

Veolia Peer Review Operations Update

May 18, 2015

Agenda

- Background
- Water Treatment & Quality
- Wastewater Treatment & Quality
- Asset Maintenance
- Underground Assets
- Energy Management
- Questions



Background

- DWSD is less than 3 years into operational independence
- Organizational change considered a 5 year process – expected completion in FY 2018
- Peer Review done in compressed timeframe – 4 months



Key Messages

- **General Consensus**
 - Validation of DWSD's overall strategic direction
- **Agree and in process / planned**
 - Investing in People and Assets
 - Right-sizing Capacity
 - Implementing Operational Enhancements
 - Prioritizing Capital Investments
- **Getting it right when it counts**
 - Best practices
- **Exceptions**
 - Public versus Private
 - Policy choices – governing Board, customers and regulatory agencies



Water Treatment & Quality



Water Master Plan – CIP Changes

- Changes in the Water Master Plans (2004 and 2015)
 - Change in scope / direction
 - 14 Major plant upgrades (Master Plan – 2004) removed from current CIP
 - \$600 Million savings (Capital cost reduction) by 2035

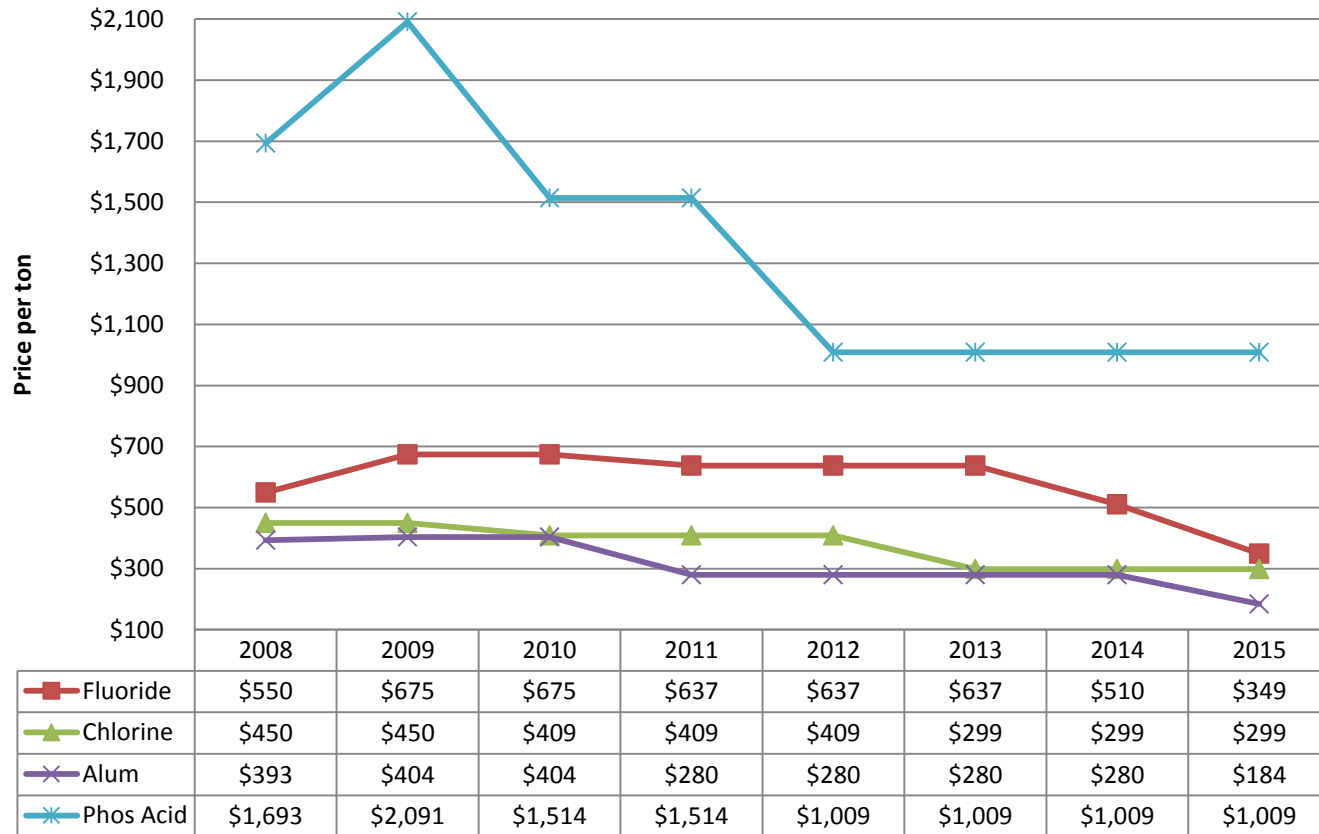
Category	Projected expenditures	Time Frame
Master Plan 2004	\$9 Billion	50 Years
Master Plan 2015	\$3 Billion	20 Years
Difference	\$6 Billion	30 Years



WTP – Optimize Chemical Feeds

Unit Cost Savings

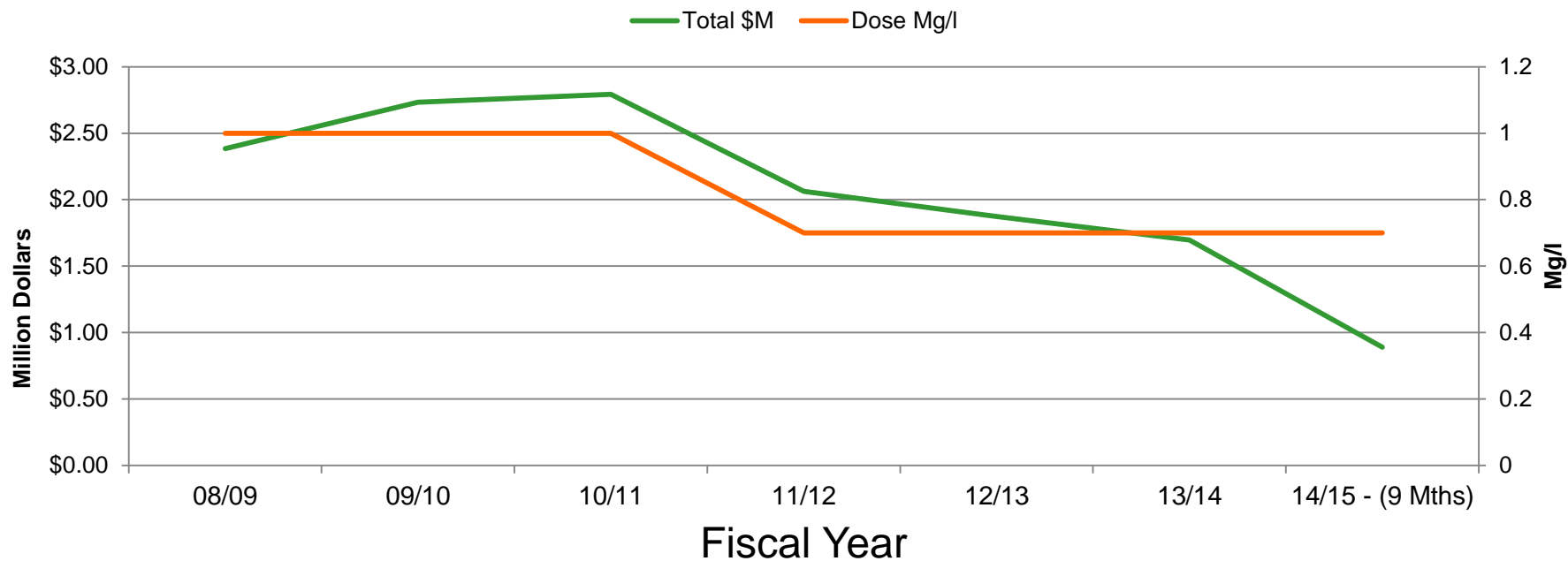
Chemical PO Pricing



WTP – Optimize Chemical Feeds

Fluoride

Fluoride Dosage and Cost



WTP – Unit Cost Savings for Primary Chemicals (FY15 as compared to FY14)

Chemical Commodity	Realized Savings
Aluminum Sulfate	\$480,000
Fluoride	\$180,000
Liquid Chlorine	\$70,000
Phosphoric Acid	\$30,000
TOTAL SAVINGS (Annual)	\$760,000



Minimize Chemical Dosage

WTP changes *not recommended*

■ Phosphoric Acid – Corrosion Inhibitor

- Reduction could lead to increased lead levels in finished water, maximum contaminant level goal (“MCLG”) for lead is 0
- Changes for plant tap and dosages require Michigan Department of Environmental Quality (“MDEQ”) approval
- Distribution system study would be needed to verify lower dosages would reliably achieve regulatory requirements (estimated annual savings \$450,000)

■ Pre-treatment reduction in Chlorine

- According the Surface Water Treatment Rule, Pre-chlor is needed to meet the Contact Time (CT) value for log removal for Crypto and Giardia for the filter treatment process



WTP – Optimize Unit Processes

Water Operations Process Implementation Savings

Category	Expected Savings	Time Frame
Process Change 1. Direct Filtration at Lake Huron 2. Liquid Oxygen removal	\$420,000	12 – 24 Months
Chemical Alternative 1. Alum Replacement / Sludge processing savings	\$79,000	12 – 24 Months
Process Optimization 1. NE Filter Repairs 2. WWP Highlift Automation	\$250,000	12 Months
TOTAL SAVINGS (Yearly)	\$749,000	12 – 24 Months



Wastewater Treatment & Quality



Plant Operations

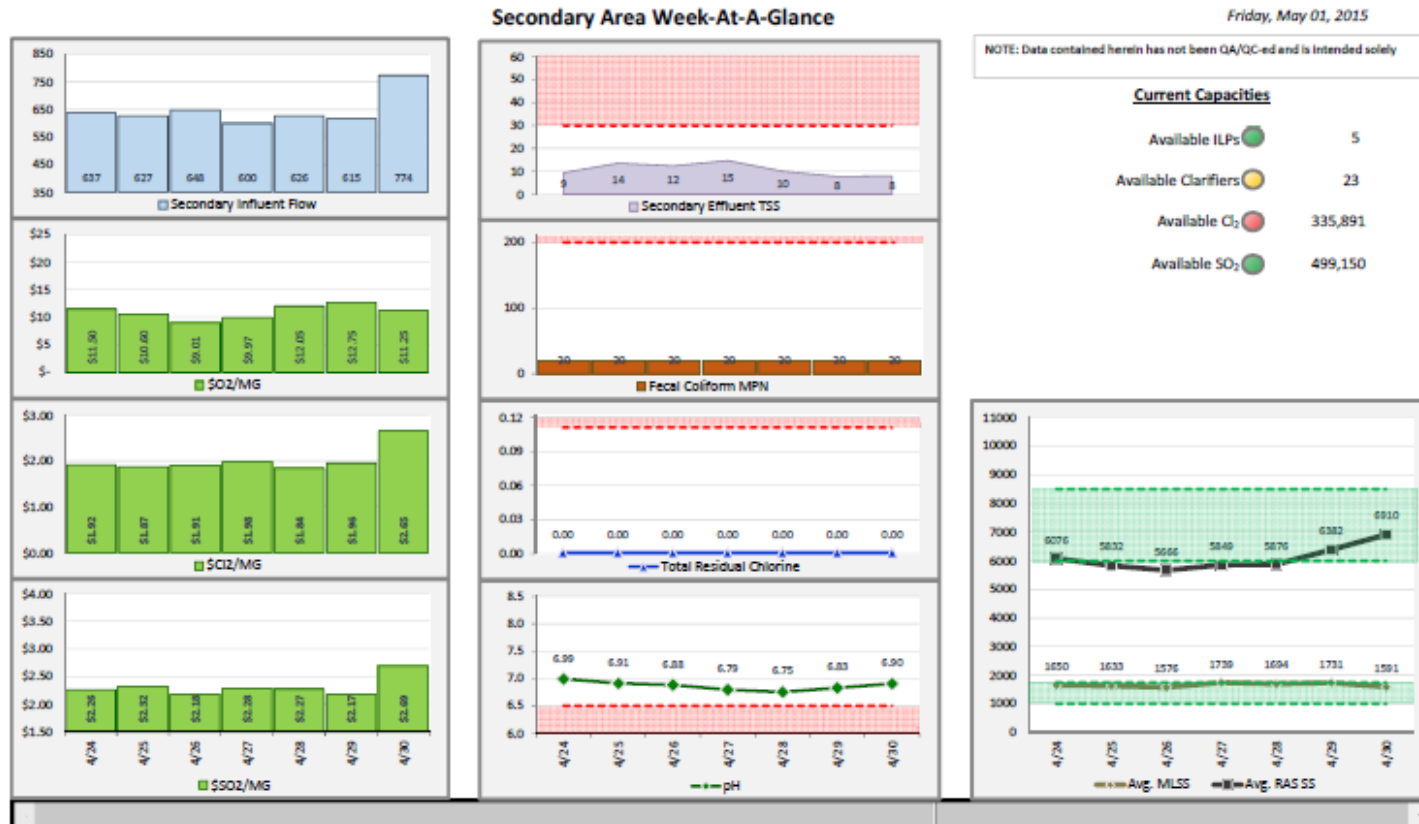
Agree and in process

Recommendation	Operational Status
Improve decision-making through SCADA and data management	<ul style="list-style-type: none"> Automated shift reports improves operational performance and save 2 person hours/shift or 42 hours/week (Annual Saving: \$70,000)
Evaluate opportunities to serve potential new customers	<ul style="list-style-type: none"> Wastewater Master Plan process to be initiated August 2015
Optimize and automate aeration process	<ul style="list-style-type: none"> Pilot plan to test 2 deck operation drafted – Testing in August 2015 Planned PC-796 (\$24M) Construction start 8/2015 (36 months) Annual savings upon completion: \$750,000
Optimize and automate chlorination-dechlorination process	<ul style="list-style-type: none"> In design - Construction start 11/2015 (24 months) Annual savings: \$300,000



WWTP Dashboard

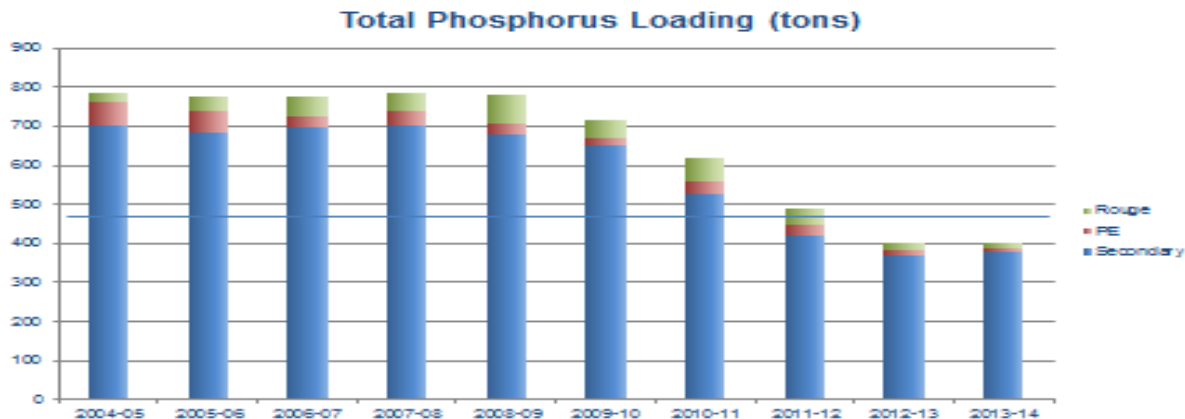
Oxygen, Chlorine & Sulfur Dioxide tracked daily Cost/MG



Minimize Ferric Chloride *not recommended*

- Policy Decision
 - Current removal has resulted in 400 metric tons/yr. to Lake Erie 48% reduction
- DWSD's WWTP phosphorus removal is being used as the standard of achievement throughout the Lake Erie watershed!

Phosphorus Loading



Current FY Cost Savings

Category	Annual Savings
Ferric Chloride	\$345,560
Pure Oxygen Optimized	\$4,601,346
In-source Hazardous Response	\$1,200,000
Improved SCADA	\$70,000
Aeration Process Optimized	\$750,000
Chlorination-dechlorination Optimized	\$300,000
Reduce polymer dosage	\$750,000
Lower wet tonnage	\$2,592,000
Laboratory restructure	\$1,430,000
Total estimated annual savings	\$12,038,906



Asset Management



Cost Savings (Reductions, Improved SOP)

Veolia Recommendations

- Update fleet and heavy equipment maintenance policies and systems
- Reduction in Fleet Size

DWSD Feedback / Status Update

Category	Realized Savings
Reduced Fleet Maintenance Costs	\$ 692,000
Improved Policies and System	\$ 40,000
TOTAL Annual Savings (Beginning 2017)	\$ 732,000

- Expected maintenance savings in reduced fleet size to be approximately 33%
- Improved fleet and heavy equipment maintenance policies and systems to have a costs savings of approximately 3%

* Estimated figure based on preliminary forecast



Underground Assets Field Services



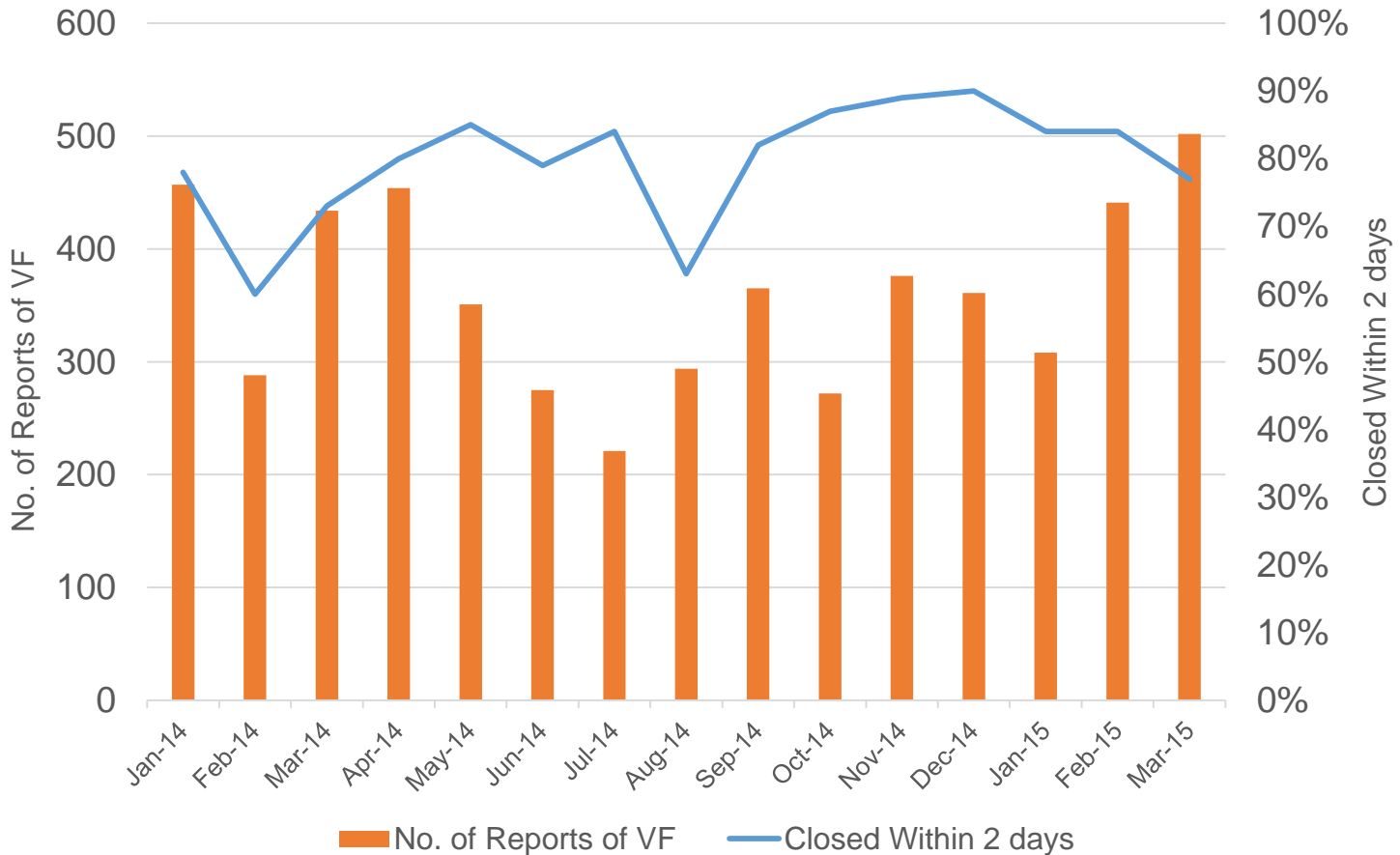
Field Service Response Commitment

Service Request Type	Response Commitment	Resolution Commitment
Running water in Abandoned Buildings	24 Hour Response	48-hour resolution if department can shut water off at curb stop 4-day resolution if department needs to schedule a dig crew
Water Main Break	24 Hour Response	4-day resolution if department needs to schedule a dig crew
Fire Hydrant Issues	24 Hour Response	4-day resolution for minor repairs 5-day resolution if department needs to schedule a dig crew
Missing Manhole Covers	24 Hour Response	24-hour “make safe” resolution for non-DWSD manholes 24-hour replacement resolution for DWSD manholes 30-day resolution on DWSD rebuilds
Clogged Catch Basins	24 Hour Response	30-day resolution based on priority



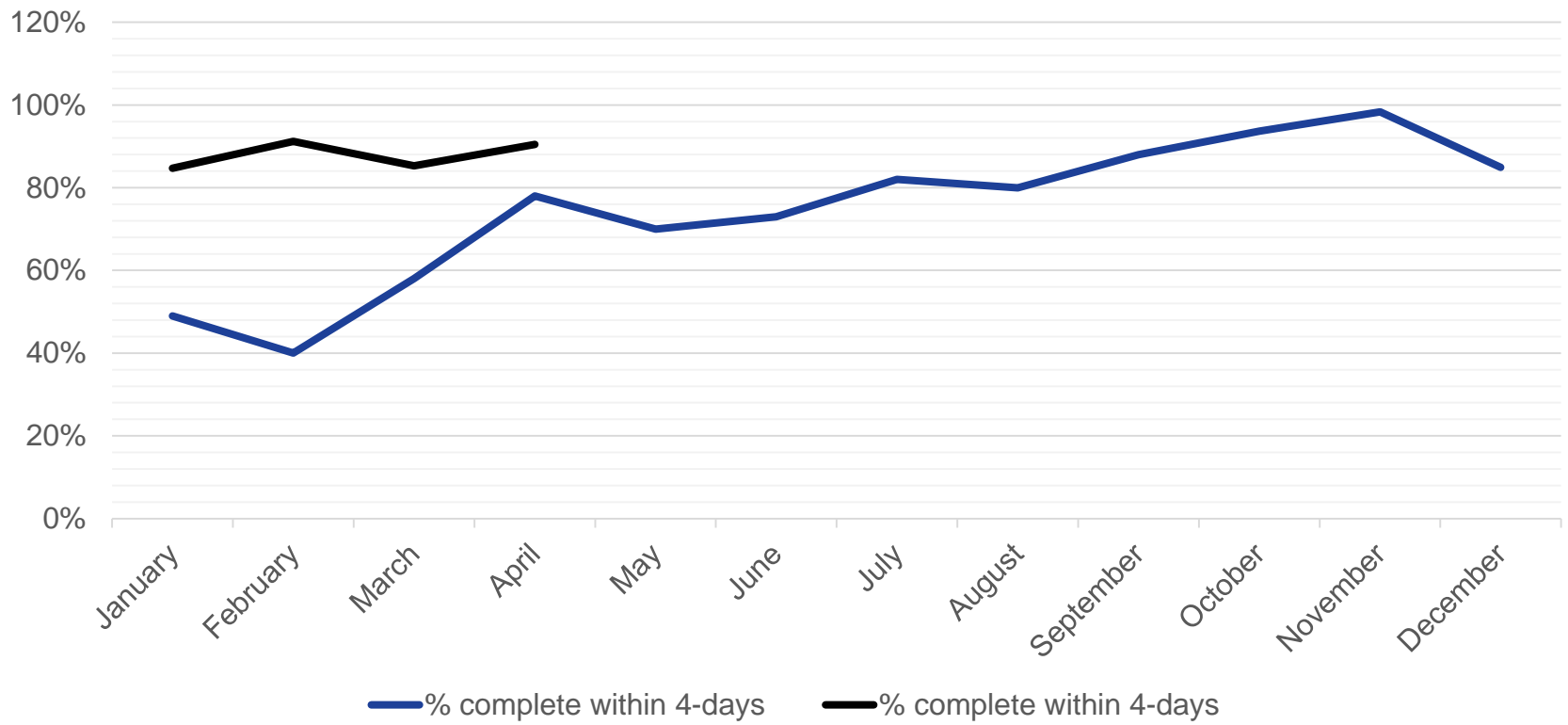
Vacant Flooding

2014 - 2015 Vacant Flooding



Water Main Breaks

Water Main Breaks Calendar year 2014 & 2015



Cost Savings

(Reductions, Improved SOP, Improved Technologies)

Veolia Recommendations

- Implement Fast-reaction Team
- GPS Tracking

DWSD Feedback / Status Update

Category	Realized Savings
Water Main Breaks	\$ 7,387,000
Vacant Flooding	\$ 1,339,804
GPS Tracking	\$ 200,000
Total Savings (2015)	\$ 8,926,800

- Increased response to the following will improve public safety and reduce risk of claims: Fire Hydrant repairs, Missing Manhole Lids, and Clogged Catch Basins.
- Study of Vehicle usage patterns will help eliminate wasted recourses.

* Estimated figure based on preliminary forecast



Energy Management



DWSD and master planning team are taking a comprehensive look at energy management

- New direct relationship between DWSD and DTE
- DTE - DWSD contract structure, collaboration to mitigate summer mid-afternoon peak usage
- Filter backwash schedule and other demand management protocols
- Expand number of booster pump stations on seasonal schedules
- Identify feasible use of solar, wind, and hydraulic turbines
- Rate incentives for customers



GLWA January 2015



Annual Utility Baseline Overview Six Sites

Current Situation

	Springwells Water Plant	Lake Huron Water Plant	Water Works Water Plant	West SC Pumping Station	North SC Pumping Station	Imlay Pumping Station
Natural Gas	\$ 266,712	\$ 196,933	\$ 620,926			
Electric	\$ 5,322,424	\$ 7,750,810	\$ 2,814,178	\$387,525	\$ 3,041,797	\$ 3,224,970
Sewer	\$ 170,000					
Chemical	\$ 1,630,691	\$ 1,731,355	\$ 2,745,932			
SubTotal	\$ 7,389,827	\$ 9,679,098	\$ 6,181,036	\$ 387,525	\$ 3,041,797	\$ 3,224,970

Utility Total: \$29,734,253



Improvement Measure Opportunities

Improvement Measure Opportunity	Springwells WTP	Lake Huron WTP	Water Works WTP	West, North, Imlay Pumping Stations
Building Automation	X	X	X	X
Heating	X	X	X	X
Ventilation	X	X	X	X
Cooling	X	X	X	
Dehumidification	X	X	X	
Steam	X		X	
Lighting	X	X	X	X
Variable Frequency Drives	X	X	X	X
Chemicals	X	X	X	



2015 Efficiency Improvement Project



- Annual Targeted Utility Savings: \$900,000
- Improvements investment up to \$12,000,000

Siemens Project Goals



- Operational Efficiency
- Guaranteed Savings
- Neutral or Positive Cash Flow

Information Technology and Data



Information Technology and Data

Agree and planning

Recommendation	Operational Status
Build a highly qualified team at the IT Department to enhance service delivery	<ul style="list-style-type: none"> • Interviewing IT Management candidates this week (3 positions) • Posting three IT roles (11 positions) this week. • Leveraging Oakland Country's G2G platform to augment GIS team beginning this week.
Establish a Project Management Office to oversee IT processes, procedures and project delivery	<ul style="list-style-type: none"> • This is currently In process as role within ITS Administration's. • Completion date: June 30, 2015.
Develop procedures to improve process management	<ul style="list-style-type: none"> • Currently underway. Implementing new Project Management, Change Control and IT Security practices. • Completion date: June 30, 2015.
Validate KPIs and SLAs with key business application sponsors	<ul style="list-style-type: none"> • Unplanned, but will be incorporated into application stabilization process. • Completion date: January 2016.



Information Technology and Data

Agree and planning

Recommendation	Operational Status
<p>Reprioritize IT projects, focusing on the existing five IT projects that align with the general business strategy; providing quality service to the customers of DWSD.</p>	<ul style="list-style-type: none"> • WAM and GIS are moving to operating models where the business users will be the owners and priority setters for the applications. The GIS governance program is in place, as part of an overall GIS Operational Plan. The WAM governance program is in place but very new. • Major IT projects, many of which are infrastructure based, have been vetted with the IT Leadership Board, and are proceeding as planned, especially where there are immediate business needs.
<p>Strengthen IT Helpdesk function</p>	<ul style="list-style-type: none"> • Currently underway. 3 new staff. Implementing ITIL based business process supported by Dell KACE Implementation. • Completion date: June 30, 2015.



Information Technology and Data *Disagree*

Recommendation	Operational Status
Recommended that the IVR projects be suspended	<ul style="list-style-type: none">• After review with City of Detroit CIO, this effort is moving forward.• Live on May 19th.
Develop a three-year IT strategic plan	<ul style="list-style-type: none">• Not planned. IT Director's recommendation is to implement current projects, re-staff ITS and stabilize systems first, then proceed with a IT Strategic Plan, as a component of an overall GLWA strategic plan.



Questions

Thank You!

