



# Contract Operations & Maintenance: Is it right for you?

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## AGENDA

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- Introduction to Veolia
- Contract Operations & Maintenance: What, why & how
- Asset Management and its importance
- Success snapshots

## Who is Veolia? Our mission, vision & values?

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**North America**

**8,000 employees**  
**Serve 550 communities**  
**30,000 customers**  
**\$2.4B revenue**



**Worldwide**

**163,000+ employees**  
**Drinking water to 96M**  
**Wastewater service to 60M**  
**52M megawatt hours of energy**  
**31M tons of waste converted**  
**Consolidated revenue, \$25.7B**

### MISSION:

We partner with communities and industry to improve quality of life in their communities by addressing their most complex environmental challenges in water, waste and energy.

### VISION:

To be the most reliable and sought after environmental operator in the United States

### VALUES:

Trust in our company

Reliability in our performance

Expertise of our people

Transparency in our actions

Criticality of our service

Partnership with your community

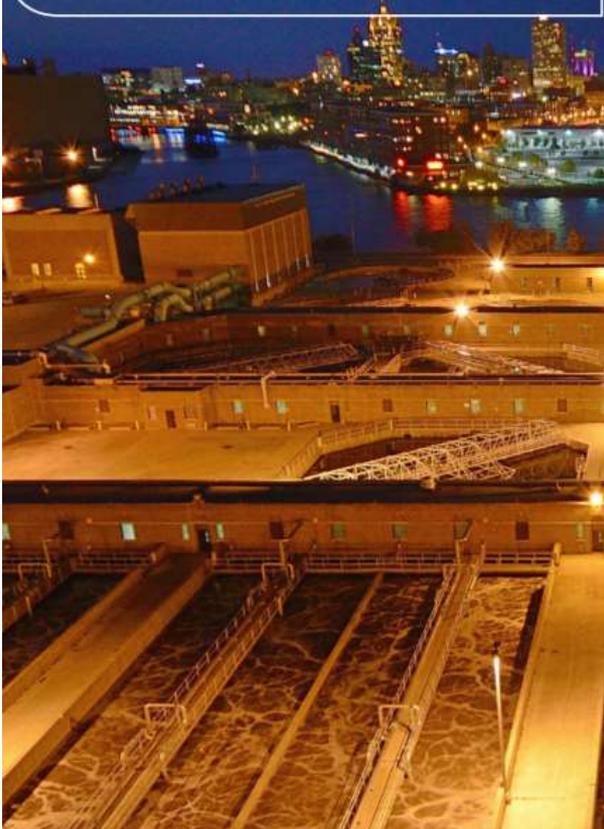
# Contract O&M of Utilities (*Power, energy, water & wastewater*) is our core competence, so you can focus on your core

## VEOLIA MILWAUKEE OUTPERFORMS FEDERAL PERMIT STANDARDS

### Total suspended solids discharge

EPA – Wisconsin DNR Regulation: Wisconsin Pollutant Discharge Elimination System (WPDES)

|                                 |                       |
|---------------------------------|-----------------------|
| NPDES Monthly Limit             | 30 parts per million  |
| MMSD Monthly Limit              | 15 parts per million  |
| Veolia Milwaukee Monthly Actual | 4-7 parts/per million |



Cogeneration re-development brings reliable and sustainable electricity and thermal energy to the New York University campus



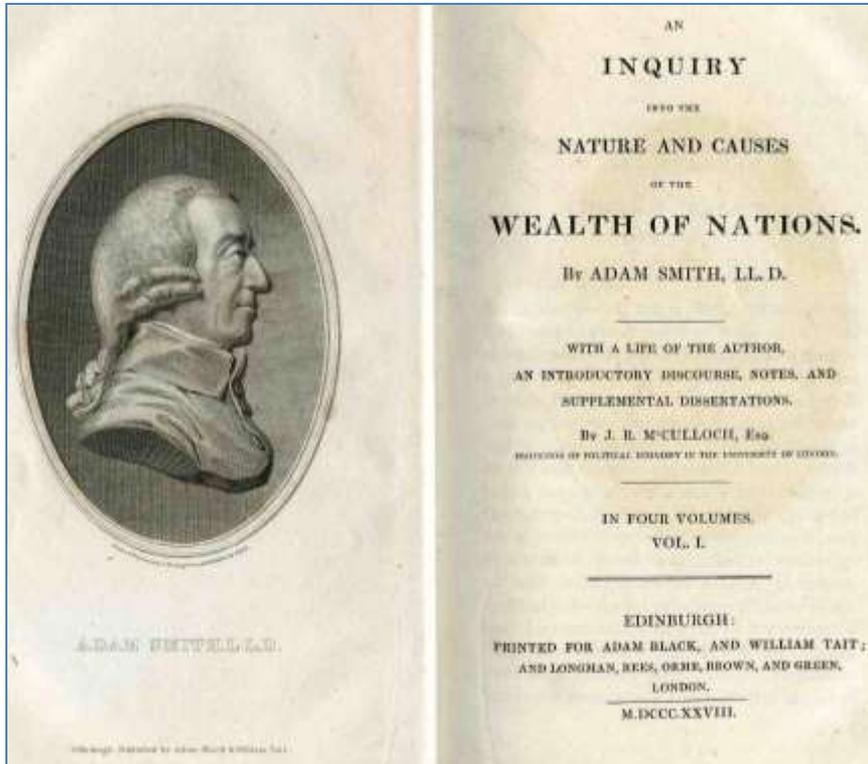
**Green Steam Project Reducing Boston's Carbon Footprint**  
 Cuts carbon emissions by 475,000 tons/year, equivalent to:

- Removing 80,000 cars from the streets annually
- Installing 600 football fields of solar PV



# A 1<sup>st</sup> principle of economics Inference?

*Focus on your core competence  
Outsource non-core needs*



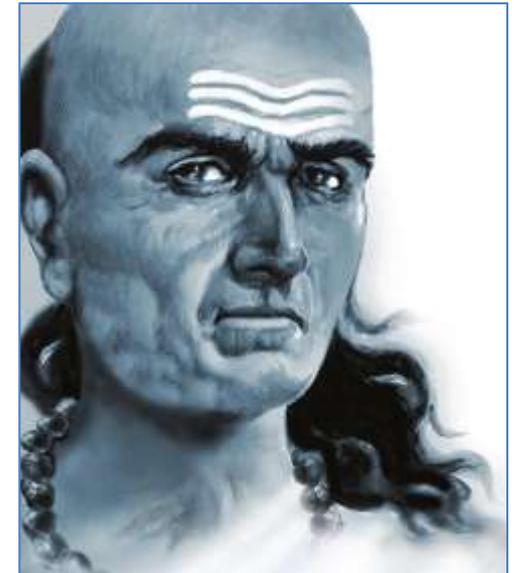
**Adam Smith (18<sup>th</sup> century Scottish philosopher):**

“It is not from the benevolence of the butcher, the brewer or the baker that we expect our dinner, but from their regard to their own interest”

**Kautilya (aka. Chanakya, Indian royal advisor from 2,300 year ago):**

In his “*Arthashastra*”, he advised the kingdom’s requirements be “outsourced” to citizens so “*each may excel at his task*”.

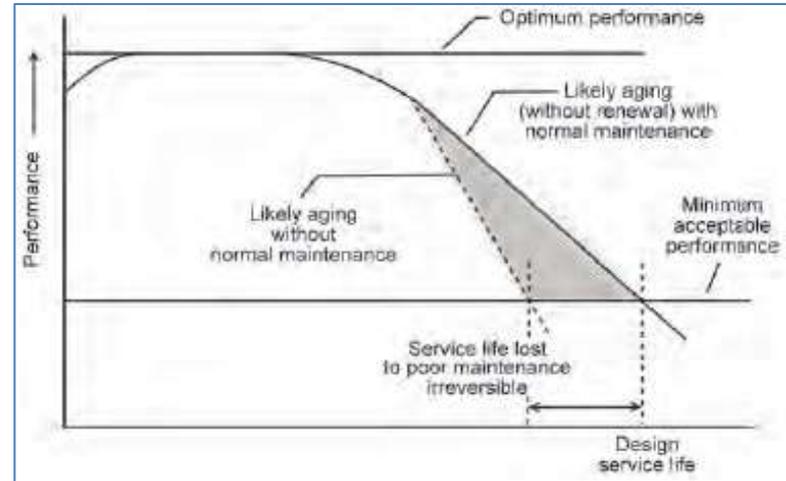
The kingdom’s prosperity depended only on external defense, internal security plus speedy & impartial justice.



# Contract Operations & Maintenance (Con. O&M)

WHY: Safety + Efficiency + Reliability. Eg: District Energy system, Water Treatment Plant etc...

WHAT: Policies & procedures to optimally operate and maintain equipment and systems



## Operations, Training & Administration

Administration & *Conduct* of Operations

Equipment Status Control

Operator Training, Knowledge & Performance and Safety

Management Assessment

## Maintenance & Engineering Support

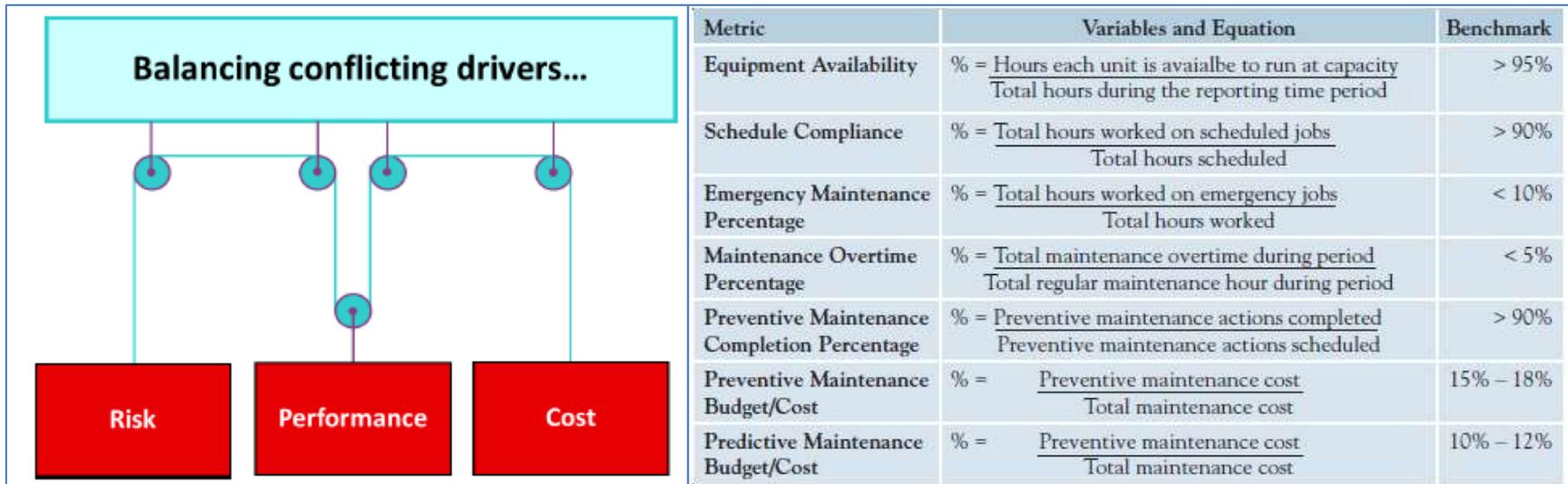
Administration & *Conduct* of Maintenance

Work Control System

Preventive, Predictive & Reliability Centric Maintenance

Maintenance Procedures & Documentation

# An asset owner's overview on Contract O&M



## PRO's

- Expert outside resources
- Accrued Savings: Energy efficiency & process control expertise, Management, Purchasing, Staffing & Training, Capital Improvements
- Shift financial responsibility for Repair, Maintenance & Asset Replacement,
- Typically not a privatization; host owns assets
- No ongoing staff training costs

## CON's

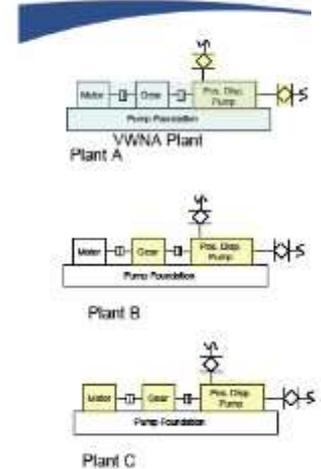
- Fail to develop in-house expertise
- Hard to exit a "bad" O&M contract
- Limited exposure to alternate ideas
- Non-core utility assets remain on host balance sheet
- Host utility staff become employees of Contract O&M firm

# Contract Operations & Maintenance: Seven steps to success

1. Audit non-core utility assets & systems
2. Define objectives, freeze scope & develop a strategy. Eg:
  - Opportunities to improve work flows & reduce waste?*
  - Outsource all utilities (power, thermal energy, water, wastewater)?*
3. Solicit bids from specialized Contract O&M firms
4. Allow creative solutions; i.e. don't be overly prescriptive
5. Evaluate responses & decide best fit
6. Complete contract negotiations in a timely & transparent manner. Sources of friction
  - Imprecisely defined scope of work*
  - Over optimistic cost limits for Repair & Maintenance*
  - Unrealistic shifting of risk. "A risk is borne by the entity best placed to bear that risk"*
7. Allow for a realistic Transition period: First estimate cost, time & resources required; then double those figures.



## What is an Asset?



## Common Contract O&M commercial structures

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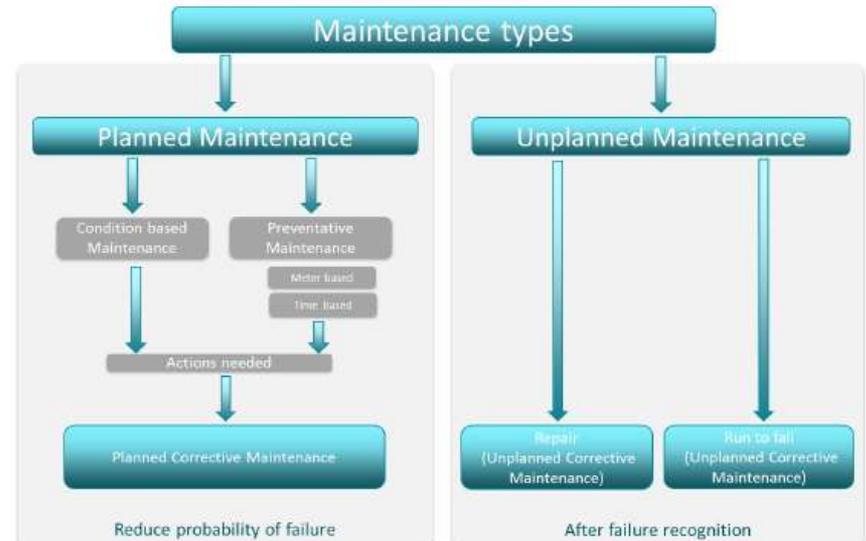
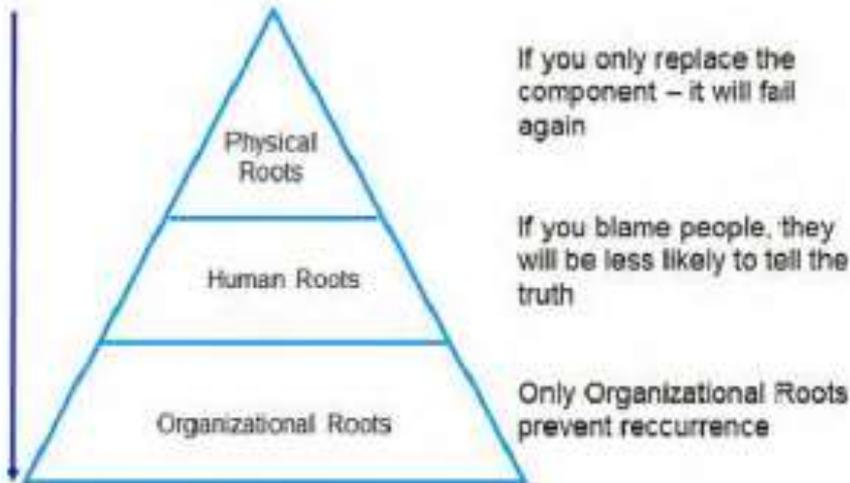
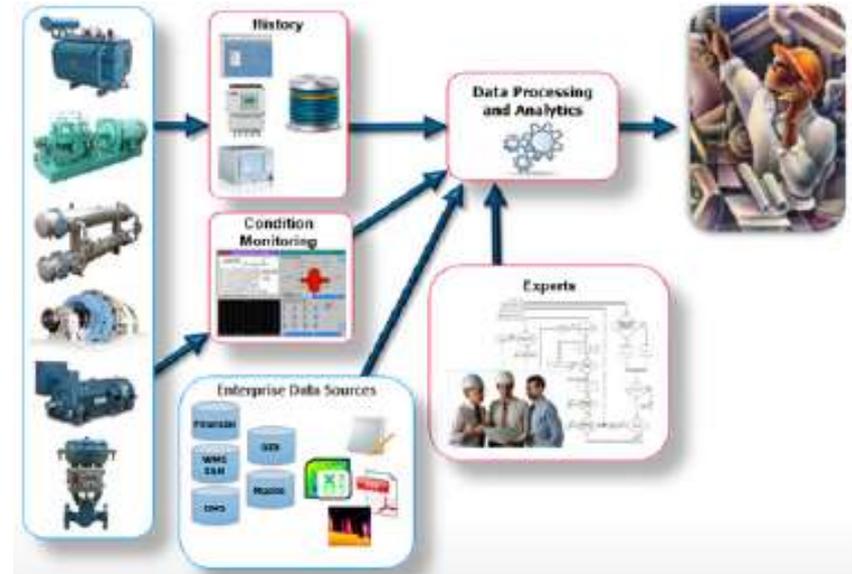
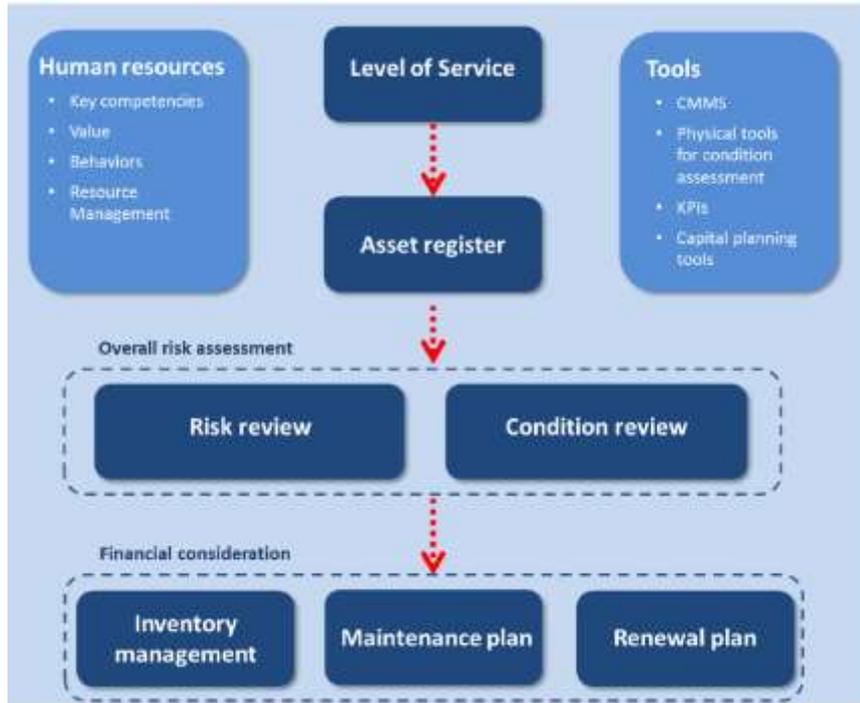
| <b>Service Contract type</b> | <b>Typical Features</b>  | <b>Costs &amp; Benefit</b>  |
|------------------------------|--|---|
| Full Coverage                | 100% coverage of operations, maintenance, parts & material, emergency service etc...   | High Budget certainty. Provider incentivized to minimize Repair & replacement costs |
| Full Labor                   | Labor + minimal maintenance. Parts & material, emergency service etc... on a T&M basis | Budget certainty and lower costs if asset owner able to manage some activities      |
| Preventive Maintenance       | Fixed fee covers scheduled maintenance hours + basic consumables                       | Lower upfront cost, lower budget certainty & medium Owner involvement               |
| Inspection                   | Fixed fee covers “fly-by” visits and + a maintenance advisory                          | Very low upfront cost, low budget certainty & high Owner involvement                |

## Common Contract O&M Roles & Responsibilities (“Full coverage”)

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| <b>Task</b>                               | <b>Responsibility</b>   |
|---|---|
| Collection system operation               | City or host  |
| Service payments & user charges           | City or host  |
| Fire, Flood, Eminent Domain               | City or host  |
| Design changes or physical modifications  | Contractor (with City/host approval)                          |
| Incentive & penalty payments              | Contractor and City/host, per contractually negotiated limits |
| Spares management, residue removal        | Contractor  |
| Liability Insurance & indemnification     | Contractor  |
| Equipment failure & emergency maintenance | Contractor  |
| Plant operations & maintenance            | Contractor  |
| Non-compliance responsibility             | Contractor (pays fines)                                       |

# Asset Maintenance Program complements Operations



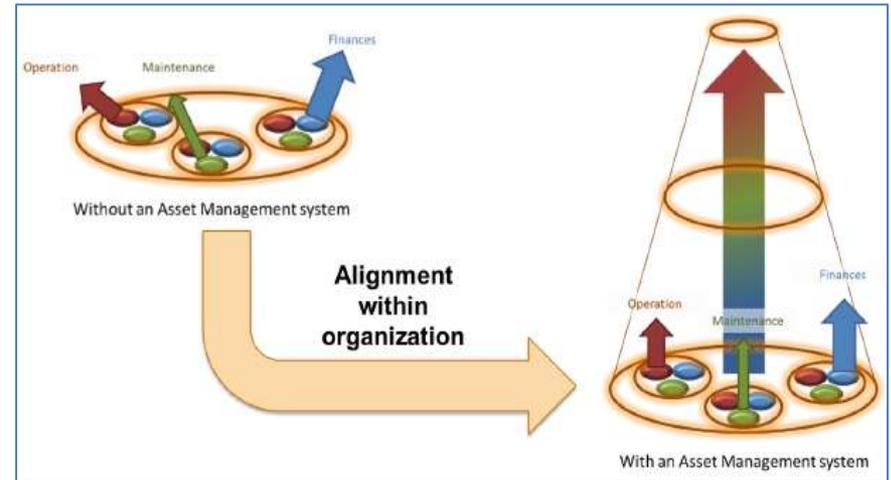
# Contract O&M: The “Transition Period” and beyond

## Results = People + Process

Implement Computerized Maintenance Management Software, CMMS

Start plant upgrades by analyzing how to *fundamentally* improve operations

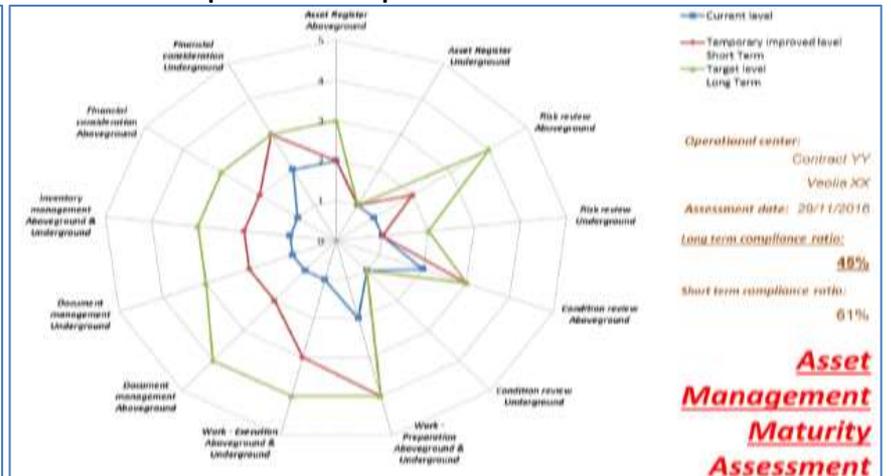
Safety first, then fix gross & visible deficiencies, then fine-tune operations



Veolia input: structure of assessment grid

| Requirements of a given level of Maturity imply fulfillment of previous levels.<br>Ex: Maturity 2 = Maturity 0 + Maturity 1 + Maturity 2 | Asset Register | RISK        |                  | PERFORMANCE        |                  |                     |                      | COSTS                   |
|--|----------------|-------------|------------------|--------------------|------------------|---------------------|----------------------|-------------------------|
|  |                | Risk review | Condition review | Work - Preparation | Work - Execution | Document management | Inventory management | Financial consideration |
| Maturity 0<br>Innocent   |                |             |                  |                    |                  |                     |                      |                         |
| Maturity 1<br>Aware  |                |             |                  |                    |                  |                     |                      |                         |
| Maturity 2<br>Developing   |                |             |                  |                    |                  |                     |                      |                         |
| Maturity 3<br>Competent  |                |             |                  |                    |                  |                     |                      |                         |
| Maturity 4<br>Advanced   |                |             |                  |                    |                  |                     |                      |                         |
| Maturity 5<br>Expert   |                |             |                  |                    |                  |                     |                      |                         |

Veolia Output: Example assessment



# Theory is terrific, but what about the “Real world”?



# Contract O&M: Wastewater Treatment, Milwaukee, WI

## Awards

- › 2013 Burke Safety Award, Central States Water Environment Federation, in recognition of commitment to safety at MMSD facilities.
- › 2013 Small Business Champion Award & Mayoral Proclamation – City of Milwaukee, for outstanding achievement utilizing small and diverse businesses.
- › 2008-2012 Peak Performance Awards, National Association for Clean Water Agencies, in recognition of achieving 100 percent compliance with the Clean Water Act.
- › 2011 Radebaugh Award, Central States Water Environment Federation, in recognition of outstanding contributions in advancing water quality improvement.
- › 2009 Award of Excellence, Wisconsin Supplier Development Council, for outstanding achievement utilizing small and diverse business enterprises.
- › 2009 Distinguished Public-Private Partnership Award, National Council of Public-Private Partnerships

## Our Milwaukee partners

Since 2008, Veolia has provided a quarter of a million dollars in funding – through sponsorships, memberships and charitable contributions – to dozens of organizations and events. It's our way of extending our impact in the areas of environmental education, workforce development and supplier diversity.

**“Veolia has demonstrated a commitment to improved water quality in Milwaukee and the Great Lakes through its support of cutting-edge research here at the UWM School of Freshwater Sciences.”**

*Dean David EJ Garman, UWM School of Freshwater Sciences*



## By the numbers

### Veolia's partnership with MMSD:

#### SIZE & SCOPE:

- › 1.1 million customers across 28 municipalities
- › Veolia began operations March 1, 2008
- › Largest public-private wastewater partnership in the U.S.
- › Veolia Water Milwaukee employs 220 people locally

#### OPERATIONS AND MAINTENANCE:

- › Provide 24/7 operation of two water reclamation facilities
  - Jones Island, the oldest activated sludge plant in the U.S., which can handle flow rates up to 330 million gallons per day
  - South Shore, built in the 1960s and located in Oak Creek, which can handle flow rates up to 300 million gallons per day
- › Produce Milorganite®, one of the oldest organic fertilizers on the market today
- › Monitor and control wastewater flows through the 320-mile complex of conveyance pipes
- › Manage the 26.5 mile Deep Tunnel storage system, utilizing wet weather protocols designed to minimize basement back-ups





# Contract O&M: District Heating & Cooling, Kansas City, MO

## ABOUT THIS LOCATION:

In Kansas City, Veolia's district energy network serves approximately 60 customers in the central business district, with more than 4 million square feet of commercial space.

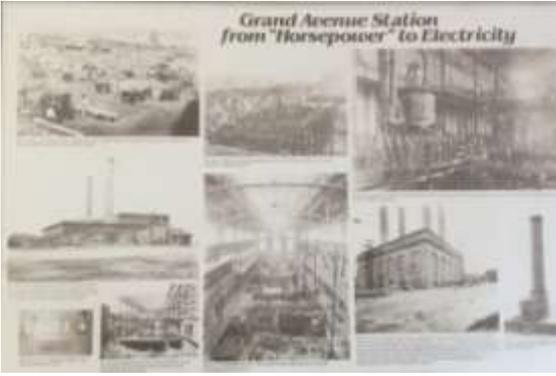
The district energy network provides centrally-produced steam and chilled water for their customers, and the facility also cogenerates electricity.

## Customers

- Chemicals industry
- Agrifoods industry
- Federal, County and City government facilities
- An arena
- Hotels

## Production Capacity

- 1.3 million pounds per hour of steam
- 10,650 tons of chilled water capacity
- 5 megawatts of cogeneration capacity
- Distribution network of 6.5 miles of steam and 2.0 miles of chilled water pipes





# Contract O&M: District Cooling at the “Galleria”, Houston, TX

## ABOUT THIS LOCATION:

In 2005, Veolia entered an agreement to provide comprehensive technical management services at The Galleria Shopping Center in Houston.

Veolia operates the existing central chiller plants and maintains all mall common areas, with 16 staff on site, and provides chilling for The Galleria's public ice rink.

## Scope of Services

- O&M for chilled water and heating equipment
- Building automation systems
- Ice rink equipment
- Domestic water systems
- HVAC, plumbing and general building maintenance
- Life safety systems
- Electrical distribution systems and switch gear
- Garage lighting
- Sub-metering

## Production Capacity

- 3,800 pounds per hour of steam.
- 10,850-tons of chilled water capacity.
- 2 MW of back-up electric generating capacity.



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