

Creative Solutions in Changing Environmental Times

A Time for Open-Mindedness, Creativity and Ambition!

Laurent Auguste
President and CEO, Veolia Water Americas

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Milwaukee







A time of exceptional challenges



- **Technological and operational challenges** from more stringent regulations (nutrient removal, CSO, sludge....)
- **Operating cost increases** (chemical, power) with oil price volatility
- **Aging infrastructure, funding shortfalls** in hundreds of billions
- **Knowledge management** with baby-boomers departure
- **Conservation** with increased population density and water scarcity
- **Climate change** leading to **exceptional rain events** and need to control the **carbon footprint**
- **And now... an exceptional financial crisis!!**
Are cities the next financial domino?

Competing interests and tougher choices for municipal leaders

Serious challenges for water professionals... but also what fuels our passion and makes the industry dynamic!

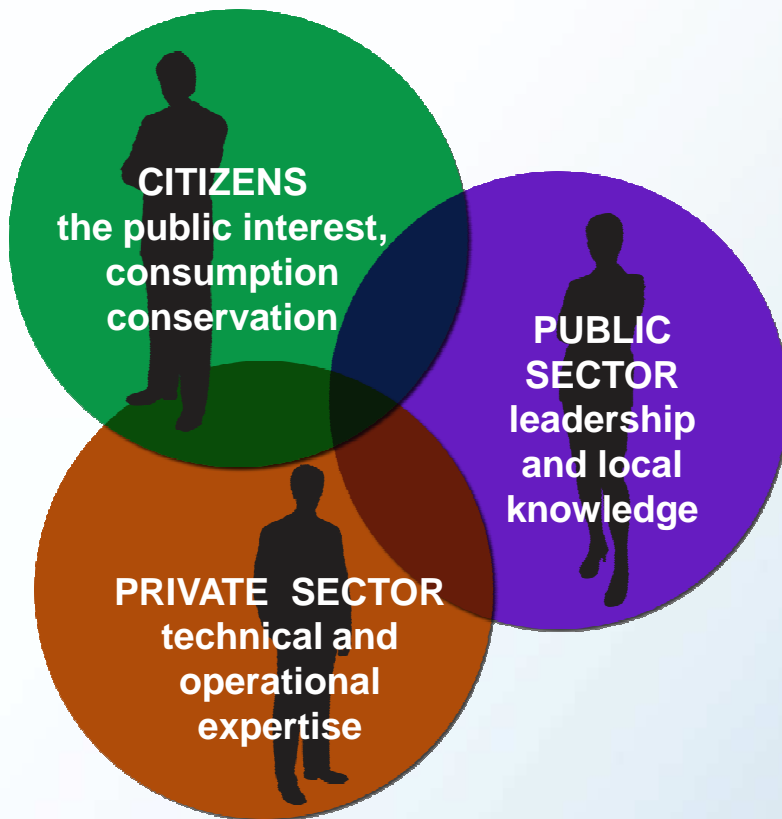
A time of exceptional challenges and choices



The status quo is under siege

- Do more with less?
- Cut costs?
- Raise rates?
- Reduce services?
- Embark on change management practices?
- Tap into the \$7 billion stimulus package?
- Recast the federal government as the ultimate services provider or solution?

A time for exceptional challenges mobilizing all stakeholders



- A time for ideology or a time for engagement and best practices?
- Everyone has a major interest in seeing these challenges addressed and has a role to play.
- We need to draw on mutual strengths and complementary roles and experience.

Can we afford not to?!

What does it take? it begins with awareness



The value of system management

THE PUBLIC

- Are people aware of the work and dedication required to build, operate and maintain water and wastewater systems?
- Do they understand the affect of their consumption and practices?

POLITICAL LEADERSHIP

- Who stands?
- What case is presented?
- And how will the case be presented?

What does it take?

it begins with awareness

\$40?

Per Household
Monthly
Average



The value of water

- What is the value of water?
- Or the cost not to have a source readily available?
- Or the limitation to society?
- Which mid-term social and economical impact if the required investments are not made now?

\$1.50

16 ounces of
bottled water



\$8-10

Six-pack
of beer



\$4-6

Six-pack of
soft drinks



\$3.50

Coffee/latte



What does it take? it begins with awareness



The water-energy nexus

- Greater energy demands require more water... and more water and wastewater treatment requires more energy.
- Increased energy independence will lead to increased pressure on water resources and need for even tighter management.

**No ambitious energy policy without
ambition for water management**

What does it take?

Best practices for local applications



Challenge: Local solutions required; each city on its own.

PUBLIC SECTOR

- Consider other cities and associations to determine local/regional applicability.

PRIVATE SECTOR

- Consider the private sector as a full stakeholder and fully use its complementary capabilities.
- An entry point to a network of expertise

What does it take?

Creative solutions with control



Public-private partnerships

- A model based on public control
- Recognizing water as a local issue
- The private sector supports as the technical operator and service provider
- Offering measureable performance
- Drawing strengths from people from both sectors for the public's benefit
- A long-term commitment

The key word: PARTNERSHIP!

Veolia Water - professional services operator training and developing people



PROFESSIONAL OPERATORS
supported by a global network
Engineering
Technology
Best practices
R&D
Financial strength



- 93,500 passionate water professionals
 - Trained in environmental services, operations and technology
 - Focused on reliability
 - Supported by a global network
- Challenged by competition
- Commitment to long-term solutions that deliver solid results
 - Safety
 - Quality and compliance
 - Cost-effective
 - Continuity and Sustainability

Veolia Water - professional services operator providing solutions in the field



NO. 1 IN WATER SERVICES

- \$17.05 billion in revenues
- 64 countries
- 5,000 contracts
- Proprietary technologies
- R&D budget of ~ \$200M

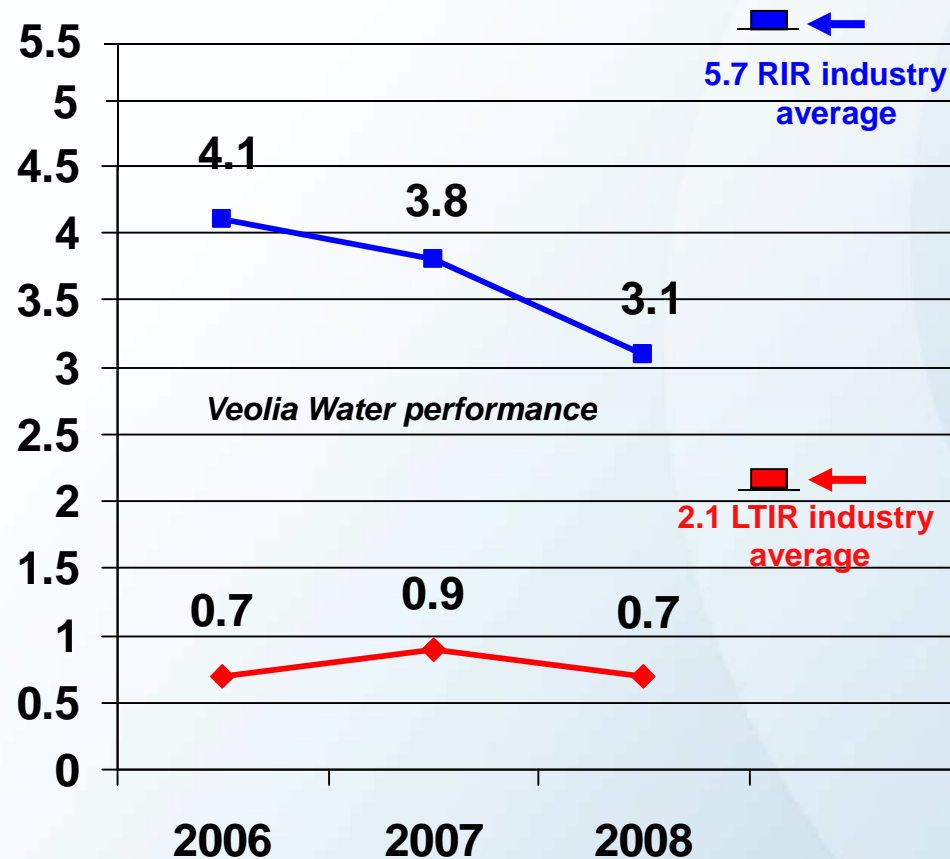
- 150 years of combining operations as a core business with engineering capabilities
- Partner to world's leading cities as well as smaller communities
 - Drinking water services to 80 million people and wastewater services for 58 million people
 - 600 North American communities
- Manage largest U.S. water, wastewater and DBO public-private partnerships

Our Ambition: BIO-REFINERIES!!



Veolia Water - professional services operator

Safety performance 2006 – 2008



95% of all projects are celebrating at least 1 year and up to 20 years without any lost-time accident

◆ LTIR
■ RIR

Lost Time Incidence Rate (LTIR) = cases involving days away from work x 200,000 / total hours worked

Recordable Incidence Rate (RIR) = All* OSHA recordable illnesses/injuries x 200,000 / total work hours

* Includes Medical Treatment, Restrictions & Transfers, and Lost-Time Cases.

Milwaukee, Wisconsin

Largest U.S. wastewater partnership



Veolia Water – Achievements in Milwaukee

Nation's largest wastewater partnership



- Serving 1.1 million in 28 municipalities in a highly environmentally sensitive area
- 411-square-mile service area with a 3,000-mile system of collection sewers and a 310-mile system of interceptor and main sewers
- Operation of a 26.5-mile long deep tunnel
- Two wastewater treatment facilities that treat more than 200 million gallons of wastewater each day, with a combined peak capacity of 630 million gallons
- **Delivering environmental compliance in an historic peak wet season**
- **Delivering stable costs – minimum \$35M in savings atop previous savings**

Veolia Water – Achievements in Milwaukee

\$1.5 million R&D program

- Local governing board, collaboration with VW Global R&D Centers
- Research projects in Milwaukee:
 - **Marquette University:** improvements of anaerobic digestion process to increase methane production 20-30%
 - **MMSD:** investigation of sources of phosphorus in the Milwaukee watersheds by tracking radio-nucleides isotopes
 - **MMSD and UWM – Great Lakes Water Institute:** emerging issue of EDC's or pharmaceuticals and other personal care products trace compounds in local Milwaukee water systems.



Veolia Water has R&D Centers worldwide
with an annual budget of ~\$200 million

Veolia Water – Achievements in Milwaukee

Landfill Gas: Proactive for Sustainability



- **Opportunity:** Veolia operates landfill generating large volumes of methane. MMSD's Jones Island Facility uses large amounts of natural gas for sludge drying.
- **Phase I** Landfill methane gas cleaned and then piped 17 miles to wastewater facility to be used instead of the purchased natural gas.
- **Phase II** would add micro turbines to use additional volumes of methane and produce electrical power to replace purchased power.
- **Benefits:** Costs savings of \$7-10 million of natural gas not purchased. Added benefits from use of renewable fuel and reduction of methane and CO2 emissions.

Largest U.S. DBO partnership

Tampa Bay Water



Veolia Water – Achievements in Tampa Bay

Advanced procurement mode



- Difficult-to-treat variable water quality addressed with ACTIFLO® technology
- DBO solution delivers 66-MGD facility and helps save \$80 million; unanimous approval by TBW board to expand to 120-MGD
- Proven technology, established and proven working relationship and intimate knowledge of operation
- Keller degasification plant (33-MGD)
- Reservoir management (15-BGD)
- Project risk management

COMPLETE INTEGRATION

Engineering → Construction → Technology → Operations

Member governments Hillsborough, Pinellas,
and Pasco Counties, St. Petersburg, Tampa,
and New Port Ritchey

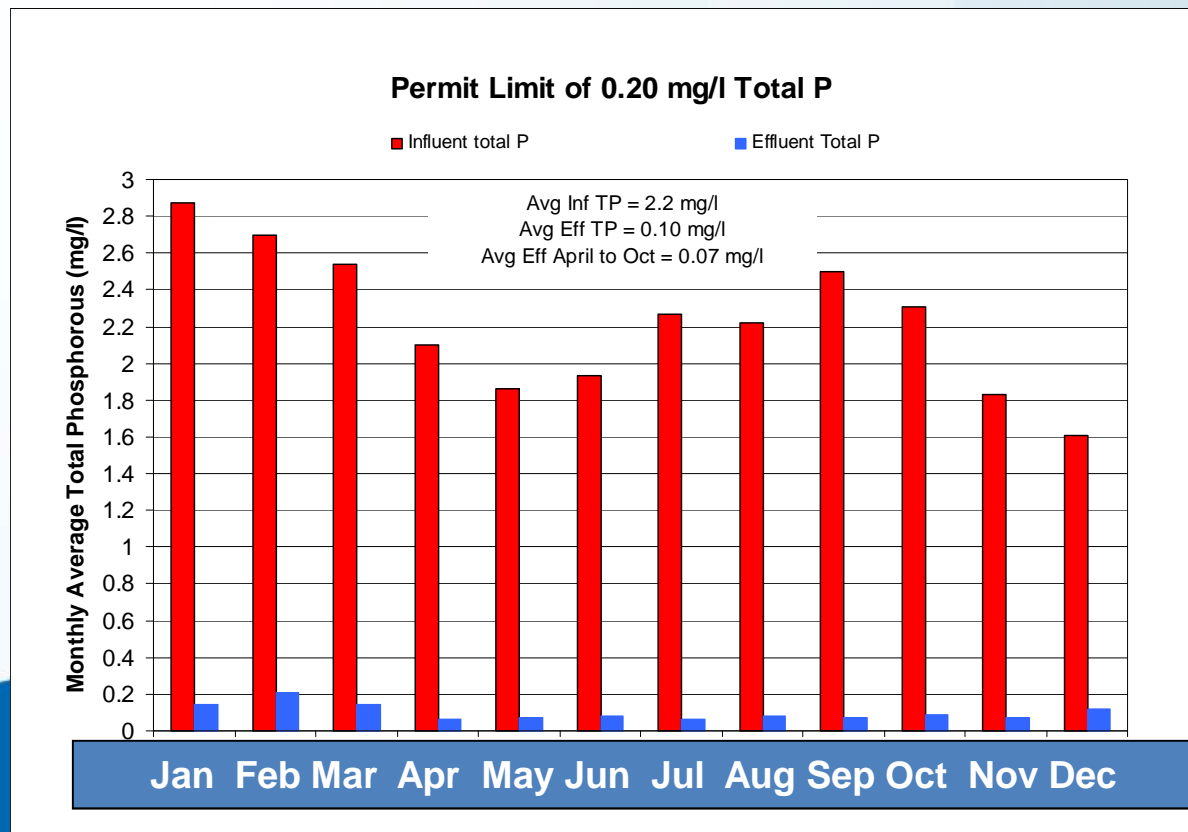
Creativity with technology

Using all technologies – including our own proprietary technologies

Veolia Water – Achievements in the field

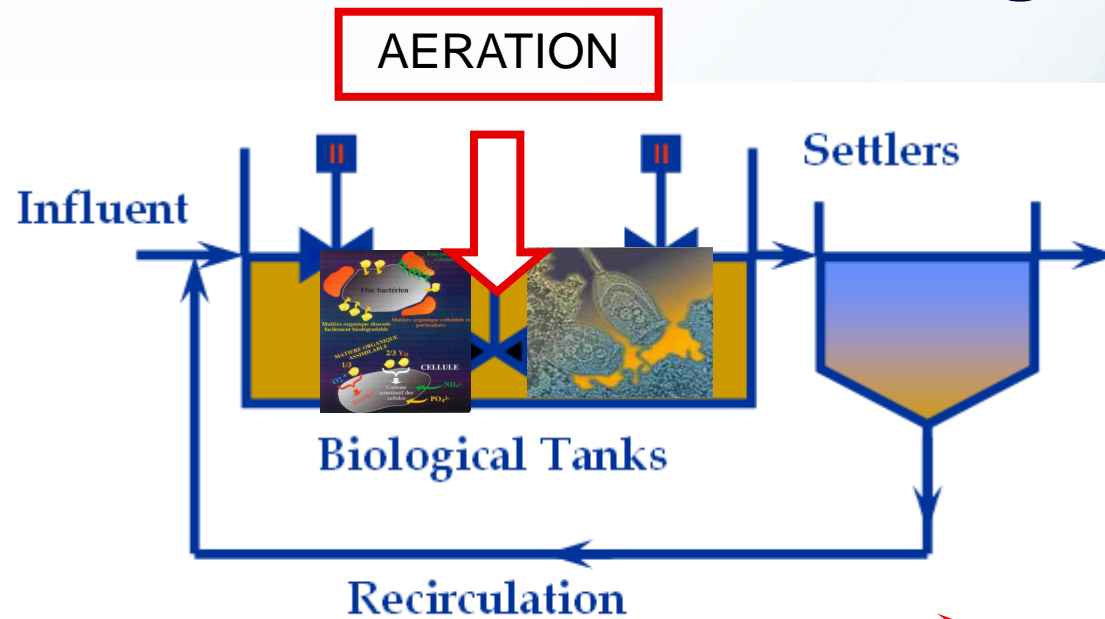
Resolving issues with Phosphorous

- Regulations tougher, permit level between .2 mg/l and .05 mg/l
- Biological reduction can achieve up to 94% removal,
- Chemical Treatment is required to meet <.5 mg/l consistently
- VW's innovative treatment with Actiflo achieves greater than 99% removal with 20-40 % less chemical dosage and small foot print.

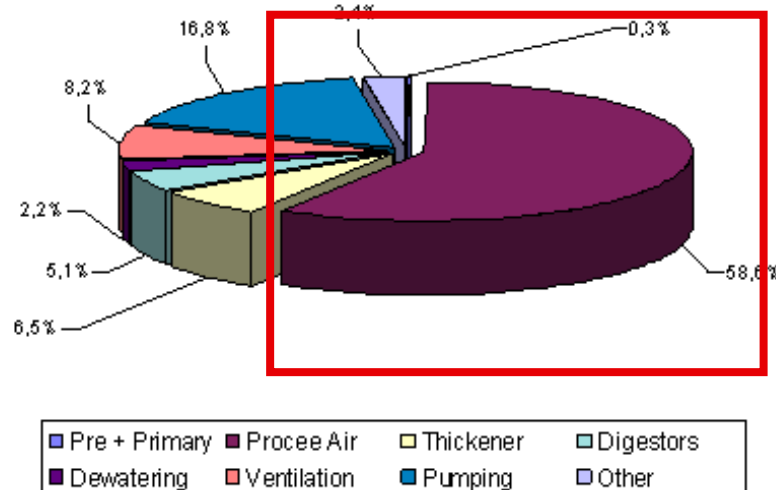


ACTIFLO
Operational Data
for 8 MGD Treatment
Facility

Veolia Water – Achievements in the field Cost Saving Aeration Control

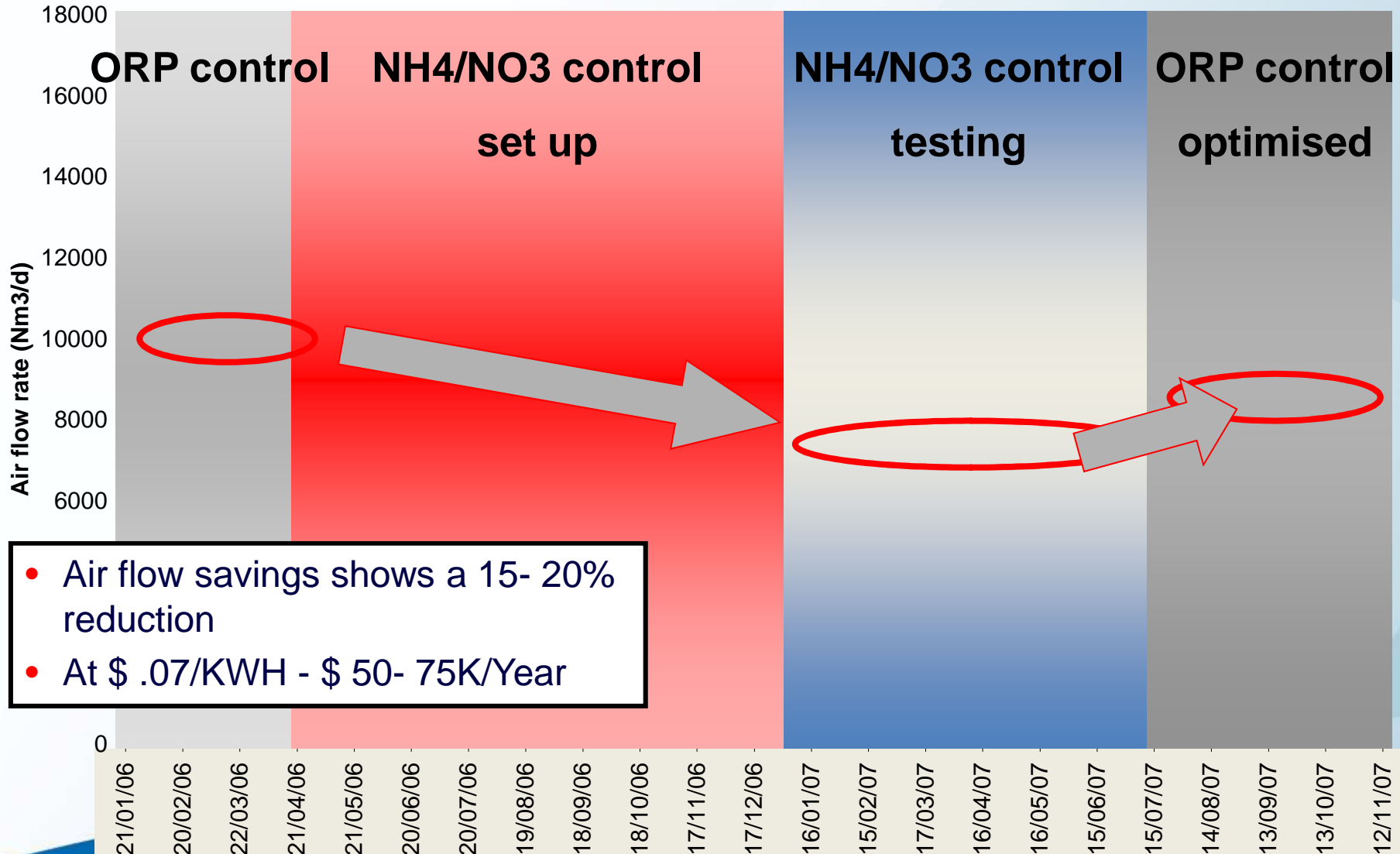


- Providing the right amount of process air at the right moment
- ...to match regulatory needs
- .. But at an optimal Energy Consumption

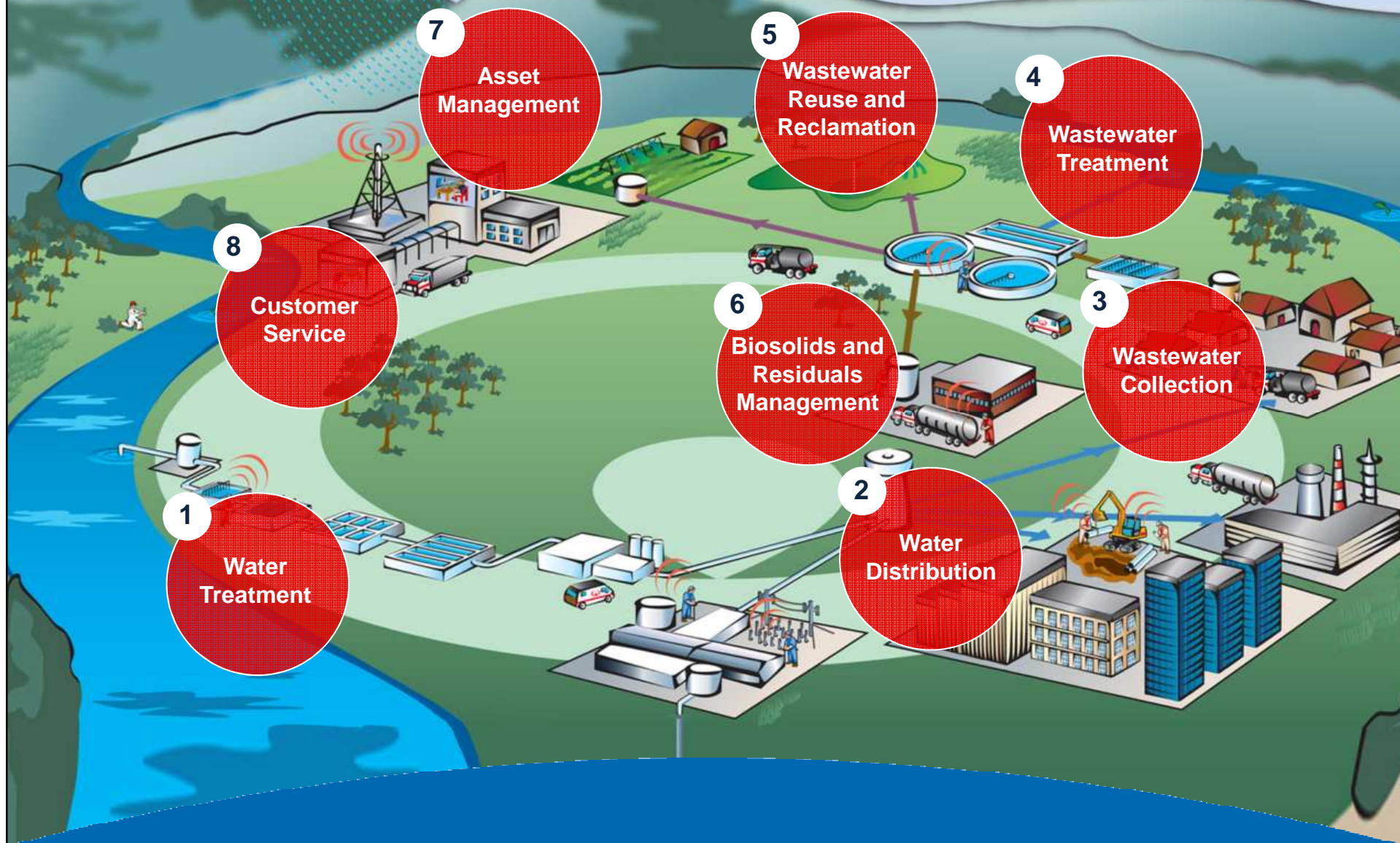


MORE THAN 50%
of Energy Costs
in Most WWTP's

Veolia Water – Achievements in the field



Complete water services management



Experts in design, build, technology, operations
and customer services

PPP: customized solutions, balanced model

Partners determine degree of involvement – thus responsibility.



Realities and myths...

Don't mix water with the private sector?



“They will only drive costs up so they can make a profit ...”

“environmental compliance will suffer...”

“it’s all about headcount reduction...laying off as many people as possible...”

“they’ll cut corners to make their margin...”

“the private sector wants to be in control and call all the shots...”

“their plan is to own the world’s water...”

“they don’t work with unions...”

The private sector with the public sector **Alignment of interests and goals!**



What it takes – a real partnership!

- Long-term, sustainable programs that offer a community:
 - clear roles and responsibilities
 - alignment of goals
 - a merger of respective strengths
 - flexible customization to meet the local public interest
 - transparency of goals, programs and results

With all stakeholders committed...

A Self-Generated Stimulus Package

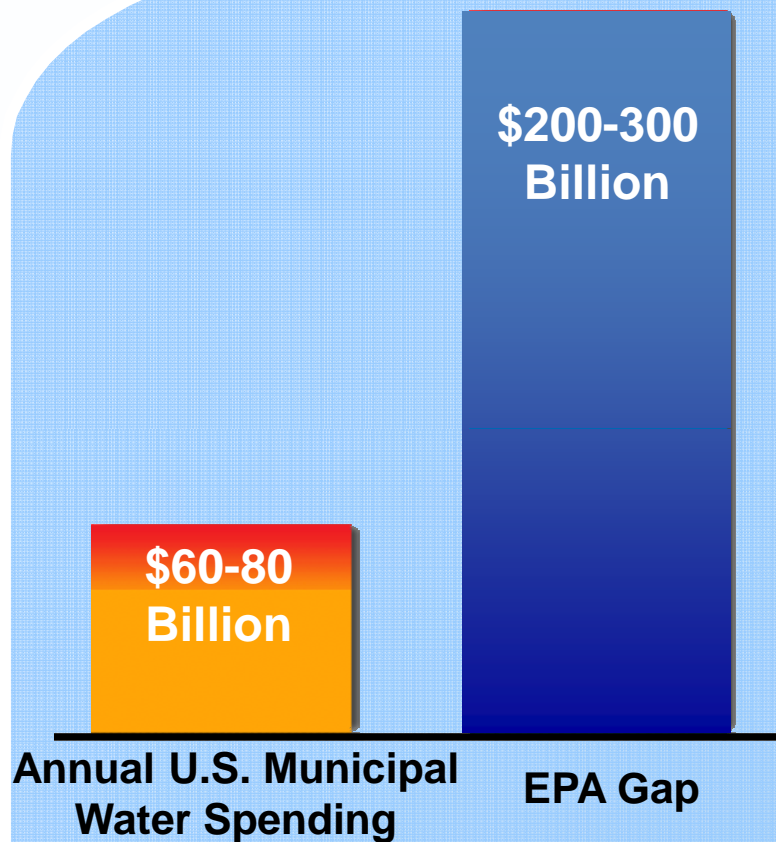


**\$60-80
Billion**

**Annual U.S. Municipal
Water Spending**

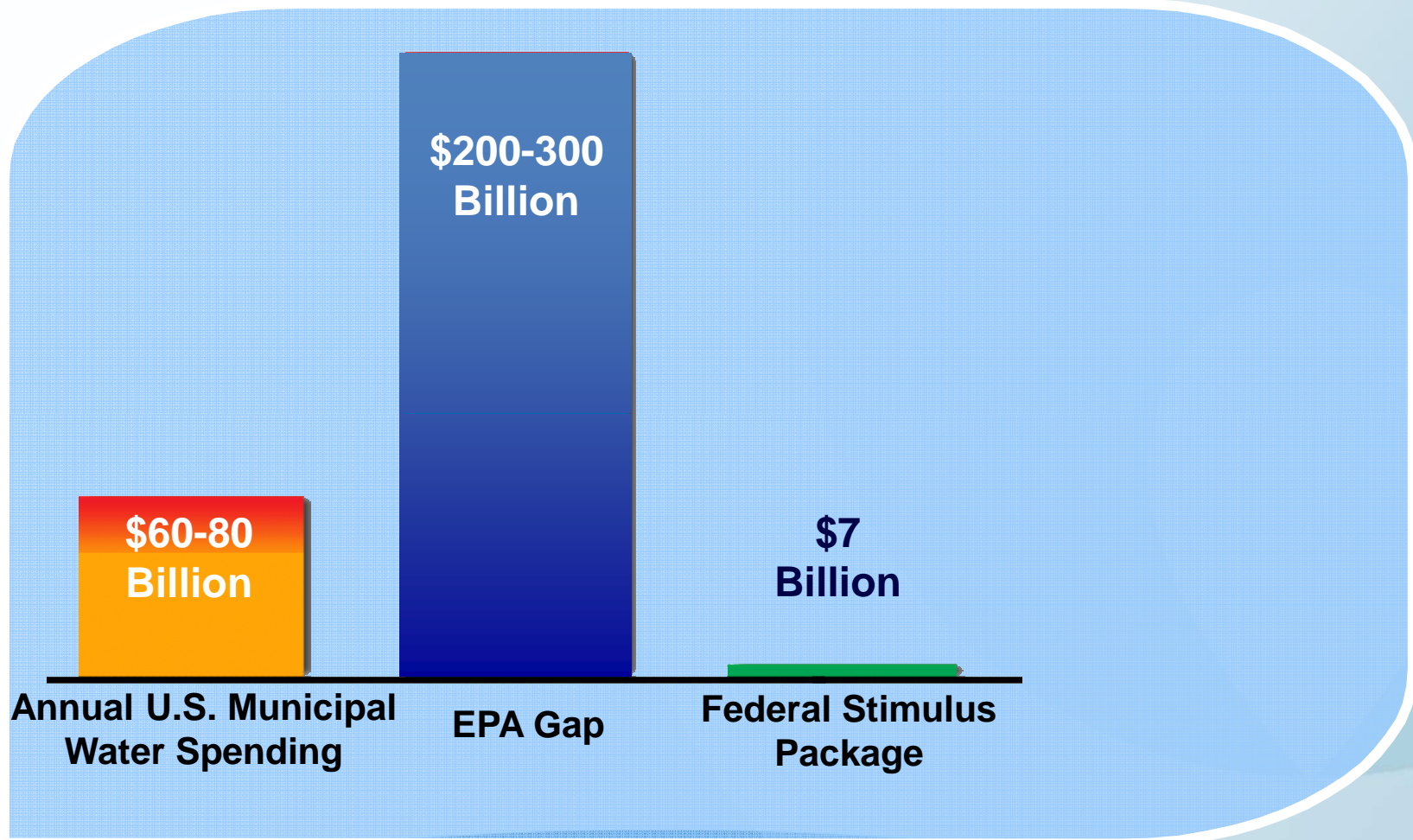
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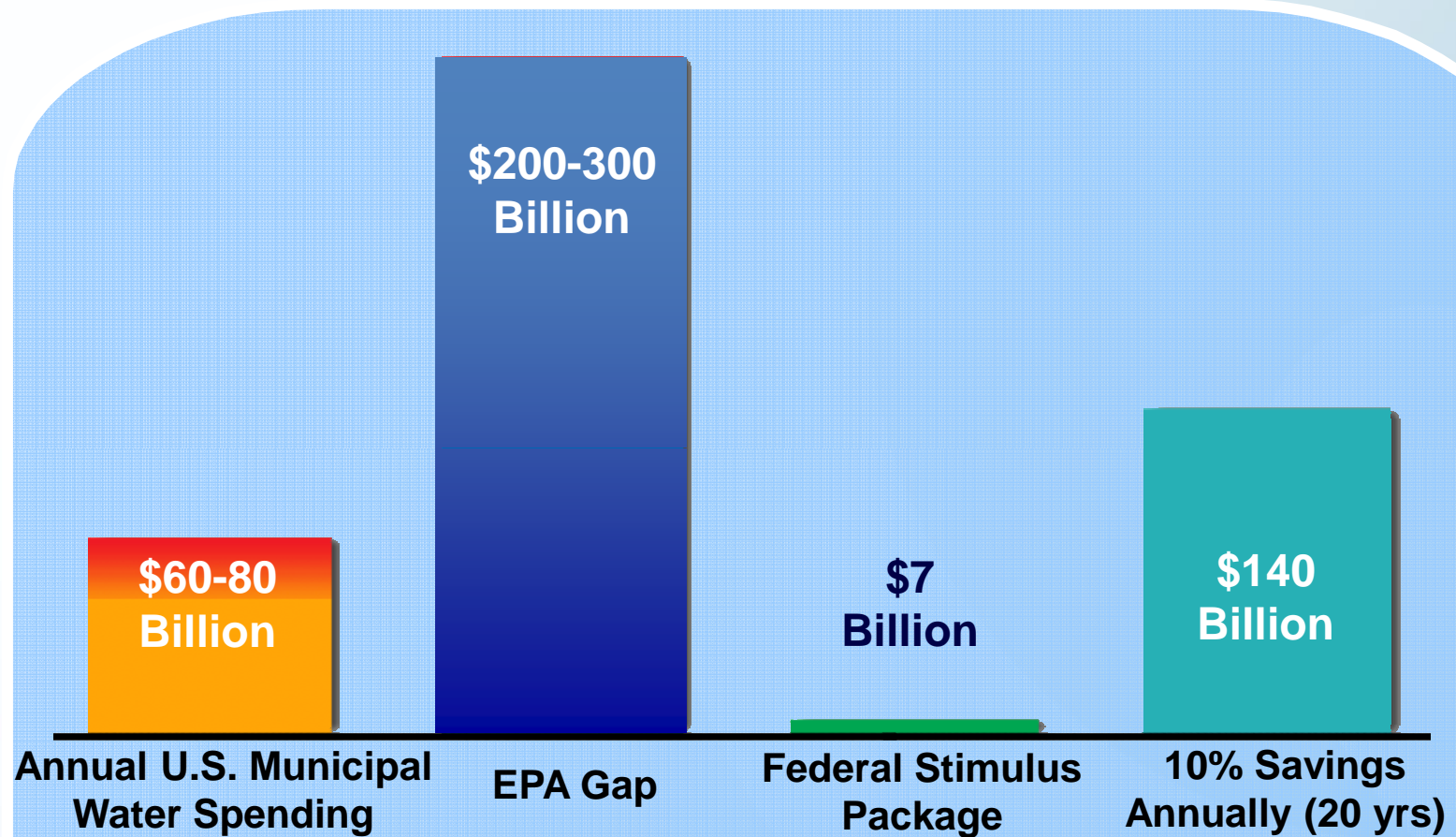
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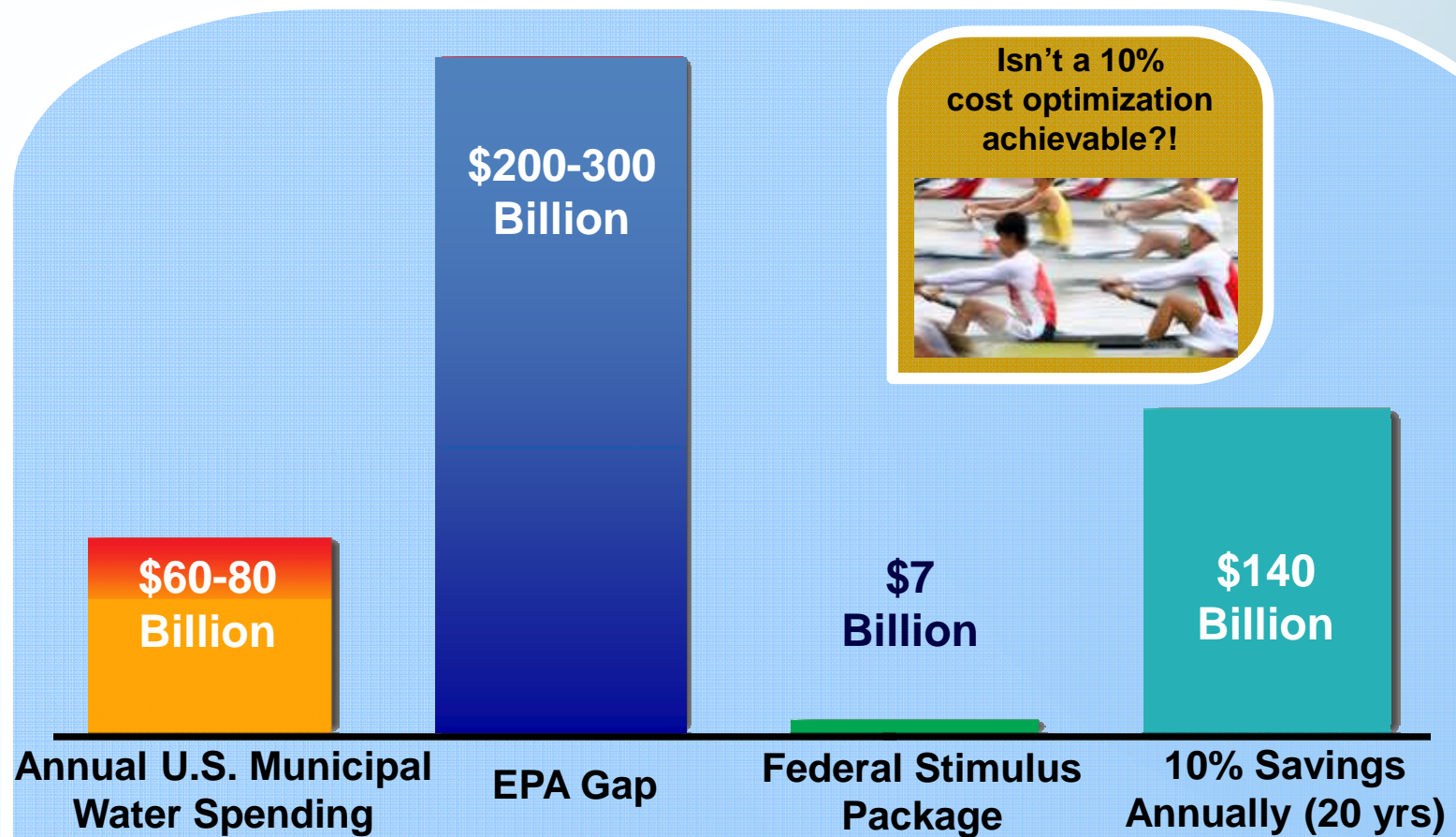
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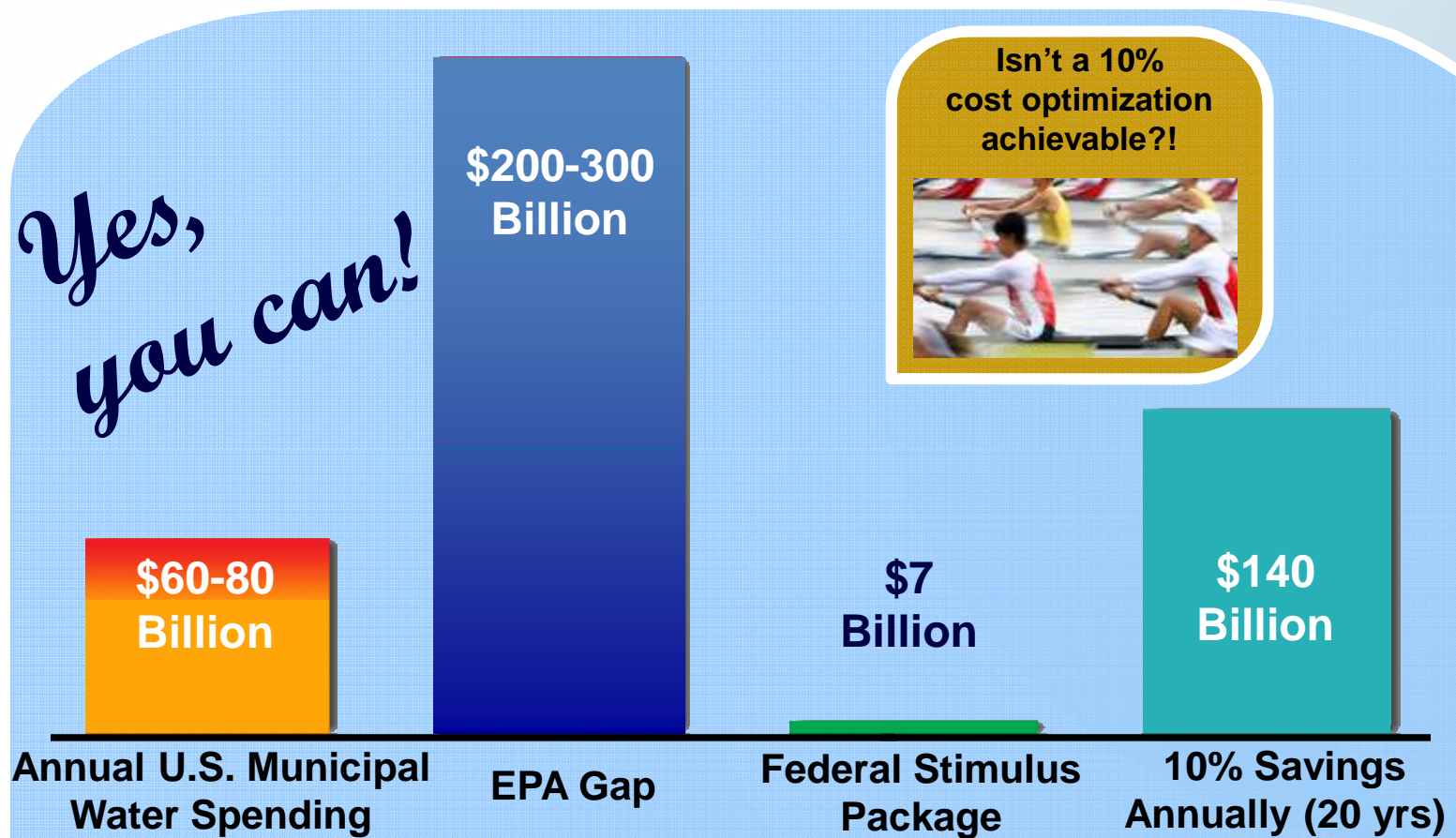
With all stakeholders committed...

A Self-Generated Stimulus Package



With all stakeholders committed...

A Self-Generated Stimulus Package





Veolia Water Milwaukee, LLC

"Working to help protect Lake Michigan"
www.veoliawatermilwaukee.com