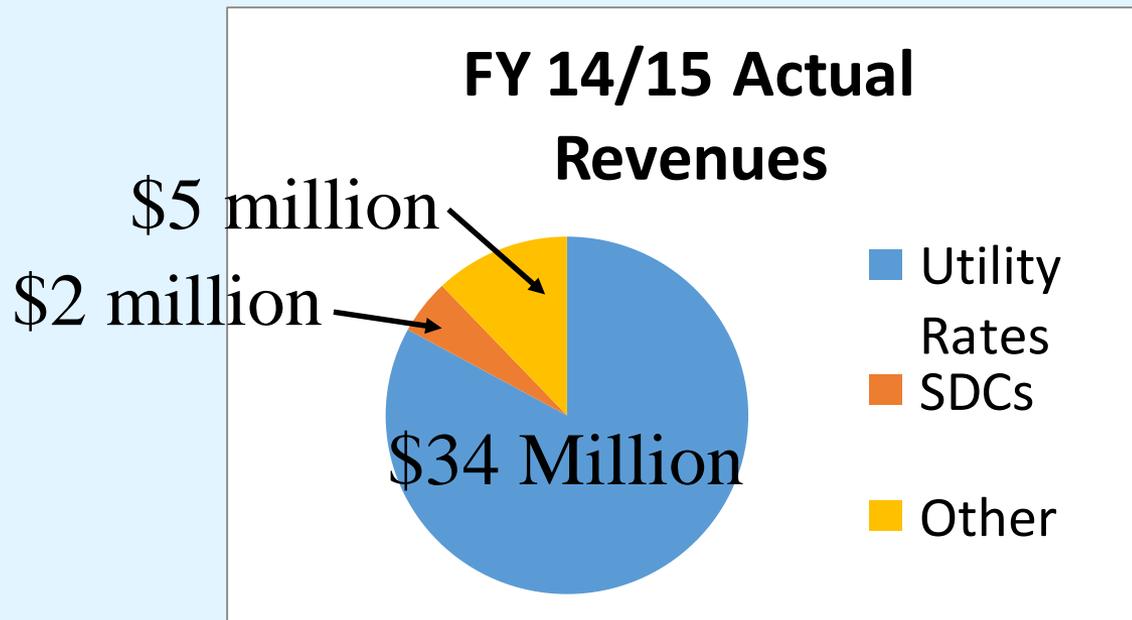


“Water Resources”



Funding Gresham's Water Utilities

- Rates (water bill)
- System Development Charges (SDCs)
- Grants
 - Few opportunities for water utility work



Gresham's Average Monthly Water Utility Rates

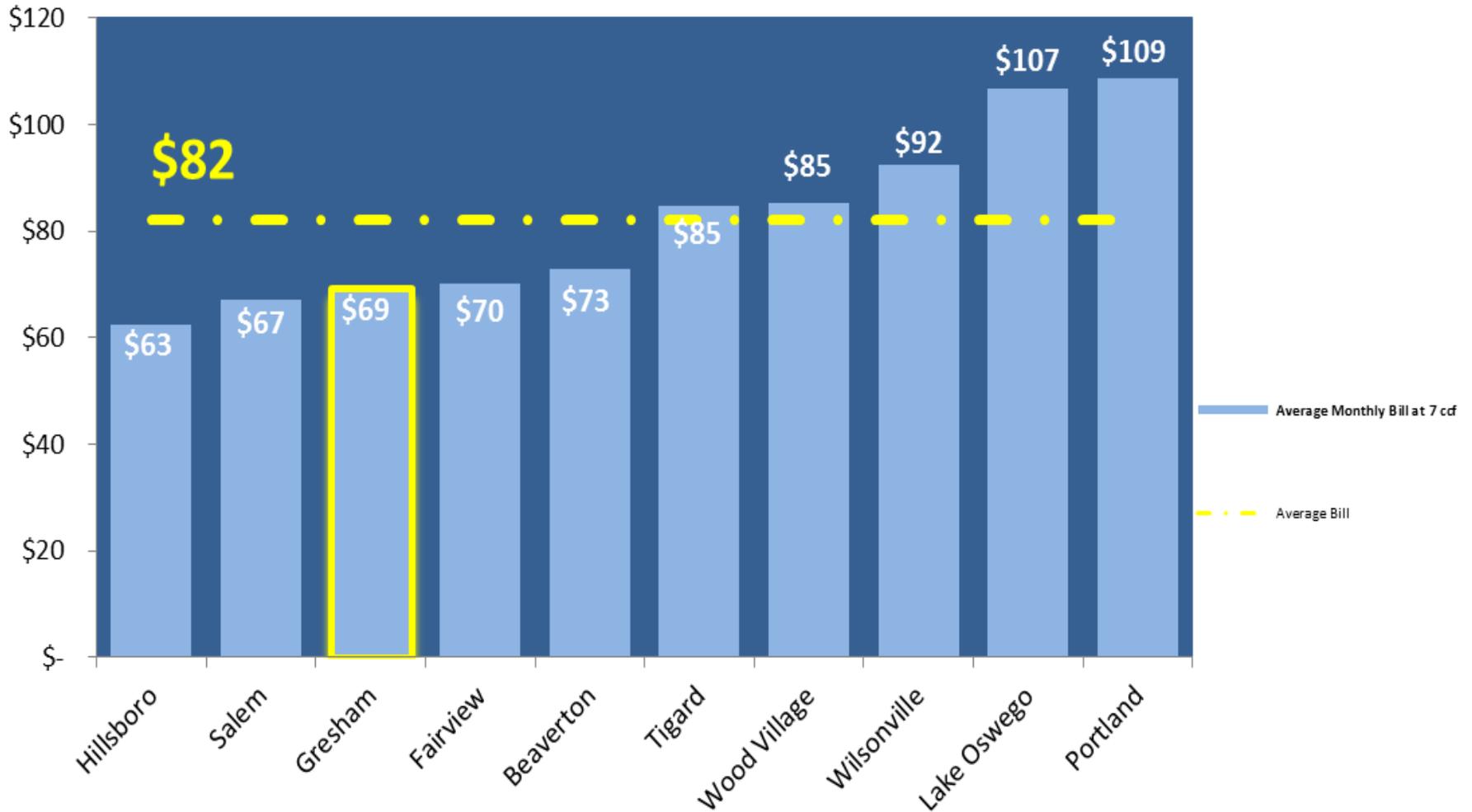
Water:	\$35.63
Wastewater:	\$28.73
<u>Stormwater:</u>	<u>\$10.54</u>
Total =	\$74.90



AVERAGE MONTHLY RATE- ALL 3 WATER UTILITIES

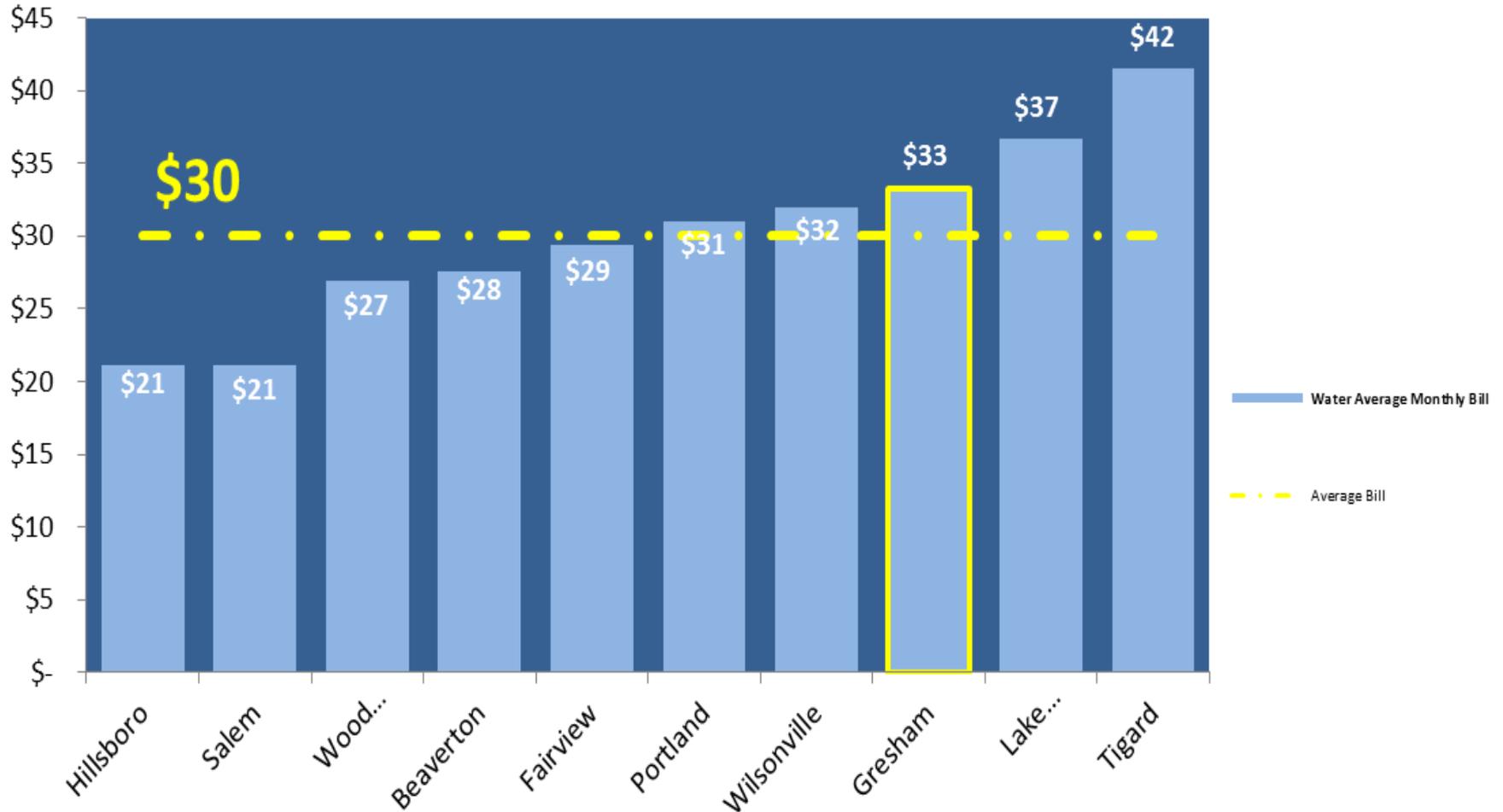
2014 Average Monthly Residential Utility Bill

all three utilities



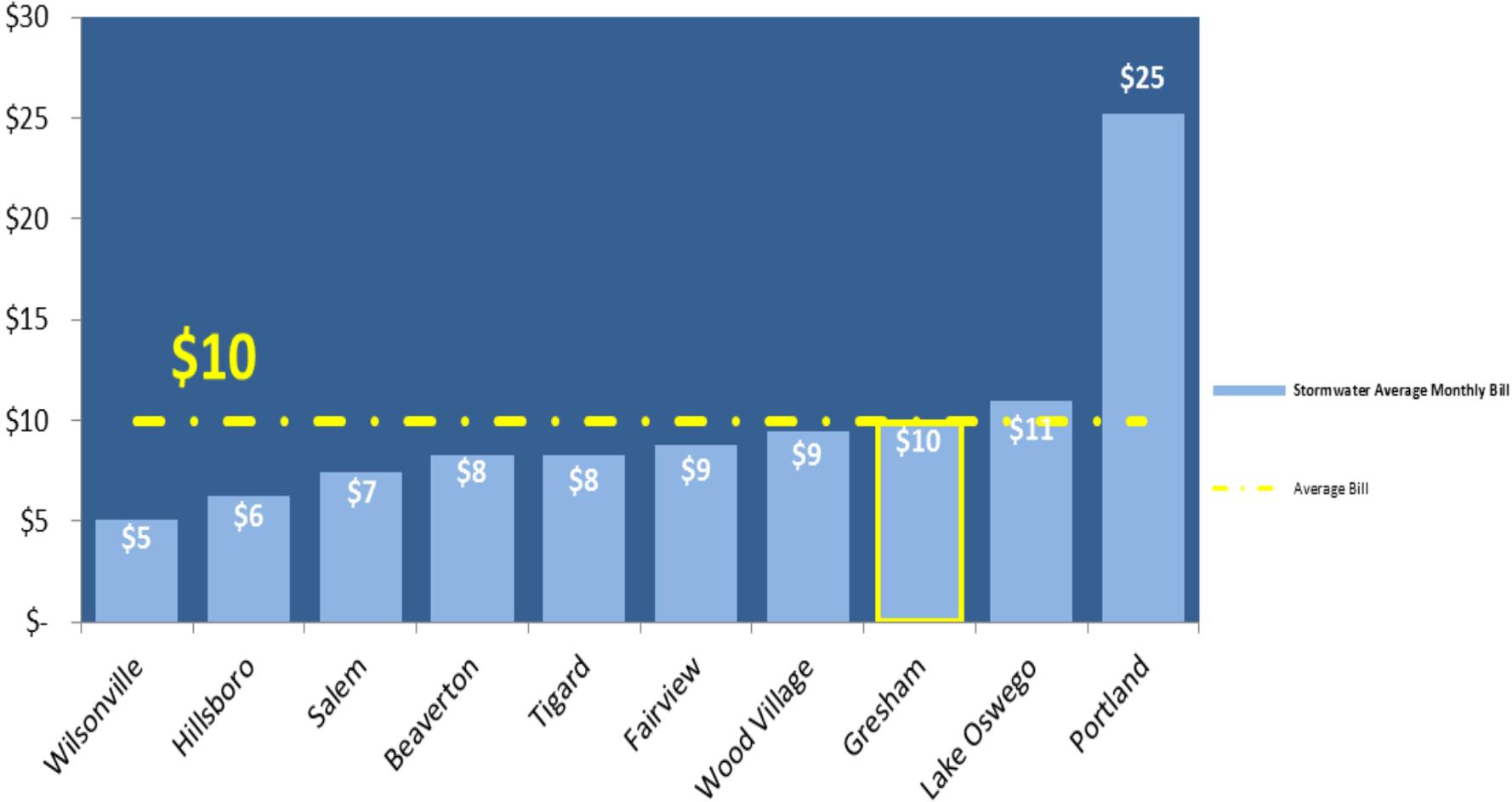
AVERAGE MONTHLY RATE- DRINKING WATER

Average Monthly Water Bill - Residential



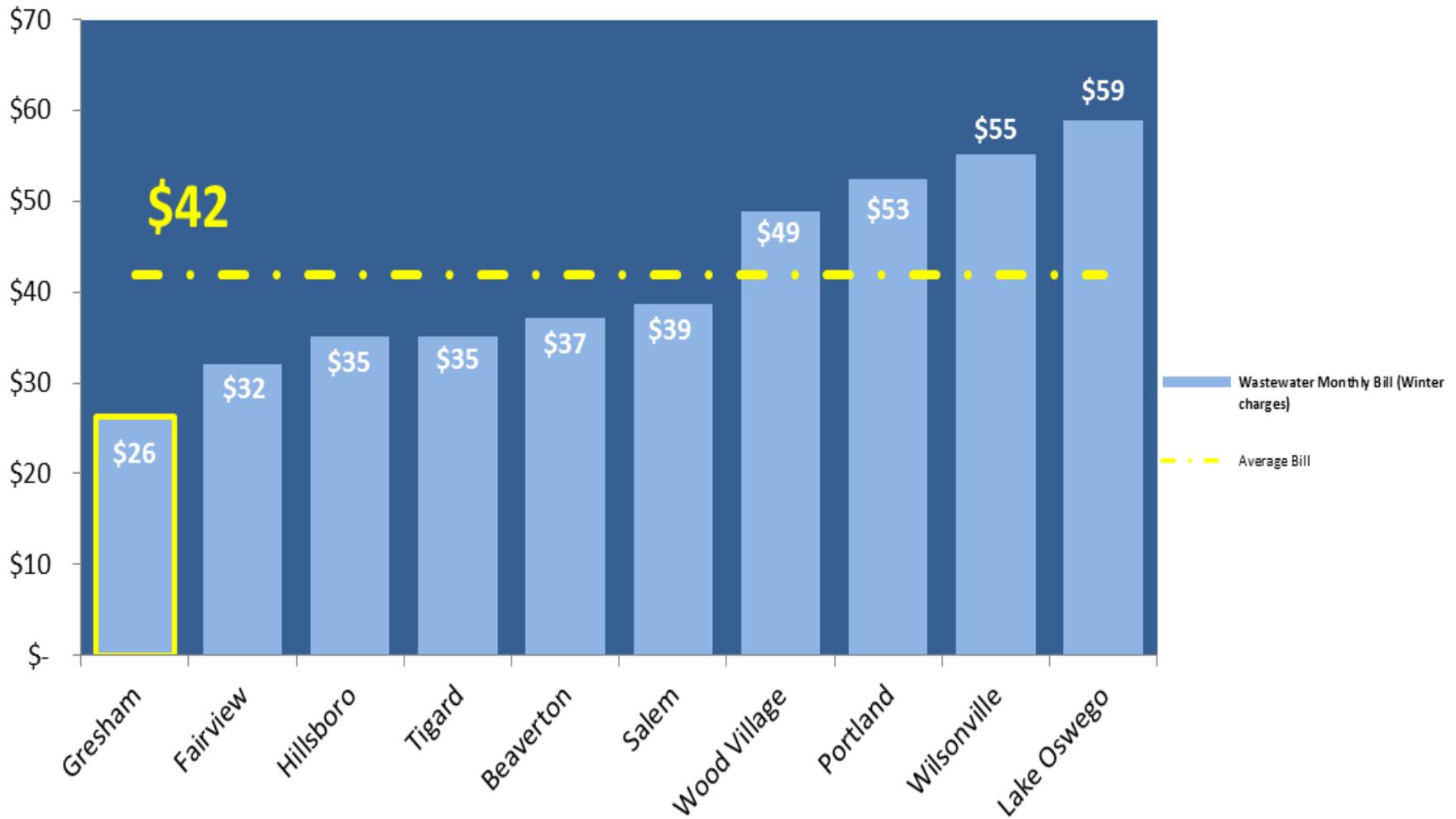
AVERAGE MONTHLY RATE- STORMWATER

Average Monthly Stormwater Bill - Residential



AVERAGE MONTHLY RATE- WASTEWATER

Average Monthly Wastewater - Residential



Case Study: Path to Energy Net Zero Wastewater Treatment



Gresham's Wastewater Treatment Plant

- 114,000 service population
- 13 million gallons per day average flow
- Secondary, activated sludge, anaerobic digestion
- Discharge to the Columbia River
- 20 employees (17 Veolia Water and 3 City)
- One of a few Energy Net-Zero plants in the U.S.



2005: Gresham's New Era of Energy Production

- New 400kw co-generator installed
- Fueled with biogas from digesters
- Produces electrical power- 50% of the plant's use
- Total project cost: \$1,130,000, ETO \$82k, BETC \$288k



2009: 420 kw Solar Array Installed

- 420 kW peak capacity
- Provides 7% of WWTP power
- 1+ acre ground-mounted system
- Power Purchase Agreement with SunEdison
- PGE net metering agreement
- No capital cost to City
- kwh charge = 2/3rd PGE rate, fixed annual escalation of 3%



2012 Energy Conservation Project



New high efficiency Neuros blowers and aeration diffusers

Gas mixing (80 hp) was replaced by Linear Motion Mixers (5 hp each)



Linear Motion Mixer

2012 Fats, Oils, and Grease Receiving Station

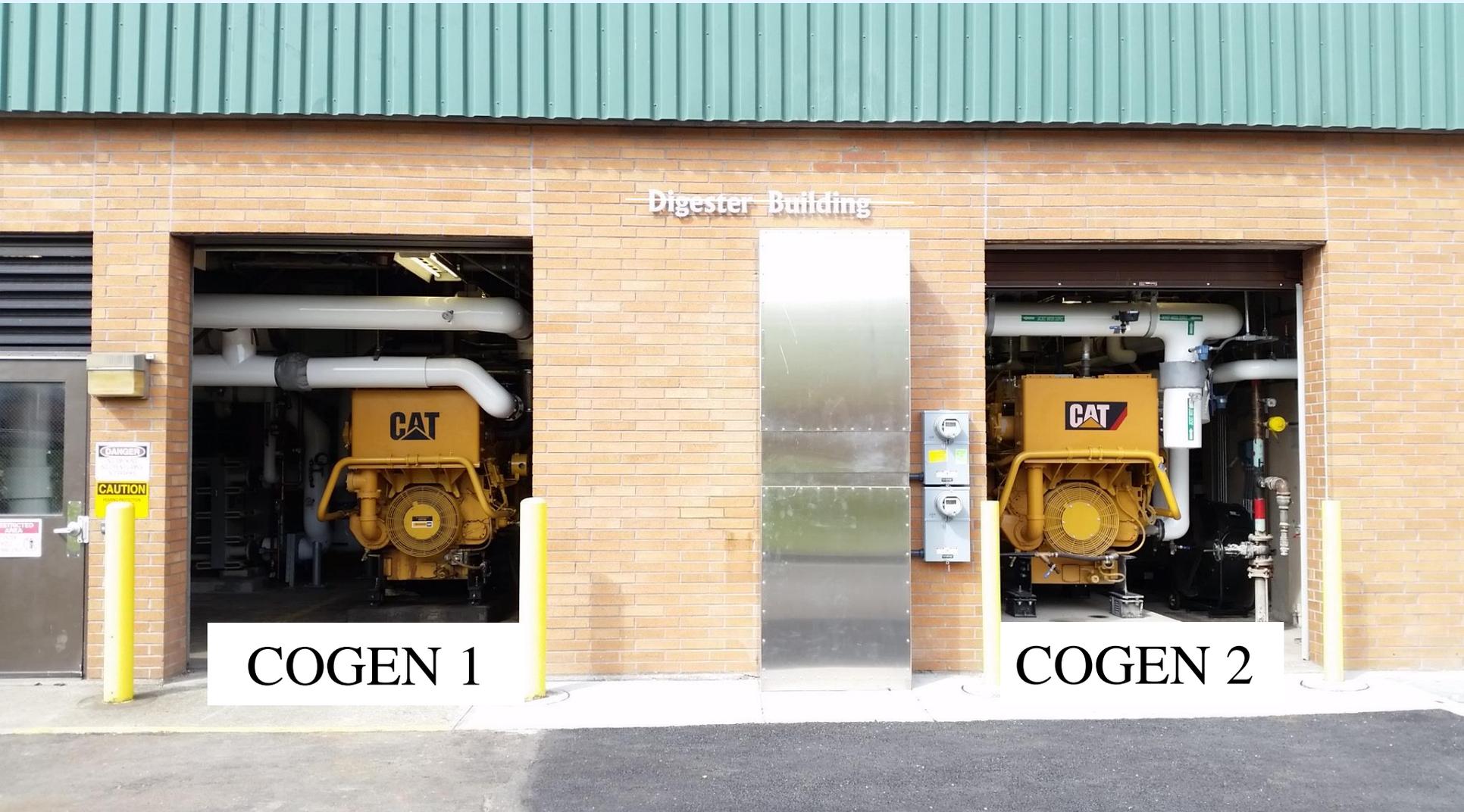


- Increases biogas production
- Generates tipping fee revenue
- Reduces cost of disposal
- Better for the environment

2013 2nd FOG Tank Added



2015: 400 kW Co-Generator #2



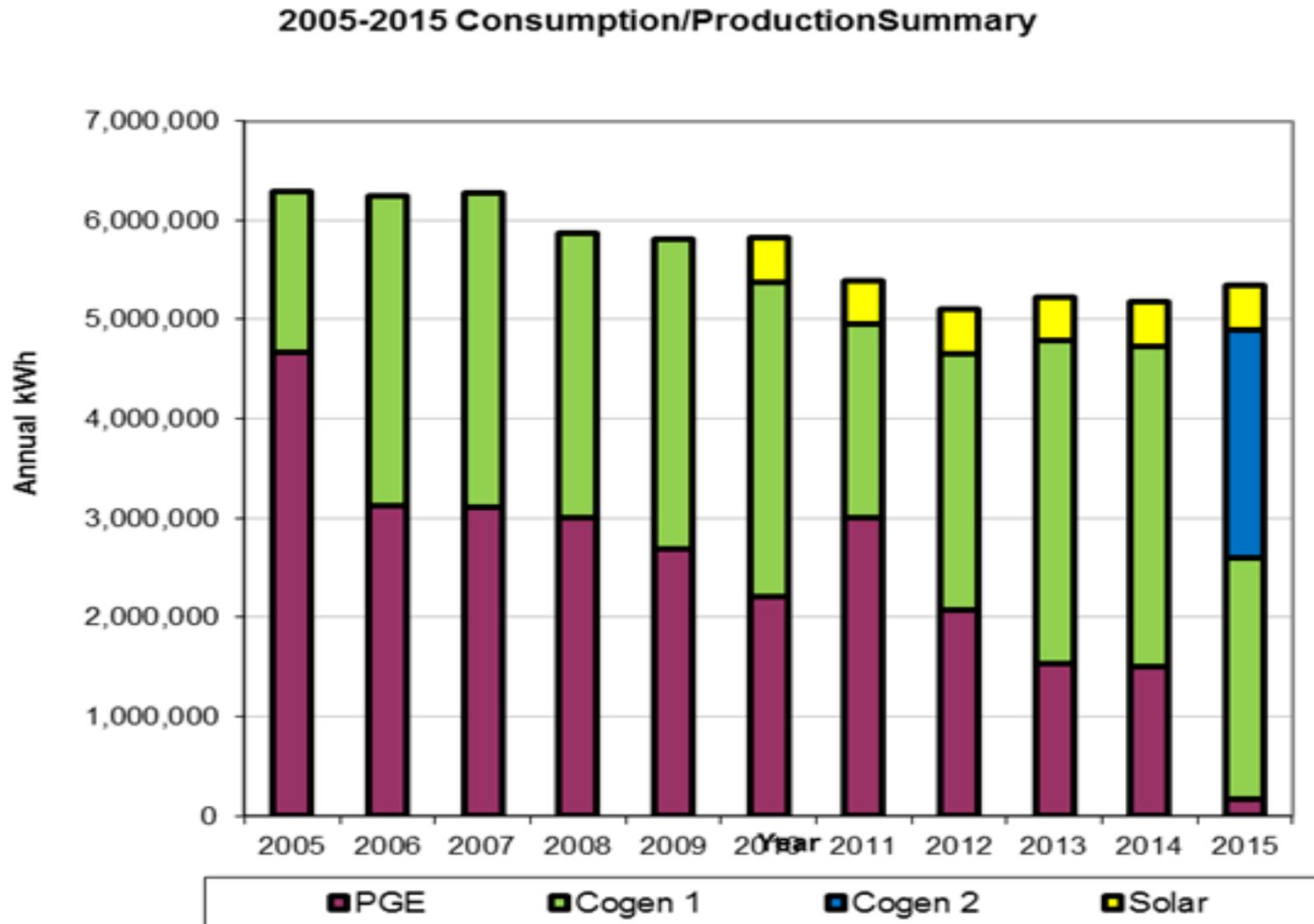
COGEN 1

COGEN 2

2015 “Net Zero” Celebration & Media Event

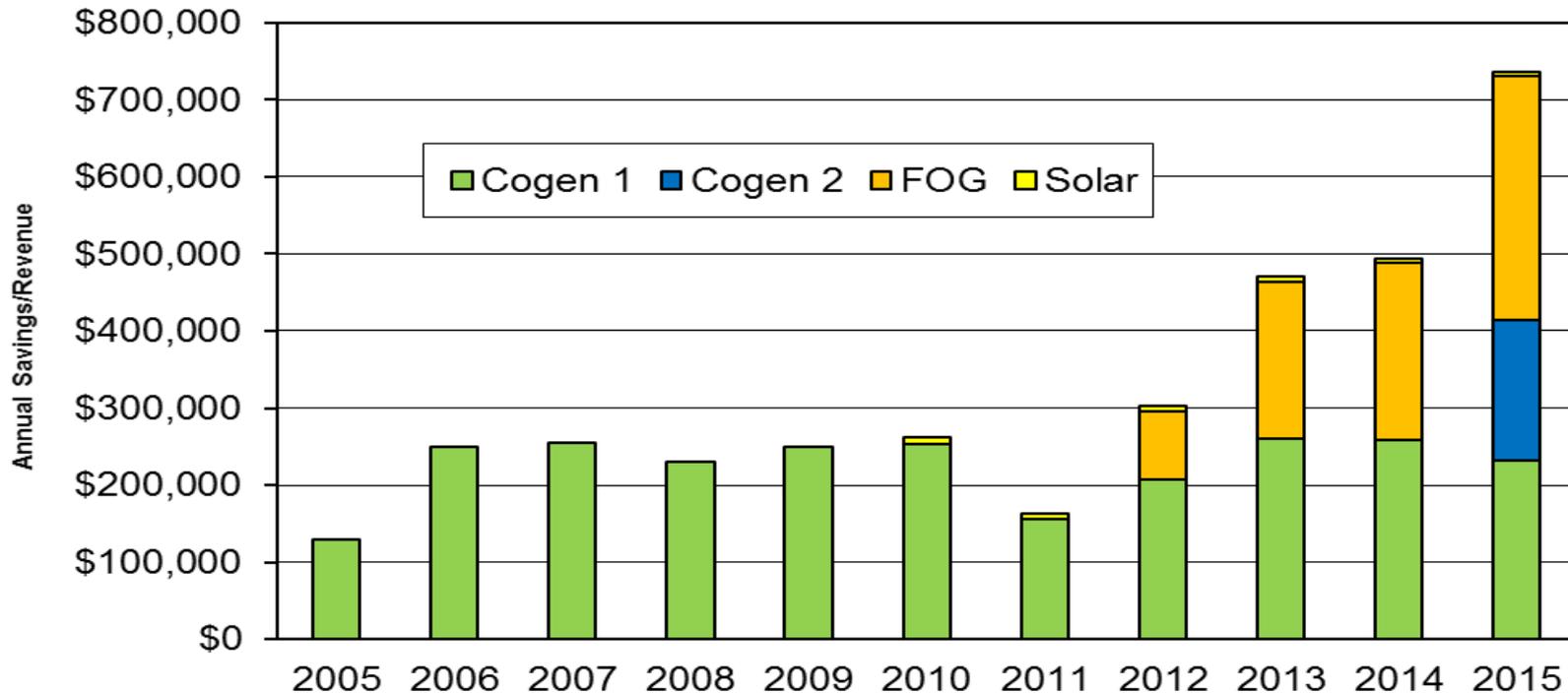


Treatment Plant Energy Trend Since 2005



Annual Cost Savings

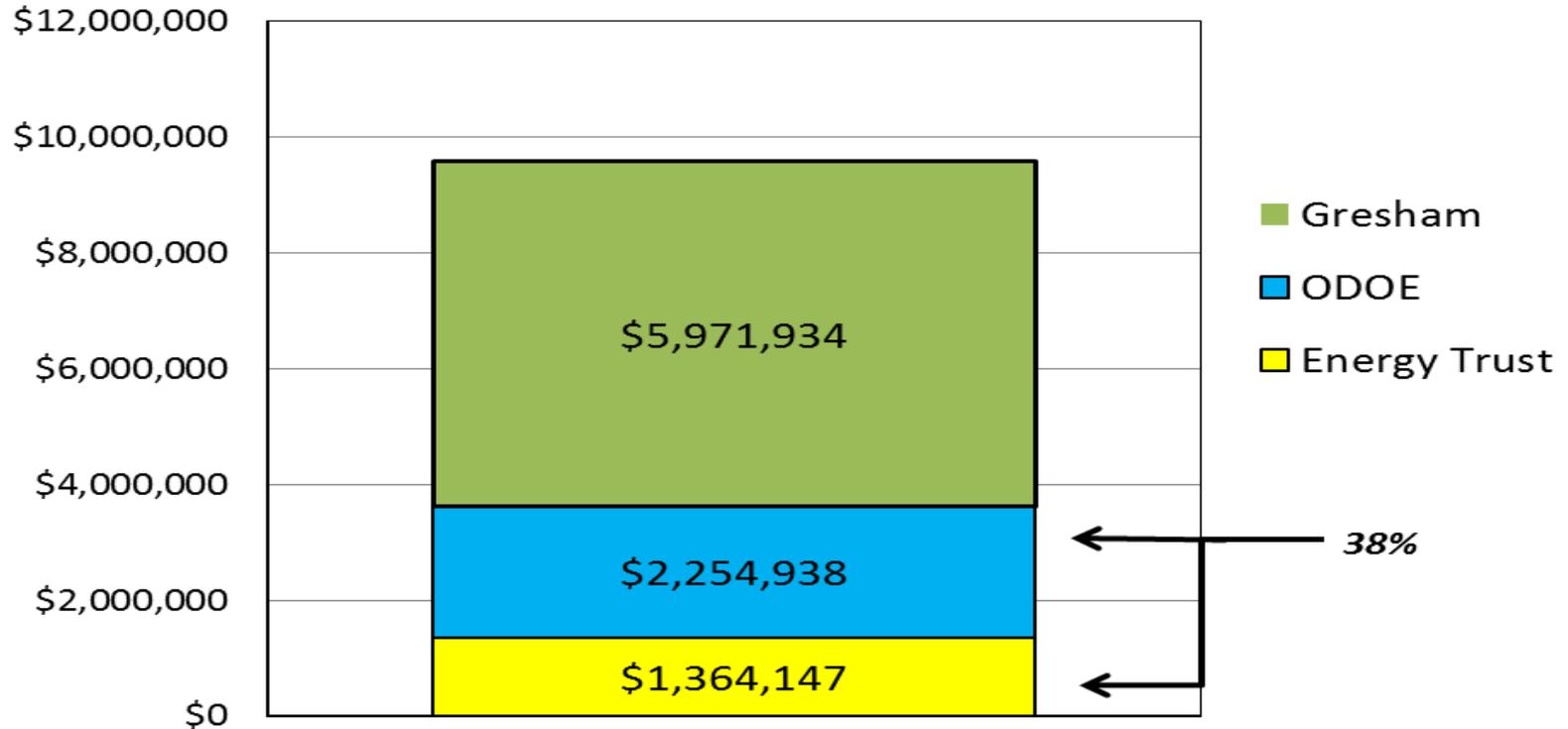
10-Year Avoided Utility Costs and FOG Tipping Fee Revenue



- \$400,000+ per year avoided electric utility costs
- FOG tipping fee revenues of \$300,000 per year

Energy Projects Cost Summary

10 Years of Energy Related WWTP Projects



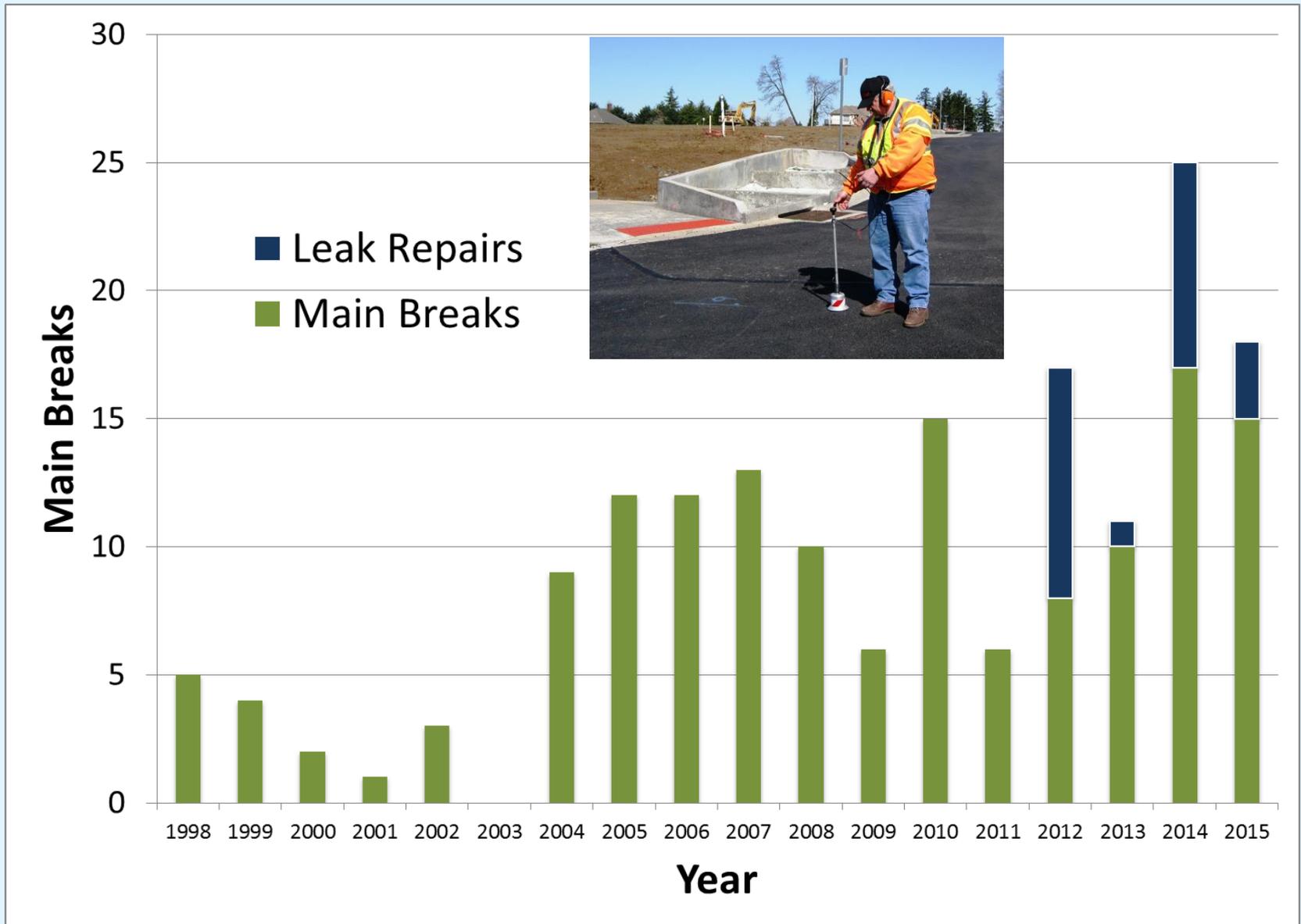
- Energy Trust Technical Assistance and Incentives
- State of Oregon BETC Program
- State of Oregon CHP Business Energy Incentive

Potable Water Efficiency



Automated Meter Install

WATER MAIN BREAKS (1998-2015)



Trenchless Pipe Replacement



Gresham Green Streets and Natural Stormwater Infrastructure



Natural Resources Protection



LED Streetlight Conversion

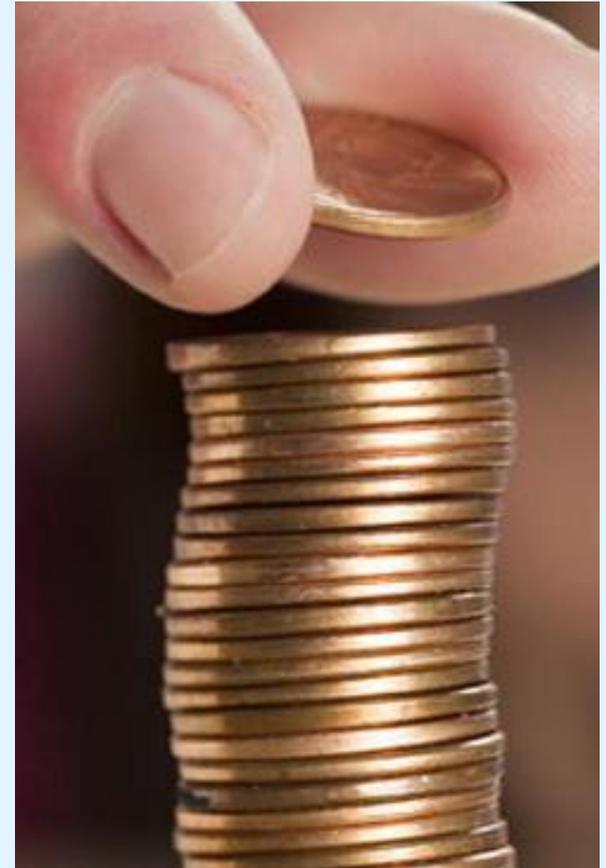


City Buildings



Funding, Financing, and Rate Politics

- Rates are king, but it's difficult to sell much needed increases
- New technologies are helping to contain costs
- More favorable financing tools are needed to smooth rate hikes
- Opportunities for public-private partnerships
- Grants help policymakers make infrastructure investments



Filling the Trophy Case

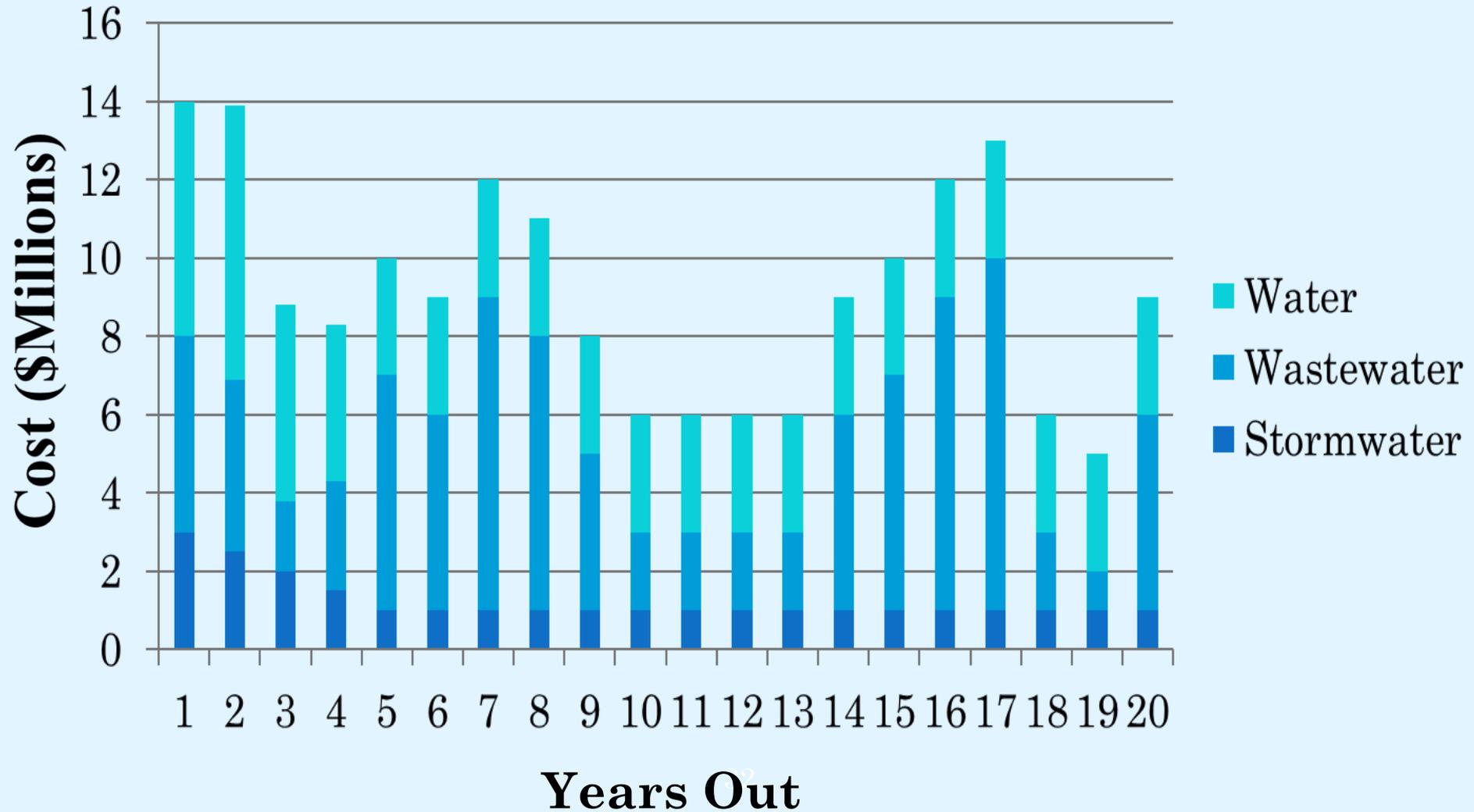


- 2015 ACWA Outstanding Member Agency- WWTP Net Zero
- 2015 Oregon APWA project of the year- WWTP Net Zero
- 2015 APWA sustainability project of the year- LED Streetlights
- 2015 American Biogas Council Project of the Year- WWTP
- 2015 National Council for Public Private Partnerships- WWTP
- 2014 Clean Energy States Alliance- State Leadership in Clean Energy
- 2013 US Conference of Mayors Climate Protection Award
- 2010 League of American Bicyclists- Bicycle friendly community
- 2009 American Council of Engineering Companies project of the year- WWTP Energy Independence Study

Thank You



Water Utility Capital Projects



Capital Improvement Plan (CIP) Spending

- Water
 - Average historical: \$3.3 million per year
- Wastewater
 - Average historical: \$5.6 million per year
- Stormwater
 - Average historical: \$1.4 million per year

Water Utility Rate Factors

- Declining revenues
 - Declining water use
 - Low SDC revenues
- Increasing costs
 - Portland wholesale cost of water
 - Long-range inflation of construction costs
 - Concrete, steel, fuel, oil (plastic), labor
 - High percentage of assets coming due for replacement

Gresham's SDC collection history



Controlling Utility Rates

Short-Term (1-5 years)

- Reduce Level of Service Standards
- Raise System Development Charges (SDCs)
- Delay capital projects (negative longer-term financial effect)

Long-Term (5+ years)

- Reduce Level of Service Standards
- Raise System Development Charges (SDCs)
- Replace assets at the right time, don't delay capital projects
- Make strategic investments w/ long-term cost benefits
- Utilize favorable financing mechanisms
 - Grants
 - Low-interest loans)