



Detroit Water and Sewerage Department's STATUS and RESPONSE TO VEOLIA RECOMMENDATIONS

Veolia Recommendation	Page Ref. No.	Status
Investing in People		
A program to communicate to the organization a commitment from senior management and political leadership that, both in terms of numbers and qualifications, the future GLWA organization will be designed for its new vision and mission, so as to reduce current uncertainty and get buy-in for the upcoming changes, which Veolia believes would increase morale and the odds of successful transformation.	ES-9	Operational Status – Agree.- Director’s Report, Road Shows, team established for Newsletter during the Organizational Transition.. Executive Management remains committed to doing road shows in the very near future. The Transition effort for GLWA/local DWSD standup is assisting in confirming content for messaging.
An effort to evaluate the current personnel (needs assessment) in order to determine where they best fit in the organization and help them find positions that meet their capabilities, interest and potential. This assessment would complement work already done and would be designed to take it a step further and ensure employees fully understand where the opportunities are for them and how they will be helped to get there. It is also a critical step in identifying the skill gaps that need to be bridged to get to a high performance organization.	ES-10	Operational Status – Agree.- In Progress. During the placement process, employees had the opportunity to complete self-assessments for various positions. That information will be turned into a training tool, foundation for performance assessments and eventually succession planning for career paths for employees. Additional detailed assessments are occurring in operational areas with similar purposes.
Implementation of a training program to upgrade skills and competency to close the gaps between individual competency and organizational needs.	ES-10	Operational Status – Agree.- We are currently training throughout the organization – on the job, formal class room, regulatory and safety annual requirements (e.g., Hazmat) and title specific. For example, in September 2014 for every Field Service Tech various skill sets (e.g. CDL). The office of Organizational Development is drafting a comprehensive training plan.
Investing in Assets		
Centralize the maintenance function at each of the water plants and the wastewater plant; with maintenance staff configured in teams that reflect the amount of activity required at these facilities.	ES-11	Operational Status –Disagree.- This is the former design structure of the organization which did not foster responsibility or accountability. The new structure will be evaluated for effectiveness and additional adjustments made as necessary.
Develop and implement a comprehensive maintenance strategy that is focused on developing a maintenance culture in the organization and improving the condition of the assets.	ES-11	Operational Status – Agree.- Asset Management (AM) is in process, facilitated by EMA which began in August/2013 In the Water Supply Division since June of 2014, maintenance strategies are discussed and critical priorities are set during inter-plant Maintenance Team Leader meetings.
Complete a comprehensive condition assessment, which would include vibration, oil and thermography analysis as well as pump curves.	ES-11	Operational Status – Agree.- Included within implementation of a robust asset management program. The WWTP plant has been conducting vibration analysis for two years through a contracted resource and has purchased IR equipment and trained each process area team in basic thermography, and pump curves are routinely

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		performed on the main lift pumps. Oil analysis is routinely conducted on transformers. The asset management program will verify frequencies, increase training in use of thermography and improve pump monitoring.
Perform a “criticality” assessment; as this is urgently needed to identify equipment and assets that may have severe consequences to the assets or impact compliance should they fail.	ES-11	<p>Operational Status – Agree.- Included in AM contract and in process A criticality assessment has been completed for WWTP and WWP identified critical assets. Other assets are scheduled for criticality assessment. WAM is being configured to capture the critically assessment.</p> <p>In late 2013, a criticality assessment was done at WWP on a cross section of targeted assets. This assessment provided valuable information on the life expectancy of those assets. Those findings were presented to the Executive Steering Committee.</p>
Implement a Reliability Centered Maintenance (RCM) approach for critical equipment.	ES-11	<p>Operational Status – Agree.- RCM specified in AM contract. Streamlined RCMs are in process of being developed for all critical assets. This has been completed for the WWTP. Other assets will also be included as a full asset management program is implemented. WAM is being configured to accept this information into its Failure Modes and Effects Analysis (FMEA) module.</p> <p>The assessment done at the WWTP and WWP used the RCM methodology.</p>
Evaluate the current CMMS approach and implementation schedule.	ES-12	<p>Operational Status – Agree.- Included in AM contract therefore in process, WAM implementation is being coordinated by DWSD between HP and EMA to ensure DWSD appropriate full WAM implementation.</p> <p>IT Status - This effort is underway. WAM has many stakeholders and it is important that they be managed effectively, and with the enterprise in mind. To meet that need a WAM Governance program is being implemented that will be used to govern the use of WAM. The core team is being identified and will report to the Transition Team (Executive Leadership). The goals of the WAM Core team are to stabilize WAM, implement an Enterprise Asset Hierarchy that can address the needs of the utility and establish the necessary business process and associated automation to address the October 2016 NPDES permit requirements around CMMS.</p>

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<p>Focus on Wastewater</p> <p>Investing in Assets</p>		
<p>Veolia recommends physical security measures at all facilities, in conjunction with assessing H&S procedural issues for effectiveness with proper enforcement from management.</p>	ES-12	<p>Security Unit Status - Veolia's DWSD Executive Security Summary Statement concurs with how DWSD has been operating since 2012. Several processes which adhere to Homeland Security, American Water Works Association and Environmental Protection Agencies to ensure the safety of our facilities, employees, and customers guidelines are ongoing.</p>
<p>Reviewing the current operations strategy and updating that strategy to reflect the optimization and effectiveness recommendations made in this report. This would include enhancing automation, optimizing the aeration process, as well as communicating the best practices to ensure all operators and managers know the approach. Training may also be necessary and would be implemented as required.</p>	ES-13	<p>Operational Status – Agree.- DWSD began optimization efforts with job designs; piloting the designs; placement into new classifications; training based on new requirements; shift to continuous improvement</p> <ul style="list-style-type: none"> • We are nearing completion of placements and initiating the training phase of this process. • We recognize that a complete updated formal operations strategy is needed, and anticipate compilation in FY 2016.
<ul style="list-style-type: none"> • Designating a single point of responsibility for operations for each and every shift so that there is clear leadership and accountability for decision-making. 	ES-13	<p>Operational Status – Agree.- This has been completed with the announcement of the Plant Manager and placement/designation of Team Leaders for each of the off-shift crews. Completed Nov/2014</p>
<ul style="list-style-type: none"> • Demonstrating a strong commitment to asset management, including all the aspects noted under “Invest in Assets,” and establishing a centralized maintenance team at each facility with responsibility for all aspects of maintenance planning and implementation. 	ES-13	<p>Operational Status – Agree.- Our commitment began with the AM contract and the technology support for this business process change. We are implementing the business process changes for operations.</p>
<ul style="list-style-type: none"> • Reviewing the capital investment plan to ensure appropriate projects are prioritized to upgrade the current condition of the wastewater treatment plant. 	ES-13	<p>Operational Status – Planned.- The expectation is to have AM feed into the CIP process. Future Capital Planning will more fully capture equipment needs after the full implementation of WAM and the asset management program. Currently capital needs are forecast based upon the triennial needs assessment and a manually developed scheduled replacement program.</p>
<p>Organization Realignment</p>		
<p>Reorganize Finance function to new structure</p>	ES-14	<p>Procurement Status - Undergoing consolidation of Procurement, Contracts & Grants and Materials Management along with restructure for launch by Mar 2015</p>

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Implement Operational Enhancements		
Initiating the capital upgrade and/or refurbishment necessary to return currently failed instrumentation and controls systems required to provide effective SCADA operations of critical plant systems.	ES-15	Operational Status – Agree.- <i>In process – Some SCADA operations equipment has been repaired or replaced as part of the optimization that has progressed to date. An initiative to fully review currently installed monitoring, control points and equipment repair such as appropriate, and identify additional which began in calendar year 2015. Currently automation and integration with Ovation is included in each capital improvement project. Fully automated flow control is being planned as part of the disinfection of primary effluent in wet weather project. (RRO2)</i>
Training personnel to operate more equipment from the Ovation (SCADA) system, supplemented with new auxiliary alarms that require the right people to acknowledge the alarms, to allow operation of the equipment.	ES-15	Operational Status – Agree.- <i>In process with current OJT Training – plans to have fully functional training program operational driven feeding into succession planning (career development) Part of the initiative mentioned above for 2015, which will include additional training for plant technicians.</i>
Turning the significant amount of data collected into information that can be used by the shift operators and laboratories for daily process control decisions.	ES-15	Operational Status – Agree.- <i>In process – created a dashboard of operational data which is used to illustrate graphically plant status, including certain operating costs, and train personnel. Work is continuing to automate these dashboards further including DMR component. The 2015 initiative above will include standard reports which can be displayed on Ovation terminals easily.</i>
Implement Operational Enhancements		
Given DWSD’s geographic footprint, the 1,000+ employee headcount, and the specific hazards that employees face, Veolia is sensitive to this particular aspect of DWSD’s and GLWA operations. Further, Veolia recognizes Operational Enhancements that providing security services can be accomplished by a security program that is resourced to protect the sites from outside intrusion and criminal activity, as well as be consistent with U.S. Environmental Protection Agency (EPA) guidelines concerning critical facility security.	ES-16	Security Unit Status - <i>Veolia’s DWSD Executive Security Summary Statement concurs with how DWSD has been operating since 2012. Several processes which adhere to Homeland Security, American Water Works Association and Environmental Protection Agencies to ensure the safety of our facilities, employees, and customers guidelines are ongoing.</i>
Implementing cost-saving initiatives in process optimization through automation and changes in operational strategies to reduce chemicals and power usage, resource demand and equipment wear and tear.	ES-16	Operational Status – Planned.- <i>In process and planned Detailed response in following pages. Optimizing Ferric Chloride based on phosphorous level and plant flow is planned.</i>
Implementing systems that improve data management and recordkeeping. This would involve implementing systems such as a Laboratory Information Management System (LIMS), which would	ES-16	Operational Status – Agree.- <i>In process with IT supporting the effort. Both LIMS and PIMS are scheduled for replacement.</i>

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allow DWSD to reduce excessive manual data handling and reduce the incidence of errors in management and regulatory reports.		IT Status – This is a system that that both water and wastewater is pursuing and an RFP is planned. ITS is working with water and wastewater to develop the specifications and an early draft of both LIMS and PIMS RFP’s are available. RFP publishing date: March 30, 2015.												
- Prioritize Capital Investments														
Veolia recommends physical security measures at all facilities, in conjunction with assessing H&S procedural issues for effectiveness with proper enforcement from management.	ES-17	Security Unit Status - Veolia’s DWSD Executive Security Summary Statement concurs with how DWSD since 2012. Several processes which adhere to Homeland Security, American Water Works Association and Environmental Protection Agencies to ensure the safety of our facilities, employees, and customers guidelines are ongoing.												
	ES-17	IT Status – Metco has been contracted to update the Water and Sewer Distribution layers. Metco has completed the water layer and is connecting the 30,000 fire hydrants to it now. That effort will be completed by June 30, 2015. Metco is beginning the process of updating the sewer distribution layer with enough detail that the layer can be used for sewer system hydraulic modeling. Metco’s source for the update process is DWSD as-builts scanned during another project; The completion date for the Sewer distribution layer is January 31, 2016.												
Integrating cross-functional on-the-job training into daily work activities.	ES-18	Operational Status – Agree. Ongoing with training support. <ul style="list-style-type: none"> • Operators are learning to perform light maintenance and change chlorine tanks. • Operators will be introduced to laboratory duties as Standard Operating Procedures for water analysis are under development. (By June 1, 2015) • Chemists perform light maintenance for water quality monitoring instruments and laboratory instruments. 												
Inventory/Asset Management & Oracle WAM														
Improve inventory control and management practices	ES-19	Procurement Status - <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Functional Area</th> <th># KPIs</th> </tr> </thead> <tbody> <tr> <td>Procurement</td> <td>14</td> </tr> <tr> <td>Supplier Performance</td> <td>6</td> </tr> <tr> <td>Materials Management</td> <td>8</td> </tr> <tr> <td>Contract Administration</td> <td>5</td> </tr> <tr> <td>Grants Management</td> <td>8</td> </tr> </tbody> </table>	Functional Area	# KPIs	Procurement	14	Supplier Performance	6	Materials Management	8	Contract Administration	5	Grants Management	8
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Organization Realignment		
Center processes on performance and align with Operations to build true partnership between procurement and operations	ES-19	Procurement Status - In progress to implement with restructure by Mar 2015; define functions in MOU and SLA that take effect in July 2015
Procurement Policies & Strategies		
Develop and integrate sourcing and pricing strategies in active spend categories to improve savings opportunities	ES-19	Procurement Status - Development of interim GLWA Purchasing Policies & Procedures; DWSD-R Policies & Procedures will be subject to MOU & SLA; benchmarking AIA, EJCDC and ATC to update contract terms & conditions as necessary and include assignment clause
Conduct market research to increase competition	ES-19	Procurement Status - In progress to gather market intelligence
Underground Assets: Focus on building actionable analytics		
Prioritizing among pressing corrective and preventative maintenance activities; and	ES-20	Operational Status - In Progress; In the beginning stages, PM assistance from operation titles to grant more time for corrective maintenance by maintenance technician, which will eventually move into predicative maintenance.
Implementing strategies with pre-defined KPIs and timelines.		Operational Status - In Progress; Vacant Flooding is designed to be complete within 2-days for non-dig up and 4-days for dig ups; water main breaks have a completion goal of 4-days – data is monitored and reported on weekly. More service level measures are being developed as work is changed and procedures are learned and improved for maximum efficiency.
Dedicating crews for preventative maintenance for leak detection and repair, sewer line cleaning, and sewer closed circuit television (CCTV) inspection after the work order generation process has been re-engineered.	ES-20	Operational Status - We are not at the design FTE, and therefore implementation of PM crews has slowed. Positions are budgeted for FY 2016
- Customer Service		
Supporting an integrated value chain approach by conducting a technology review to ensure that appropriate systems and tools are in place to serve both retail and wholesale customers	ES-22	IT Status - This effort is not currently scheduled. IT Director's recommendation, with City CIO's concurrence, is to finish the technology projects currently under way – IVR, ACD and Electronic Bill Pay and Presentment and the planned upgrade and “re-platforming” of EnQuesta to Linux and VMWare then evaluate the business and technology needs of the customer service organization.

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- IT and Data Management		
<p>Overall Approach to IT: Continuing to develop in-house capabilities and competencies to support critical business applications; reprioritizing and holding off certain ongoing IT projects based on business impact and existing capabilities; and developing a mid-term strategic plan with an enterprise perspective to align various systems through IT life cycle management.</p>	ES-22	<p>IT Status - ITS released CS-1677 "Information Technology Staffing" in January of 2015. The RFP seeks proposals from firms to provide staff augmentation services on a contract-for-hire basis for various Information Technology Services roles. The plan is to bring on 21-28 additional IT staff by June 30, 2015.</p> <p>IT Status - There is a concern that the various IT initiatives will not provide the expected value. 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 being established under a similar model, and will be up and running by March 31, 2015.</p> <p>IT Status - 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>
<p>It is also recommended that clear lines of communication be established in order to obtain the appropriate type and level of stakeholder involvement throughout the system selection, configuration and maintenance phases.</p>	ES-22	<p>IT Status - This is underway. As ITS is realigning itself to be a true business partner, it is seeking to improve the line of communication between the business and ITS. ITS Applications and GIS staff are being embedded on a 4 days on - one off rotation into the business areas that they support beginning with Customer Service where there are two staff that are deployed in this manner. As the staffing initiative matures, more ITS staff will be located with their customers, improving alignment between ITS and the business.</p> <p>Additionally, business cases are needed for any IT related business project, and the business must participate in the business case development.</p>
Moving Forward – Quick Wins		
<p>Optimize chemical feeds</p>	ES-25	<p>Operational Status – Agree.- <i>In process and planned. Automated ferric chloride feed has been designed, and installation is to be completed by Dec. 2015 at a cost of \$300,000. Savings to be confirmed.</i></p>

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Reconfigure number of aeration decks	ES-25	Operational Status – Agree.- Planned. This will require hydraulic and biological study before implementing. The dry weather and wet weather function of this plant requires very fast transition. If such study shows workability, extensive negotiations with MDEQ will be required. After oxygen optimization and energy efficiency are implemented, this will be evaluated. A short test of this in 2013 yielded mixed results.
Optimize pure oxygen usage	ES-25	Operational Status – Planned.- <i>In process and planned. A major capital upgrade and refurbishment of the aeration system is under design. Design completed by 3/31/2015 with construction beginning in the fall. The total cost of the project is \$24 Million and includes automation of oxygen control, sluice gate replacement, replacement of the intermediate lift pump and magmeters, piping modifications to increase flexibility of pump utilization and replacement of VFD for pumps #3 and 4.</i>
In-sourcing hazard response (HAZMAT) support	ES-25	Operational Status -- <i>Planned – Once employee placements are complete training will be begin to complete the transition from external contracted support.</i>
Implementing fast response teams for sinkholes, water main breaks, fire hydrants out of service, and missing manhole covers. (This will be discussed more fully in the separate Retail Transition Plan Amendment Report).	ES-25	Operational Status – Agree.- Already established: Field Service Technicians have designated the Investigator Crews as fast response teams to investigate and minimize every water distribution emergency
Conducting a criticality assessment of assets at the wastewater treatment plant immediately.	ES-25	Operational Status – Agree.- <i>In process through AM</i>
Developing Process Control Management Plans (PCMPs) at the WWTP	ES-25	Operational Status - Planned. Optimizing chemical feed will be strategically evaluated.

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<p>Reassessing major IT, GIS and WAM initiatives, which may involve slowing down implementation until there is certainty that the direction is sound and implementation is on the right track. This is a long-term investment that would form the foundation of the CMMS, and so it is important that the system is being populated with data with integrity</p>	<p>ES-25</p>	<p>IT Status - Understandably, there is a concern that the various IT initiatives will not provide the expected value. To address this concern, the following steps have been taken:</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. <p>The GIS governance program is in place, as part of an overall GIS Operational Plan, with an Executive Committee, Governance (Core) Team, Technical Team and Advisory Group established, top-ten GIS needs identified and, business cases, metrics and final plans in progress.</p> <p>The WAM governance program is being established under a similar model and will be up and running by March 31, 2015.</p> <ul style="list-style-type: none"> - 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.
- Quick Wins		
<p>Network Maintenance • GPS tracking for all vehicles • \$0.2 million</p>	<p>Table ES-4</p>	<p>IT Status – Planned for City vehicles to integrate with City Fleet Task Force recommendations. Business case needs development for GLWA. Members to include business owner and IT. Need to identify business requirements and outcomes.</p>
Utility-Wide Improvements		
<p>Needs Assessment - Perform a detailed needs assessment across the organization to determine where the skills and capabilities gaps lay to develop a plan to close the gaps in both organizational positions and individual capabilities.</p>	<p>3.A-6</p>	<p>Operational Status – Agree.- <i>In process through placement efforts, detailed assessments ongoing and plans to expand through training and performance management</i></p> <p>Organizational Development Status - <i>Employees have completed a self–assessment with a validation review by supervisors. This was done as part of the optimization placement eligibility process. We are currently working on a training optimization plan that will include another employee assessment for evaluating training and classification progression requirements.</i></p>

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<p>Define Learning Paths – Develop defined learning paths for critical operations roles, designed to obtain industry-specific licenses and/or certifications. Currently, in DWSD, water-operator certifications are primarily held by chemists, and the number of employees holding the highest level of wastewater certification is inadequate. Defined learning paths would clearly outline the steps and knowledge necessary to achieve these important certification requirements. This defined learning path would then be used to develop operators, using a very systematic, manageable process with clear outcomes.</p>	3.A-6	<p>Operational Status - <i>In process and planned – initial steps taken in the job description and level progression charts.</i></p> <p>Organizational Development Status - The training optimization plan is under development to address the career path and progression for the new classifications. Employees, the leadership team and HR will have specific roles to play in ensuring that employees are successful in acquiring the skills and subsequent licenses and/or certifications identified for each new classification. The scheduled due date for the comprehensive plan is June 2015.</p>
<p>Supervisory & Manager Training - Provide Supervisor and Manager training, with a priority on managing compliance with the law, communicating effectively, conflict management, coaching and mentoring fundamentals, and building trust.</p>	3.A-6	<p>Operational Status – Agree.- <i>Next step after placement - In process and planned</i></p> <p>Organizational Development Status - Leadership training began February 9, 2015. The first installment of training includes the in-depth review of work rules and policies. This first module touched on compliance, effective communication, conflict management, coaching and mentoring fundamentals and team building. Subsequent leadership modules will focus on these areas.</p>
<p>A – Operations Training Plant-specific technical training is designed to provide an understanding of plant systems and programs and subsystems operation, as well as be a foundation for vendor training. Training should be provided in the following general areas:</p>	3.A-7	<p>Operational Status – Agree.- <i>In process through OJT. Comprehensive Training Plan will address the remainder.</i></p> <p>Training has been initiated like the Power Distribution classes to meet the needs of operational staff. More training is currently being developed.</p>
<ul style="list-style-type: none"> • Plant Systems and Programs Training – Designed to provide staff with a thorough knowledge of the larger systems and programs required to operate and maintain the facility (e.g., process control, instrumentation and control systems, relevant plant-wide systems and software packages). 	3.A-7	<p>Operational Status - Other training is on-going with focus placed on PLC-Training (Rotork, Allen-Bradley, Ovations, etc...).</p> <p>This training is designed to identify operational efficiencies (I.E. Water Works Park highlift automation project) that can be achieved from technology.</p> <p>Organizational Development Status - Organizational Development has included in the training optimization component, an area of concentration on the overall plant operations for all levels of the organization. Included in the plan is a collaborative effort with each area of operations to identify and address the most effective way to offer training opportunities in system and plant operations.</p>

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<ul style="list-style-type: none"> • General Plant Training – Designed to cover areas not addressed in the plant specific technical category or vendor training. These areas include maintenance management concepts, laboratory systems and procedures, the logic and process for troubleshooting and health and safety regulatory training. 	3.A-7	<p>Operational Status – Agree.- In-house and vendor training to understand management procedures, evaluate and resign lab SOPs and on the job maintenance methodologies are initiatives that are on-going through the organizational optimization.</p> <p>Organizational Development Status - These elements will be addressed in the training plan. The training vendor has been identified and is working on the initial plan structure and timeline.</p>
<p>Customer Service Training – This service is highly specialized. For staff to be effective, specific training that includes the following is required:</p> <ul style="list-style-type: none"> • Skill-building training for call center agents, especially in call management techniques, to ensure high quality and efficient transactions between call agents and customers. • Provide effective call management and communication skills training, as well as targeted coaching (e.g., call structure, listening skills, effective questioning practices). 	3.A.7	<p>Organizational Development Status - OD has this in the cue and as a component of the comprehensive training program.</p>
<p>B – Maintenance Training For a system the size of DWSD’s, it is recommended that maintenance training, in the areas listed on Table 3.A.-2, be a core focus.</p>	3.A-8	<p>Operational Status – Planned.- <i>Appropriate staff has been provided very basic training in thermography, laser alignment and CMMS (WAM). Expanded training is being planned in these areas as is other training listed in table 3.A-8.</i></p> <p>Organizational Development Status - <i>The maintenance training is part of the overall training strategy.</i></p>
<p>C – Management and Supervisory Training</p>	3.A-8	<p>Operational Status – Agree.- Management training such as the Lean training is on-going. A Leadership Academy approach is under development.</p>

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<p>D – Environmental, Health, Safety and Security (EHS&S) Training Continuing focus in these areas is important to reduce injuries and accidents as well as maintain a safe and compliant work environment.</p>	3.A-9	<p>Operational Status – Planned.- <i>In process and planned</i></p> <p>Organizational Development Status - These topics have been identified and will be included in the overall comprehensive training optimization program. Similar calendars will be reinstated with current standards for EHS&S. We have also entered into a partnership with the International Union of Operating Engineers. This collaboration affords us the opportunity to participate in the unions well established training courses that meet mandated regulatory training requirements.</p>
<p>3. B Water Treatment and Quality</p>		
<p>One issue identified during personnel discussions conducted for this Report is that many of the plant managers are not licensed operators. In fact, only one licensed operator (of the required classification) is normally on staff at each treatment plant. The lack of sufficient licensed personnel onsite could lead to regulatory issues in terms of the State of Michigan Department of Environment Quality (Michigan DEQ)'s Staffing requirements in the future.</p>	3.B-5	<p>Operational Status – Disagree.- This is not correct. DWSD Water Treatment Managers are licensed, licensing is part of the chemist promotional series, minimum requirement is an F-3. All DWSD WTP Managers and Operational Team Leaders have the highest operator license issued by the state of Michigan (F-1). There is always someone on shift with a minimum of an F-2 license. With the job optimization process, the titles and responsibilities have expanded and training is on-going to require more licensed employees for succession planning.</p>
<p>3.B-1 A Conducting a more comprehensive personnel assessment</p>	3.B-5	<p>Operational Status – Agree.- This is in progress.</p> <ul style="list-style-type: none"> • In 2012 with the restructuring efforts done under a contract with EMA which included Job designs, piloting and placement. • The placement of some of the newly designed titles began in November 2014 and is nearing completion. • We are working closely with Organizational Development to finish filling the new titles for staffing our plant. • We have completed Administrative, Maintenance and Laboratory titles. Operations titles are in process.

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3.B-1 B Building primary process control decision-making and leadership capabilities		<p>Operational Status – Agree.- Licensing & Training</p> <ul style="list-style-type: none"> • All of the Water Treatment Plants encourage water operator licensing and certification. • Twenty-two out of twenty-five laboratory personnel have an F2 certification or higher certificate at the five water treatment plants. • Plant Manager at several of the facilities are also certified with distribution licenses (S-series). • We take advantage of the department’s encouraged participation with the DEQ with regular annual attendance of events Operators and Maintenance Day, Fall and Spring Regional Seminars. • Third party training is progress and to my understanding will be launched after the placements of the new titles are made. <p>Process Controls Targets This is being done -</p> <ul style="list-style-type: none"> • Process Control Targets have been established and are shared with staff in the form of memos and SOPs. • The employees also are trained on what corrective action to take during abnormal conditions. • Managers have started training in Lean Six Sigma and other leadership building skillsets
Transition to holistic planning in collaboration with capital planning.	3B-6	<p>Operational Status – Agree.- One engineer is assigned to each WTP in accordance with the new organizational chart. In the future, more coordination is expected among plant personnel engineers and the engineering group related to how the improvement will correct either regulatory or operational issues or impact system operations. This process will streamline areas of improvement for the needs and justification of capital projects. With the development of an Asset Management Program, the needs assessment from the treatment and distribution facilities will be highlighted for capital projections. Full Department coordination will occur in the System Planning function.</p>

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Operator Training	3B-6	Operational Status – Agree.- Based on Standard Operating Procedures operators are trained in unit processes for the Plant in house or the utilization of a third party vendor. Employees are also cross trained between the titles whenever possible. Also, there is a Plant and Water Quality Manager that provides water treatment training courses and a Micro-biological class that is certified by MDEQ. In addition, the operations lead at the Southwest Water Treatment Plant is a State of Michigan Laboratory Practical Examiner, and is a member of MDEQ’s Examiner Committee.
SOP’s need to be developed for each unit process and chemical feed system at the water treatment plants. These SOP’s should be living documents with frequent updates.	3.B-6	Operational Status – Agree.- An aspect of organizational optimization is updating business processes and SOPs especially with the classification changes. <ul style="list-style-type: none"> • Operators are evaluating SOP’s to determine validity for current mode of operation, ease of understanding, and improvement. • Chemists are reviewing, revising, and creating SOP’s. • Laboratory SOP’s will be subject to annual review. • SOP’s are being revised according to EPA guidelines. http://www.epa.gov/quality/qs-docs/g6-final.pdf. Some of the SOP’s have been ongoing since 2013. When new processes are identified, it is required that the procedure is documented.
Water treatment process is a batch-type process at the direction of the operators at the Central Services Facility	3.B-7	Operational Status – Disagree.- This is not true. Veolia apparently did not understand that treatment is controlled from data (water quality measures) that Systems Control does not see. Plant personnel are making the measurements that guide treatment decisions. SCC (CSF) are responding to demand changes for finished water (which has been fully treated).
3.B - Water Treatment and Quality		
Access the functionality of the automatic operations in SCADA and correct any deficiencies.	3B-8	Operational Status – Agree.- System designs were for monitoring and not controlling systems – it was recognized in the optimization that efficiency is gained with SCADA control and therefore plans to upgrade SCADA are in the works. As an example, the highlift operations are in the process of automation, and will be tied to the SCADA system in the control room. Pilot is being started on one of the high lift pumps for controls. This alignment will help automate functions and allow for improved operational transitions from Systems Control Center and plant processes.

Veolia Recommendation	Page Ref. No.	Status
Install a single database management system	3B-8	<p>Operational Status – Agree.- WWP Plant employees use the server water-mechanical maintenance-MM data –water plants-WWP for operational and maintenance reporting data. A common report has been developed on this server for Water Supply Operations for Daily Reports. Operations is planning to work with Information Technology for a global Enterprise Resource Program that will allow information to be tracked more seamless from one data source.</p> <p>IT Status - This is not planned. Business case needs development. Members to include business owner and IT. Need to identify business requirements and outcomes.</p>
Assess the functionality of the automatic operation in SCADA and correct any deficiencies.	3.B-8	<p>Operational Status – Agree.- Most HL pumps are automatically and remotely operated through the Ovation system. The Ovation System was recently upgraded in which the back-bone structure was changed and the operating platform was switched to Windows 7 from Windows NT. There is an ongoing O & M process that has been implemented at Springwells Water Plant to upgrade the technology for chemical feed system and to automate the filter backwashing controls. Water Works Park is in the process of automating the highlift operations.</p>
Improve Asset Management	3.B-9	<p>Operational Status – Planned.- An asset management team has been formed with plant representation at WWTP. This system will be working in conjunction with the WAM CMMS to provide greater response to preventative maintenance items that will reduce corrective work orders and lead to predictive scheduling. Plans on how to roll out AM in the other operational areas is forthcoming.</p>
Repurposing/closing treatment plants	3.B-9	<p>Operational Status – Agree.- This is being studied in the Water Master Plan CS-1528. The repurposing of the plant will help control unnecessary capital projects that are not needed to meet the customers demand.</p>
Process Optimization, Energy and Chemicals		
<i>Evaluate opportunities to serve potential new customers</i>	3.B-12	<p>Operational Status – Agree.- <i>This is being addressed under the Market Plan of the Water Master Plan which is being generated.</i></p>

Veolia Recommendation	Page Ref. No.	Status
Rapid Mix systems at the NE did not appear to be operating	3.B-13	Operational Status – Agree.- Six units out of eight are operating properly. The increase in repairs was necessary to reduce the chemical (alum) addition that was required from inoperable equipment. With the expanded duties of the employees, increased attention is dedicated to the facility for improved efficiency that will help maintain the facility until it is re-purposed.
Another opportunity to utilize excess capacity may be to bring in additional customers to use the water system capacity. Candidates for this include the City Toledo, Ohio, which experiences regular influent water quality issues due to the summer algal conditions in western Lake Erie. This type of an approach should be done in conjunction with the right-sizing of assets, based on system need, hydraulic modeling, and potential repurposing of the Great Lakes Water Authority (GLWA)'s WTPs.		Operational Status – Agree.- This is being addressed in the Master plan update.
<i>Relocate fluoride feed to reduce loss</i>		
<p>Northeast and Springwells WTPs. Fluoride application to the source water for the Northeast and Springwells WTPs usually results in overfeeding of fluoride to compensate for fluoride loss in coagulation and filtration processes. It is believed that about 0.2 mg/L of excess fluoride feed is necessary to produce the desired fluoride levels in treatment for these two plants. Current dosing is approximately 0.8 mg/L to both the Northeast and the Springwells WTPs, when a 0.6 mg/L dosage is needed.</p> <p>Recent changes in fluoridation, as suggested by the Centers for Disease Control (CDC), are being practiced now at all five of the WTPs in order to produce finished water fluoride levels at 0.8 mg/L. Previous plant operations practiced finished water fluoride levels at 1.0 mg/L. With the adjustments already implemented by DWSD, the small reduction in fluoride application for all five treatment plants would generate minor savings.</p>	3.B-13	<p>Operational Status – Agree.- In September 2011, DWSD began reducing fluoride dosage levels to meet the CDC recommendations of 0.7 mg/L in the distribution system. DWSD is maintaining CDC's recommended optimal level of 0.7 mg/L in the distribution system to protect public health and reduce dental caries and prevent mottling of teeth in children and adults.</p> <p>This change in operating parameters should not be altered until legislation addresses the need for fluoride in drinking water. Once this is complete, conversations can be initiated on the requirement and the capital investment necessary to achieve any change in the requirement.</p>

Veolia Recommendation	Page Ref. No.	Status
<p>Cryptosporidium. Ozone is not needed to inactivate Cryptosporidium based on the Bin 1 classification.</p> <p>Research data demonstrates that typical ozone dosages needed for TOC destruction are about 3.9 mg/L for each mg/L of TOC. The TOC content averages about 1.7 mg/L in the source water supplied to Water Works Park WTP. The expected ozone dosage to destroy at least 50% of the source water TOC is 3.4 mg/L. Typical ozone dosages are not sufficient for TOC reduction at the Water Works Park WTP. Ozone dosing is likely used only for taste and odor control at this treatment plant, and the current dosages are not sufficient for typical taste and odor control treatment based on ozone dosages at other regional surface water plants. It was concluded that ozone is likely not needed for Water Works Park WTP.</p> <p>Current operating costs for ozone were estimated based on average dosages used in treatment, customary electricity consumption to produce ozone from liquid oxygen, typical costs for nitrogen boost operations (used to increase generator efficiency), and operating costs for ozone destruct operations. An estimate of \$0.81 per pound of ozone produced relates to annual ozonation costs of approximately \$104,000. Sodium bisulfite is fed to the water to quench ozone residuals that remain after treatment. Additional post-chlorination at the filter effluent flow is used to produce the necessary finished water chlorine residuals for disinfection operations (contact time, CT) and for distribution residual maintenance</p>	3.B-15	<p>Operational Status – Agree.- In the 1990’s several taste and odor incidents occurred Methy-Isoborneol (MIB) and Geosmin were found to be the compounds. Powder Activated Carbon (PAC) was not found to reduce the taste and odor compounds in the drinking water. PAC concentrations needed to be at least in 20-30 mg/L range to adequately control the taste and odor based on bench top studies conducted by DWSD consultants. Ozone was found to eliminate the odor compounds.</p> <p>DWSD will conduct the second round of Long Term 2 (LT2) monitoring beginning in April 2015 the results will indicate if DWSD is still in Bin 1 and whether additional treatment will be required.</p>
<p>Fluoride application should be to the filtered water at the Northeast and Springwells WTPs in order to minimize fluoride loss during treatment. Relocating proper fluoride feed equipment in these two plants would eliminate overfeeding fluoride for treatment and could result in additional operational savings.</p>	3.B-16	<p>Operational Status – Agree.- There may be an elimination of fluoride as a requirement in drinking water – this legislative change would eliminate the need for capital cost and space evaluation at the plants to feed directly from the identified locations.</p>

Veolia Recommendation	Page Ref. No.	Status
3.B-5 - Process Optimization, Energy and Chemicals Baseline & Benchmark		
<i>Minimize Phosphoric Acid Feed</i>		
3.B-5 A Minimizing chemical dosages	3.B-16	<p>Operational Status – Disagree. Analysis of where dosage reduction need to occur is appropriate with an evaluation of policies and regulatory standards and not just for cost savings. Public Health and Safety is the number one priority.</p> <p>Coagulation Optimization: Improvement ideas to minimize chemical cost, we are doing this.</p> <ul style="list-style-type: none"> • We have explored the use of alternative coagulants by vendor conducting jar tests. The studies suggested that alum (Aluminum Sulfate) was the best coagulant for Southwest. • Also, we are optimizing our coagulant fee with the use of a Streaming Current Detector and running UV-254 on each shift. • An online UV-254 instrument has been purchased and will be installed on the raw water sample line soon for continuous monitoring. • We are also utilizing our particle count data in correspondence with the UV-254 and Streaming Current data to streamline our coagulant dosing. <p>Optimize Chlorine Feed:</p> <ul style="list-style-type: none"> • Eliminating pre-chlorination for savings invokes a study be done first. Any potential savings sought from such an action would be possibly eliminated by the increase in post chlorination needed to offset such a move. We are still in the planning stage for this one. <p>Minimize Phosphoric Acid Feed: Impacts our Lead and Copper policy choice to ensure public health and safety. We have been making use of an online phosphate residual analyzer since 2003. Cutting the dosage from 1.00 ppm to 0.60 ppm requires a change in departmental policy.</p>

Veolia Recommendation	Page Ref. No.	Status
Explore use of alternative coagulant feed	3B-16	<p>Operational Status – Agree.-</p> <ul style="list-style-type: none"> • WWP Plant started pilot testing in its pilot plant for DelPAC 2020 and 1960, Usalco Company’s product in May-2014 simulating the full scale plant. WWP Plant provided all the equipment for the test and employees are helping the company representatives to complete this project and get the results under different conditions. Tests were run for DelPAC product, with alum and then parallel for alum and the product. <ol style="list-style-type: none"> 1. Test for DelPAC1960 and 2020 was done. 2. Test for Alum was done. 3. Test for DelPAC 1960 and 2020 and alum were done under same conditions. <p>These tests were started in June-2014 and were completed by August-September-2014 (Warm weather conditions).</p> <ul style="list-style-type: none"> • There is no contract involved. • Status: Same kind of tests is being conducted for cold weather conditions. There is potential savings. If successful, alum can be replaced with DelPAC. DelPAC has less dosage needed as compared to alum. <p>Operational Status – Agree. There is potential cost savings involved with reduced coagulant dosage and reduction in sludge production and processing.</p> <p>If the final determination indicates that the testing was favorable through the testing of different seasons (weather conditions), then the information and conversation can begin on the capital investment needs.</p>
Optimize chlorine feed	3B-17	<p>Operational Status – Agree.- The Plants feeds the minimum dosage necessary to maintain regulatory compliance throughout the treatment process and the distribution system.</p> <p>Chlorine and other treatment measures have been identified as effective measures in the treatment process for the control of Microcystin toxin that caused water quality issues in Toledo, Ohio. Technology will continue to be investigated to achieve improved testing practices for reduced dosages.</p>

Veolia Recommendation	Page Ref. No.	Status
3.B-5 B Optimizing unit processes	3.B-20	<p>Operational Status – Agree.- Conduct Plant Metering Assessments: This is in progress:</p> <ul style="list-style-type: none"> • Evaluations of our venturies are underway. Pressure transmitters and venturi are being inspected and calibrated. • An RFP has been sent out and was due back in February, 2015 for Northeast, Springwells, and Southwest. <p>Optimize Rapid Mixing:</p> <ul style="list-style-type: none"> • Streaming Current Detector downstream of our rapid mixers are being utilized to help reduce the amount of coagulant to the treatment process. <p>Optimize Flocculation:</p> <ul style="list-style-type: none"> • Several of the facilities are utilizing VFDs & Soft starters to improve the flocculation process. <p>Optimization Sedimentation:</p> <ul style="list-style-type: none"> • Water Works Park and Southwest are utilizing automatic continuous removal of sludge. As a result they are seeing a decrease in their settled water turbidity that is helping improve the operational efficiency and treatment cost. <p>Optimize Filtration & Backwash practices:</p> <ul style="list-style-type: none"> • Optimum Backwash cycles are being calculated for areas of improvement that will decrease the wash water rates and time. • Southwest and Water Works Park will be conducting bed expansion measurements in the Spring of this year. • The plants annually perform filter power washes and related PMs to improve operational efficiencies.
Minimize Ozone Feed	3B-20	<p>Operational Status – Agree.- Incorporation of ozone was in anticipation of regulatory changes regarding treatment and elimination of current feeding system would require permission from DEQ to eliminate the Ozone treatment.</p>
Only operating the process units needed to meet water demands	3.B-20	<p>Operational Status – Agree.- Springwells Plant has found that equipment idled is equipment developing issues. Rotating the use of equipment is done.</p>
Conduct plant assessments	3.B-22	<p>Operational Status – Agree.- In process. Added this to the CIP and included in the WMP effort.</p>
Optimize rapid mixing	3.B-22	<p>Operational Status – Agree.- Streaming current monitors installed in the rapid mix chamber. Two rapid mix units are being rebuilt at this time.</p>

Veolia Recommendation	Page Ref. No.	Status
Optimize rapid mixing	3.B-23	Operational Status – Planned.- Have three streaming current monitoring equipment to measure particle charges in the capital equipment list for the budget of 2015-16. Will be ordered and installed in the coming fiscal year.
Optimize flocculation	3.B-23	Operational Status – Agree.- Process already started to improve flocculation at NE and RFB was submitted. This expenditure will improve treatment feed rates until the repurposing of the plant is completed as recommended in the WMP.
Optimize sedimentation	3.B-24	Operational Status – Agree.- High settled water turbidity is due to the sludge accumulation in the basins. Sludge from the basins has not been removed in the last two years. We are in the process of removing sludge with a new contract at Northeast and Springwells to avoid negative impacts at the WWTP through the introduction of additional solids.
Optimize Filtration and Backwash Practice	3.B-25 3.B-26	Operational Status – Agree.- <ul style="list-style-type: none"> • The use of backwash turbidimeters has been presented to engineering. • Maintenance of surface wash systems is projected for Fall 2015. Staffing levels have been adjusted, and the maintenance priority is being established. • Evaluation of filter media has been presented to engineering. • Lake Huron has no “Filter to Waste” operations • Wash water consumption/costs will be lowered at Lake Huron with maintenance of leaking effluent valves and operating cylinders that will be implemented with additional staffing levels. Filter performance issues have improved with the cylinder repair project that was stated in 2012 at Northeast Water Plant.
Optimize filtration and backwash practices	3.B-26	Operational Status – Agree.- It has been the practice at Springwells to rotate filters from “in service” to idle and then place in service longer-idled filters (but still less than 48 hours idle). The new automation of the filters will allow varying the rate more and not ending filter runs before necessary. The process was initiated in contract SP-563 and in a O & M process for the filters that were not identified in the rehabilitation project.
Bed expansion	3.B-32	Operational Status – Agree.- Under Partnership for Safe Water studies, the NE filter bed expansion ranges from 25% to 30%. All of the facilities are participating in the partnership program.

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Reduce Power costs	3.B-33	<p>Operational Status – Agree.- Trying to reduce power costs by</p> <ul style="list-style-type: none"> • Washing the filters during off peak period. • Testing the equipment (especially High Lift pumps) during off peak period. • Peak shaving testing monthly at each plant. Process and training ongoing to implement requirements for peak shaving to control high monthly peaks. • In 2011, Southwest replaced old inefficient light fixtures and bulbs with new sensory lighting with high efficient bulbs. • All the plants have instituted processes to fill their reservoirs perform filter washes, and operate their centrifuges (WWP and SW) on the off peak hours to reduce electrical cost during high peak hours. <p>Energy management for the Department is coming.</p>
<i>DWTP Laboratory functions</i>		
<p>The WQD Laboratory is located on the second floor of the Water Works Park WTP, and it is an independent entity of the Water Works Park Laboratory.</p> <p>A licensed Water Chemist is on duty 24 hours/day and 7 days/week at all six drinking water laboratories.</p> <p>Among the WTPs there is an inconsistent application of QA/QC protocol, water chemist duties and naming convention of key parameters and functions. Excluding the Lake Huron WTP Laboratory, the rest of the laboratories have a Laboratory QA manual; however, they are not comprehensive.</p> <p>None of the laboratories have a Chemical Hygiene Plan. The Springwells WTP laboratory had more significant audit findings than other DWSD laboratories – including insufficient documentation and not following SOPs. Since each laboratory is a silo, it is also observed that this makes cross utilization of employees between WTPs difficult.</p>	3.B-34-35	<p>Operational Status – Disagree.- Water Quality has the focus on meeting regulatory sampling in the distribution system as a confirmation to drinking water quality and safety. Water treatment laboratory focuses on monitoring and adjusting treatment as changes occur and reporting those regulatory dosages and results.</p> <p>Water Quality performed 50,124 analyses in FY 13/14.</p> <p>Water Lab falls under the laboratory certification of WWP.</p> <p>DWSD Water Quality lab has a day and afternoon shift 5 days per week. It is not 24/7.</p> <p>Operational Status –Disagree.- A comprehensive QA/QC plan is required for drinking water laboratory certification. All plants have QA /QC plans.</p> <p>Currently, the laboratory procedures at the plants are being updated for uniformity of processes. Some of the changes may result in equipment change-outs as the service life is exhausted on old units and new equipment is procured.</p>

Veolia Recommendation	Page Ref. No.	Status
<i>Restructure laboratory operations</i>		
<p>The Springwells WTP is scheduled to receive a new laboratory in the proposed plant upgrade. This may be the time to consider consolidating a variety of the drinking water and wastewater analytical activities into one location. The more complex analytical determinations, including organics, metals, extractables and others, could be conducted in an analytical laboratory serving the needs of both the water and wastewater systems. This could also include moving some of the analyses conducted at the plants, such as microbiological, to the centralized analytical laboratory.</p> <p>This could reduce the burden of plant level analyses and the number of chemists assigned throughout the GLWA facilities</p>	3.B-39	<p>Operational Status –Disagree.- The only drinking water function the WWTP analytical lab performs for DWSD is VOC's when an emergency spill occurs. VOC are samples that are collected quarterly to maintain certification. The samples are not used for drinking water compliance.</p> <p>The footprint is too small at SPW to accommodate WWTP samples and the WTP samples.</p> <p>Water Works Park has more space available. Ideally wastewater samples should be performed on site at the WWTP.</p>
3.B-6 B Restructuring Laboratory Operations	3.B-39	<p>Operational Status – Agree.-</p> <ul style="list-style-type: none"> • We do have a Chemical Hygiene Plan. • LIMs Information System installation / Op-10 has been purchased <p>Currently we are establishing, compiling and sharing MDEQs laboratory audits and inspections findings within all the plants.</p>
Lab Audits	3.B-40	<p>Operational Status – Agree.- In December 2014, Plants began sharing each other's audits to prepare for the next State audit.</p>
Process Control Tests	3.B-40	<p>Operational Status – Planned.- Planning to look into the process control tests and reduce them which are not required and if those tests are not valuable for the treatment.</p>
Presence/Absence IDEXX test on Raw Water Samples	3.B-40	<p>Operational Status – Agree.- Performing the presence/absence IDEXX test on Raw Water Samples is valuable to us to monitor our treatment.</p>

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<p>Water Quality Division Laboratory is responsible for compliance sampling for all WTP tap samples and bacteria sample collection and analyses for all City of Detroit distribution system and customer communities (84 communities).</p> <p>Other support services that the Water Quality Division provides include: investigating water complaints, and conducting bacteria sampling for new water lines, and clearwells after maintenance. In addition, the Water Quality Division Laboratory develops all distribution reports for wholesale customers and completes the Consumer Confidence Reports (CCRs) for the Water System.</p> <p>This laboratory does not have a contingency plan. Although not comprehensive, the facility does have a Laboratory QA manual combined with Water Works Park WTP laboratory.</p> <p>Laboratory personnel have indicated a need for training the Customer Service group to better screen calls and prevent calls from going to WQ lab investigation group.</p>	3.B-40	<p>Operational Status –Disagree.- Water Quality group is responsible for all SDWA compliance regulation from source to the customer tap excluding process control samples conducted by plant chemists and regulatory sampling requirements within the water plant. Water Quality group laboratory compliance, falls under the umbrella of Water Works Park.</p> <p>Water Quality group manages, monitors and provides analysis for many regulatory rules under the state and federal SDWA. These include the following: Disinfectant By-Product Rule, Lead and Copper Rule Total Coliform Rule, UCMR rules, and LT2 etc.</p> <p>All WTP laboratories have QA/QC manuals with SOP’s required for each analysis and sampling performed, including all QA /QC requirements as part of the laboratory certification process. Water Quality group falls under the WWP laboratory certification.</p>
<i>Additional recommendations from the operational review include</i>		
<p>Sharing minor discrepancies and findings that are noted by the Michigan DEQ regulator during the state audit of the drinking water laboratories among all the WTP laboratory operations as a continuous improvement factor.</p> <p>Sharing of these findings would allow the other laboratories to prepare for the next State audit and avoid being noted with similar findings.</p> <p>Optimizing the distribution system sampling routes. Current coliform sample routes for the City of Detroit and the numerous surrounding communities mix combinations of sample sites from multiple geographic areas on the same days.</p> <p>Since finished water leaving each WTP is tested daily, different parts of the distribution system could be tested less frequently to complete regional coverage cycles each month.</p> <p>Reviewing potential route changes could improve travel efficiency to realize cost savings if changed routes are acceptable to the Michigan</p>	3.B-40	<p>Operational Status – Agree.- WTP team leaders meet monthly, and have been evaluating each plants QA/QC SOP’s and audit deficiencies.</p> <p>DWSD sampling routes are continuously updated and reevaluated for efficiency. When sampling points are added or eliminated the routes are re-evaluated and many routes have been redesigned to be more efficient using GPS to map routes.</p> <p>The finished water leaving the plant does not reflect the changes that can occur in the distribution system. DWSD provides water to the different communities from several sources. DWSD test different geographical areas to ensure the water is safe to drink in all areas of the system.</p> <p>The Total Coliform Rule (TCR) requires monitoring from all areas of the system. It determines the efficacy of the treatment process and the integrity of the distribution system.</p>

Veolia Recommendation	Page Ref. No.	Status
<p>DEQ. Sample collection routes that would cover the entire system two or three times each month could be set up.</p> <p>Implementing a practice that would ensure that all samples collected from a region (the southern communities, for example) would be sampled on the same day, and then again later in the month after samples from all of the other regions or quadrants had been collected.</p> <p>Using a more in-depth comparison of alternative routes to reduce travel time and associated potential costs savings is recommended. T</p> <p>This would include reevaluating the number of persons needed to collect monthly samples by more efficient routes to determine potential reduction.</p> <p>Reducing the number of process control tests performed by the Chemists and reported on the State's monthly Report of Operations, where not required by drinking water rules. Some of the process control tests reported by WTPs on the monthly Reports of Operation appear to be optional and excessive.</p> <p>Preparing an SOP for the GLWA on coliform sample collection and analysis to enable water treatment plants to realize potential savings by only performing presence/absence IDEXX on finished water plant samples</p>		<p>DEQ requires DWSD to sample all 84 communities weekly, DWSD is a TCR modified consecutive system and is on a reduced monitoring schedule. This agreement reduced the number of samples required per community. DWSD agreement with MDEQ requires weekly sampling in all 84 communities.</p> <p>The TCR sampling routes are designed geographically and utilize Metro Detroit's freeway system to move efficiently between communities. DWSD utilizes 12 and 15 routes each week.</p> <p>These routes include ¼ of the each community's monthly TCR sample requirement.</p> <p>Several DWSD wholesale communities have limited sampling sites due to the rural nature of the community so sampling is not conducive to twice or three times per month.</p> <p>DWSD currently utilizes three investigators to collect 740 TCR samples per month. That requires a minimum of 3 routes per day. One hundred eighty five samples are collected weekly.</p> <p>DWSD utilizes IIDEXX presence/absence for water treatment plant finished water samples and distribution system samples. Monitoring of the source water should be continued using the Idexx quanti-tray sealer and should be continued information can be useful in determining treatment options.</p>
<p>Install Laboratory Information Management System (LIMS) for all laboratories.</p> <p>Based on our review, Veolia recommends the purchase and installation of a LIMS, with access from all water and wastewater laboratory areas, in order to reduce the excessive manual data handling, to reduce the introduction of errors, to expedite the preparation of management and regulatory reports, as well as to maintain an electronic archive of required data and information.</p>	3.B-40	<p>IT Status - This is a system that both water and wastewater is pursuing and an RFP is planned.</p> <p>ITS is working with water and wastewater to develop the specifications and early drafts of both LIMS and PIMS RFP's are available. A LIMS Information System installation / Op-10 has been purchased and installed at each plant.</p> <p><u>RFP publishing date: March 30, 2015</u></p>

Veolia Recommendation	Page Ref. No.	Status
Other Opportunities		
Implement solids stabilization and/or solids minimization technology as a long term solution.	3.C-2	Operational Status – Planned.- <i>DWSD will be considering anaerobic digestion as one of the long term solids options for the remaining “25%”. Evaluation of anaerobic digestion with CHP is also a critical piece to reducing energy consumption. Analysis and feasibility to begin in 2015</i>
Organization		
Ensure a certified and highly competent individual is responsible for the wastewater treatment strategy and approach on each and every shift, 24 hours per day, seven days per week.	3.C-3	Operational Status – Agree.- <i>This has been completed with the announcement of the Plant Manager and placement/designation of Team Leaders for each of the off-shift crews. Completed 10/14</i>
Ensure that all personnel are adequately certified and trained commensurate with their duties and responsibilities. This would entail a detailed needs assessment and training program to leverage the considerable capabilities of current staff.	3.C-3	Operational Status – Agree.- <i>In process and planned. WWTP has been offering classes in wastewater operations for several years. The number of employees with A, B, C and D licenses has been increasing. Each testing cycle more employees are testing for their licenses to meet the new classification requirement.</i>
Create an asset management group responsible for all aspects of the maintenance needs of the WWTP, including planning, preventive/predictive maintenance and emergency repairs.	3.C-3	Operational Status – Planned.- <i>In process and planned</i>
Supplement the WWTP personnel with significant technical resources and local competent contractors to leverage these capabilities in a cost-effective way.	3.C-3	Operational Status – Agree.- <i>In process using as needed and skilled trade contracts to support.</i>
Develop Energy Management Program that can be used to drive the decision-making process for conservation and cost improvements and establish a contract with DTE	3.C-3	Procurement Status - <i>Leverage Certified Energy Managers within DWSD to evaluate energy usage/utilization and assess investments (ie. municipal aggregation, cogeneration, etc)</i>
Asset Management Program	3.C-3	
Conduct an asset condition evaluation to determine the condition of all assets against various benchmarks using well-known industry analysis techniques.	3.C-3	Operational Status – Agree.- <i>In process through Asset Management</i>
Identify critical equipment and assets through a criticality assessment so that vulnerabilities are identified and mitigated, including stocking spare parts as necessary for critical equipment.	3.C-3	Operational Status – Agree.- <i>In process through Asset Management</i>
Implement a maintenance program based on original equipment manufacturer recommendations, historical data and practices, and demonstrate best practices.	3.C-3	Operational Status – Agree.- <i>In process through Asset Management</i>

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Utilize the Oracle® Utilities Work and Asset Management (WAM) system by inputting relevant information and data (which current implementation we would delay and further evaluate until a more robust strategy for data input is developed) to complete the asset management program.	3.C-3	Operational Status – Agree.- <i>In process through Asset Management</i>
Plant Operations	3.C-3	
Improve decision-making through SCADA and data management.	3.C-3	Operational Status – Agree.- <i>In process and planned an initiative to fully review currently installed monitoring, control points and equipment, repair such as appropriate and identify additional needs will begin in calendar year 2015. This will include the development of standard reports in ovation, correcting control algorithms and additional plant technician training. Paper logs have been eliminated (1/14) and logs are kept and reported using an Excel based system – further improvements are being planned. Additionally dashboards will be further automated including DMR preparation using a single database management system eRis or Pi.</i>
Evaluate opportunities to serve potential new customers. Complete deep-dive analyses for potential new customer options to increase revenue through the excess dry-weather treatment capacity available.	3.C-4	Operational Status – Agree.- <i>Evolution of the regional concept of wastewater treatment is underway and will likely advance once GLWA is operating. To date cooperation among the water districts has occurred for example best practices group for wet weather flow, regional flow control at DWSD’s SCC, and Wayne County request for guaranteed sanitary capacity to solve a Wayne Co. SSO problem. As a point of interest, Pontiac Wastewater plant was recently upgraded to handle 30% of the dry and wet flow from the Clinton Oakwood District to cost effectively alleviate one of the bottle necks of delivering wastewater to the DWSD WWTP. The City of Detroit is 97% combined sewer – while we expect Green Infrastructure to handle some of the wet weather flow – it is unlikely that the City’s sewers will be separated.</i>
Automate ferric chloride dosage.	3.C-4	Operational Status –Planned.- <i>Optimize and automate aeration process.</i>
Optimize and automate chlorination-dechlorination process. Optimize and automate the aeration and the chlorination-dechlorination processes. An example is to use more-efficient dispersion methods to mix chlorine and sulfur dioxide into plant effluent, even as the current chlorine dosage is best-in-class (15.9 lb/MG) and sulfur dioxide dosage is acceptable (11.3 lb/MG).	3.C-4	Operational Status - <i>Planned. Scope of work is being defined.</i>

Veolia Recommendation	Page Ref. No.	Status
Biosolids Operations	3.C-4	
Reduce polymer dosage for dewatering units. Optimize thickened feed solids to centrifuge dewatering to maximize unit solids loading and reduce polymer dosage as a function of flow ratio control.	3.C-4	Operational Status - Planned
Increase dewatering units solids capture. Optimize polymer dosage and dewatering units solids capture with routine monitoring of filtrate and centrate solids relative to feed and cake total solids.	3.C-4	Operational Status – Agree. Completed. <i>The capital project for the Belt Filter Presses included improved polymer control and polymer batching control. Work in progress and nearly complete.</i>
Eliminate water addition on conveyor belt to reduce natural gas demand for incinerators. Eliminate the practice of cake solids dilution via water hose feed on conveyor belt to reduce wet tonnage of cake solids being fed to incinerators and Central Offload Facility (COF), thereby reducing annual operational costs for natural gas, lime and disposal.	3.C-4	Operational Status - Conveyor belt washing has been reduced and will be eliminated when the remaining new belt filter presses come online with the improved polymer control and reduction in centrifuging.
Lower wet tonnage of cake solids for lime stabilization and hauling/landfill disposal	3.C-4	Operational Status – Ongoing. <i>The new belt filter presses have increased cake solids going to the COF. Additionally, the plant process team has been focusing on increasing the use of incineration by repairing/replacing the conveyance system.</i>
Laboratory Operations	3.C-4	
Restructure the laboratories. Restructure the laboratories to reduce excessive overtime.	3.C-4	Operational Status – Planned. <i>The organizational optimization was designed to create greater operational flexibility. That flexibility will directly attack overtime inflations due to restricted title replacements to support a 24/7 operations.</i> <i>(See Attachment 1) Shows that Water and Wastewater have both reduced overtime over the last three (3) fiscal years. Field services still reports on aspects of our operations that have not been optimized reductions and controls will be reflected firmly in FY2016.</i> <i>Source: OT monthly reporting</i>
Install LIMS. Install a Laboratory Information Management System (LIMS).	3.C-4	Operational Status – Planned
Industrial Waste Control	3.C-4	
Streamline data digitalization and recordkeeping. Streamline data digitalization and recordkeeping to expedite distribution of records.	3.C-4	Operational Status - Planned with IT; however, a schedule has not yet been developed

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3.C - Wastewater Treatment and Quality		
Install a single database management system DWSD wastewater personnel currently utilize various Excel databases to assemble and archive operational data. Water facilities the size of DWSD benefit greatly from a single database management system.	3.C-9	IT Status - This is not planned. Business case needs development. Members to include business owner (?) and IT. Need to identify business requirements and outcomes.
Assess OP precipitation as a control parameter	3.C-12	Operational Status – Agree.- Included with automation project
Assess use of flow pacing	3.C-12	Operational Status – Agree.- Included with automation project
<i>Aeration Improvement Ideas</i>		
Re-institute automatic control of oxygen supply system	3.C-18	Operational Status - Planned in CIP. “Optimizing DWSD-WWTP Aeration Tank Evaluation” study by CDM completed Dec. 19, 2014 The previous automatic oxygen control based on headspace pressure in the decks did not yield good results.
Optimize use of intermediate lift stations with aeration deck operation	3.C-18	Operational Status - Planned in CIP
Optimize pure oxygen mixing	3.C-19	Operational Status -- Planned in CIP
<i>Pure Oxygen Mixing Improvement Ideas</i>		
Install VFDs on mixers	3.C-19	Operational Status – Planned.- To be addressed during CIP design
Use Start/Stop mixer controls	3.C-19	Operational Status – Planned.- To be addressed during CIP design
Assess use of two decks instead of three decks	3.C-21	Operational Status – Agree.- See previous response
<i>Disinfection Improvement Ideas</i>		
Evaluate installation of flash mixing system	3.C-27	Operational Status -- Planned
Fully automate chlorine and sulfur dioxide dosage	3.C-27	Operational Status - Planned
Competitive Benchmarks		
Ensure that categorization of advertised Bid Opportunities do not indicate purchasing thresholds	3.C-39	Procurement Status - In progress
Install Laboratory Information Management System (LIMS) It is recommended that the GLWA laboratory team purchase and install a LIMS with access from all wastewater laboratory areas to reduce excessive manual data handling, reduce the introduction of errors, expedite the preparation of management and regulatory reports and maintain an electronic archive of required data and information.	3.C-41	IT Status - This is a system that both water and wastewater is pursuing and an RFP is planned. ITS is working with water and wastewater to develop the specifications and early drafts of both LIMS and PIMS RFP's are available. RFP publishing date: March 30, 2015

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Streamline data digitalization and recordkeeping: It is recommended that the IWC purchase/lease equipment and/or hire an on-site vendor to digitize records (including large volumes of daily mail and correspondences) in real time. This would allow for expedited distribution of records internally and externally, thus resulting in labor and material savings.	3.C-42	<p>IT Status - This is not planned. This is an enterprise need which will need to be addressed in an orderly fashion.</p> <p>DWSD has chosen Hyland Software's OnBase as the Enterprise Content Management platform standard and are in the process of implementing the first pilot area in the department, Finance.</p> <p><u>The expected implementation date of the initial business unit is August 1, 2015.</u></p>
Investing in an upgrade to the PIMS, such as Inflection Point Solutions to ensure that IWC and laboratory software tools can integrate for improved efficiency.	3.C-42	<p>IT Status - This is planned. ITS is working with wastewater to develop the specifications and an early draft of the PIMS RFP is available.</p> <p>Final RFP publishing date: March 30, 2015</p>
Maintenance Management		
Updating fleet and heavy equipment maintenance policies and systems by:	3.D-2	
Conducting a review and update of fleet and heavy equipment inventories.	3.D-2	<p>Operational Status – Agree. In the process of doing this right now and due to be complete for rolling vehicle, construction, and grounds fleet by mid-March 2015.</p>
Implementing a GPS fleet management system.	3.D-2	<p>Operational Status – Planned.- We are in the planning phase of doing this for all of our rolling assets department-wide. We have approximately 80 vehicles now that are equipped with a GPS system now as a start.</p> <p>We need to review the current system and enhance for department-wide system. We hope to complete this within the next year.</p>
<ul style="list-style-type: none"> Implementing a fleet gas card program. 	3.D-2	<p>Operational Status – Planned.- We currently have a fuel management system through Materials Management group. Fleet is interested in doing a revamp of the current system and connecting it with the CMMS and fleet management system in the future. Meetings are beginning soon to discuss this with Finance Procurement Division as they look to move to a possible new system too.</p>

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Table 3.D-1 - Potential Areas for Maintenance Improvements	3.D-2	
3.D.1 - Ensure the Asset Management Program Mitigates Risk and Needed Improvements Are Completed		
3.D.1 A Ensure the Asset Management Program mitigates risk and improvements needed are completed.	3.D-3,4	Operational Status – Agree.- This is in progress. <ul style="list-style-type: none"> In 2013, a new Asset Management program WAM was purchased and was implemented in 2014. All of our staff was trained on the system. Train the trainer teams were developed who supplied training for the rest of the employees. Representatives from all Water Treatment Plants met with the Asset Management team to ensure these needs and assessments.
1. Update the current Oracle WAM configuration	3.D-3 3.D-6	In progress
2. Standardize WAM business rules and workflow	3.D-3 3.D-7	In progress
3. Train the maintenance planners, schedulers and end users	3.D-3 3.D-9	Training plans in development
1. Agreeing on asset criticality criteria	3.D-4	Operational Status – Planned. - See 3.D-4
2. Identifying staff with the most knowledge of a particular system O&M history.	3.D-4	Operational Status – Agree.- In process now with filling titles
3. Auditing facilities to ensure 100% coverage of assets.	3.D-4	Operational Status – Planned.- This is an initiative of the Facilities Group and will be done within the next year as a goal, as an inventory process and working with Legal Division of the Department to ensure all real estate that the Department owns is known for CMMS and Facilities' records.
B - Conduct criticality assessment for all systems and assets	3.D-4	
3.D.1 B Conduct Criticality assessment for	3.D-4	Operational Status – Agree.- Representatives from Water, Wastewater and Field meet as a part of the Asset Management team to ensure these needs and assessments.
3.D.1 C Apply RCM-based Maintenance Strategies for all critical equipment	3.D-4,5,6	Operational Status – Agree.- Representatives from Water, Wastewater and Field meet as a part of the Asset Management team to ensure these needs and assessments.
Figure 3.D-1 - Veolia's Asset Management Program Flow Chart	3.D-5	
C - Apply RCM-based maintenance strategies for all critical equipment	3.D-6	Operational Status – Planned.- Goal for Facilities Group, but approximately 1-3 years in the future after core process assets are done first, as part of AMG's AMP.

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3.D.2 - Update the Current Oracle WAM Configuration; Standardize Workflow and Conduct Training		
Improvement Ideas	3.D-6	
3.D.2 Update the WAM asset inventory and standardize hierarchy structure	3.D-6	Operational Status – Agree.- Asset Management Team is working on this.
3.D.2 A Update the current Oracle WAM configuration; standardize workflow and conduct training	3.D-6	Operational Status – Agree.- Asset Management Team is working on this.
Update the Current Oracle WAM Configuration; Standardize Workflow and Conduct Training	3.D-6	IT Status - This effort is underway. WAM has many stakeholders and it is important that they be managed effectively, and with the enterprise in mind. To meet that need a WAM Governance program is being implemented that will be used to govern the use of WAM. The core team is being identified and will report to the Transition Team (Executive Leadership). <u>The goals of the WAM Core team are to stabilize WAM, implement an Enterprise Asset Hierarchy that can address the needs of the utility and establish the necessary business process and associated automation to address the October 2016 NPDES permit requirements around CMMS.</u>
1. Update WAM asset inventory and standardize the hierarchy structure	3.D-6	Procurement Status - Determine requirements to pursue Asset Management module
3.D.2 B Standardize the WAM business rules and workflow	3.D-7,8	Operational Status - Asset Management Team is working on this.
Develop and implement a CMMS training program for all O&M personnel (as appropriate for their job responsibilities) and require personnel to use CMMS.	3.D-7	Operational Status - Training is being offered currently for WAM from DWSD IT Division.
Develop new, customized maintenance job plans for critical assets and standardized job plans for routine work – driven from the asset management activities recommended.	3.D-7	Operational Status - Pre-plans exist in CMMS but do need to be updated and new ones created. SEMP's exist for some assets in book form but need to be transferred to CMMS. This is 1-3 years out as well.
Designate a core group or an individual responsible for quality control of the CMMS database.	3.D-7	Operational Status - The Department is looking into development of a Systems Planning Division that will possibly house the AMG and others to do this. Fleet and Facilities will have a person to assist in this as well especially for fleet. One person handles new fleet entries now for the group.
Create and audit the QA/QC plan, which would provide for routinely auditing subsets of time and material entries on work orders generated to ensure they are being entered accurately and consistently across maintenance shops and within operations.	3.D-7	Operational Status - Is a Fleet and Facilities initiative to do this but not started yet in full review.

Veolia Recommendation	Page Ref. No.	Status
1. Standardize workflow and conduct training	3.D-7	Procurement Status - Plans in development to standardize documents and address training
B - Standardize WAM business rules and workflow	3.D-7	
Prioritize work based on criticality, reducing backlog and “catching up” on deferred maintenance.	3.D-8	Operational Status – Agree.- See 3.D-7
1. Standardize workflow and conduct training	3.D-7	Procurement Status - Plans in development to standardize documents and address training
Provide a mechanism for detailed review of recurring maintenance on specific assets and determine if engineering review is necessary.	3.D-8	Operational Status – Agree.- Once AMG is finished with AMP, there will be review of MTTR, and MTTF through the CMMS WAM with changes to processes of WOs implemented. Now there is not an accurate process in place in CMMS to do this or through other means.
Ensure preventive maintenance is developed, scheduled, prioritized and actually completed.	3.D-8	Operational Status – Agree.- KPIs will be monitored once created and finalized to track level of PMs created, finished, and scheduled vs. un-scheduled work.
Ensure appropriate Operation and Maintenance Manual information is entered for each asset in the CMMS.	3.D-8	Operational Status – Agree.- Part of AMG’s AMP.
Ensure that field comments and failure reporting are captured for each work order.	3.D-8	Operational Status – Agree.- Doing but need to monitor for consistency with crews and supervisors and planners.
Ensure that all maintenance logs and data are centrally kept within CMMS.	3.D-8	Operational Status – Agree.- Same as above.
Systematically review the data input into CMMS to ensure quality.	3.D-8	Operational Status – Agree.- Part of AMG. We will monitor as well occasionally.
Prepare reports on KPIs and metrics for management, based on field data collected.	3.D-8	Operational Status – Agree.- Creating KPIs now for Fleet and Facilities.
3.D.3 - Reallocate Maintenance Personnel to Optimize Maintenance Capability		
Improvement Idea	3.D-9	
A - Reallocate maintenance staff to optimize maintenance in-house	3.D-9	
- Fleet and Heavy Equipment	3.D-10	
It is recommended that the current maintenance staff levels for the fleet of more than 600 vehicles and heavy equipment be maintained until the comprehensive review of personnel is complete and staffing plans are implemented.	3.D-10	Operational Status – Agree.- We are doing this and plan on keeping current staff until the review is done and vehicle review is done as well. Starting process of right sizing fleet, completing a new inventory of rolling fleet, and growing our motor pool fleet now.

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However, evaluation of the fleet maintenance requirements should investigate the fiscal impact of out-sourcing different types of vehicle (trucks, cars) maintenance and reallocating mechanics to other duties, while retaining a core crew of heavy equipment (backhoes, tractors) maintenance personnel.	3.D-11	Operational Status – Agree.- We are looking at outsourcing small engine repair for e.g. pumping equipment and air compressors. Also, we are farming out to other areas of the department jobs we did under fleet formally like handling pumping jobs on various sites. Reviews for other outsourcing will be done as well.
3.D.4 - Update Fleet and Heavy Equipment Maintenance Systems		
Improvement Ideas		
A - Implement GPS fleet management system	3.D-11	Operational Status – Planned.- We are planning on doing this for all of our rolling assets department-wide. We have approximately 80 vehicles now that are equipped with a GPS system now as a start. We need to review the current system and enhance for the department-wide system. We hope to complete this within next year.
Update Fleet and Heavy Equipment Maintenance Systems. Install GPS Fleet management System and Fuel Card Program	3.D-11	IT Status - This is not planned. Business case needs development. Members to include business owner (?) and IT. Need to identify business requirements and outcomes.
Implement GPS fleet management system	3.D-11	Procurement Status - Sourcing and implementation pending cost/benefit analysis contingent upon completion of physical inventory of fleet stock planned by Mar 2015
Implement fleet gas card program	3.D-12	Procurement Status - Sourcing and implementation contingent upon life cycle cost analysis of fuel management system planned by Mar 2015
3.E - Underground Assets		
Address missing data in the GIS database and begin with information that exists on paper maps	3.E-8	IT Status - Metco has been contracted to update the Water and Sewer Distribution layers. Metco has completed the water layer and is connecting the 30,000 fire hydrants to it now. That effort will be complete by March 30, 2015. Metco is beginning the process of updating the sewer distribution layer with enough detail that the layer can be used for sewer system hydraulic modeling. Metco's source for the update process is DWSD as-builts scanned during another project; <u>The completion date for the Sewer distribution layer is January 31, 2016.</u>
Implement procedures that allow network operators to use the GIS in the field instead of paper maps	3.E-9	IT Status - This is not planned. Business case needs development. Members to include business owner (?) and IT. Need to identify business requirements and outcomes. This may come out of the GIS Operational Project as a priority initiative.

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Utilize hydraulic models as a strategic tool for network improvement management	3.E-20	<p>IT Status - Metco has completed the water layer and is connecting the 30,000 fire hydrants to it now. <u>That effort will be complete by April 30, 2015.</u> The data quality in the water layer should then be suitable for modeling.</p> <p>Metco is beginning the process of updating the sewer distribution layer with enough detail that the layer can be used for sewer system hydraulic modeling. Metco's source for the update process is DWSD as-builts scanned during another project; <u>The completion date for the Sewer distribution layer is January 31, 2016.</u></p>
Energy Management		
Develop Energy Management Program	3.F-1	<p>Operational Status – Agree.- DWSD has an existing Energy Management Plan which addresses the major initiative outlined in the Veolia report. The plan is five years old and needs an update as far as organization structure and EMT members.</p> <p>An Energy Management Plan was first created in February 2008 and updated in 2010. Since that time an internal energy audit was conducted and it was concluded that the kWh in updating existing fixtures throughout DWSD facilities would approximate into an annual savings around \$600,000. The capital investment to achieve that upgrade was estimated at \$2.7 M for installation and materials.</p> <p>The energy conservation measures taken to date by DWSD are as follows:</p> <ul style="list-style-type: none"> • Compact Fluorescent Lamps 2,090 installed • Linear and “U” fluorescent lamps 7,763 installed • Fluorescent lamp ballasts 5,265 installed • Occupancy sensors 1,127 installed • Complete fixture assemblies 2,641 installed • Induction fluorescent lamp fixtures 568 installed
Hydraulic Data	3.F-2	<p>Operational Status – Agree.- Master Planning Team is evaluating DWSD operation zones to identify any potential energy savings by changing pump station or plant operations.</p>

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Energy Consumption and Costs	3.F-2	Operational Status – Agree.- DWSD records all the DTE demand and usage data in an Access Database. This process is manual since DTE doesn't provide bills electronically. DWSD is in the process of implementing EnergyCAP software to automate bill capture and audit process.
Implement a demand response program	3.F-4	This will require hydraulic and biological study before implementing. If such study shows potential operability solutions, extensive negotiations with MDEQ will be required. A short test of this in 2013 yielded mixed results.
Implement comprehensive metering program	3.F-4	DWSD currently does not have any single individual or group involved specifically in monitoring and evaluation of DWSD's energy usage and costs. In order to effectively implement the Energy Management Plan DWSD is actively seeking to employ an Energy Manager who will ultimately report to System Planning.
Competitively procure electricity and gas commodity suppliers and incentive programs.	3.F-4	
Optimize lighting usage.	3.F-4	Operational Status – Agree.- Lighting upgrade project started in 2010/2011. Department is saving \$550,000.00 per year based on this project. All the facilities are planned to be upgraded by 2017.
	3.F-4	Operational Status - DWSD WWTP purchases natural gas with the MI State Gas consortium
Implement LoadWatch Program	3.F-14	Operational Status – Disagree.- DWSD investigated the LoadWatch program in the past. It is a standalone system and not tied to department-wide control system. It was determined that if power metering is established at all the sites, then this program would not be needed for DWSD.
High-Ground Storage in Capital Improvement Plan	3.F-20	Operational Status – Agree.- This concept was evaluated during the 2003 Master Plan, and it is also being evaluated in the current Master Plan update.

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3.G - Capital Program		
Coordinate with Maintenance and improve the use of the GIS system data to enable the efficient and accurate identification of required CIP projects within the distribution and collection systems. <u>Develop a Master Data Management Plan to establish and implement policies, standards and tools for administering data that is essential to GLWA's and DWSD's collection and distributions systems.</u>	3.G-12	IT Status - As part of the DWSD's overall GIS management, a MDM will be developed to support the needs of the business. ITS will be the stewards of the MDM and it will be owned by the various business areas within the utility. <u>Date: TBD as part of the GIS Operational Plan Project.</u>
Implement a proven project management software suite. It is recommended that CIP best management practices and an integrated program management approach be implemented. This would include implementing a proven project management software package, such as e-Builder, Primavera, MS Project or other similar packages.	3.G-18	IT Status - Not planned. Business case needs development. Members to include business owner (?) and IT. Need to identify business requirements and outcomes. Case can be made for MS Project or Primavera. Primavera and MS Project can both interface directly with WAM Projects Module.
Finance and Budgeting		
A – Finance Function #1: Performance Recording and Monitoring		
Reconfigure the financial closing process in order to close the books in a timely and accurate manner		
<ul style="list-style-type: none"> Establish a monthly closing checklist to control the material tasks which need to be completed before the books are closed. 	3.H-2	Finance Status - Agreed & In-Process. Current City systems are not closed monthly (City sub-systems are closed). Focusing on a new ERP system & implementing best practices.
<ul style="list-style-type: none"> Create a definitive closing schedule and timeline, and distribute and communicate throughout the organization. 	3.H-2	Finance Status - Agreed & In-Process. Current City systems are not closed monthly (City sub-systems are closed). Focusing on a new ERP system & implementing best practices.
<ul style="list-style-type: none"> Balance Sheet reconciliations to be completed and tied-out monthly. 	3.H-3	Finance Status - Agreed & In-Process. Current City systems are not closed monthly (City sub-systems are closed). Focusing on a new ERP system & implementing best practices.
<ul style="list-style-type: none"> Develop a process to identify and record accruals. 	3.H-3	Finance Status - Agreed & In-Process. Current City systems are not closed monthly (City sub-systems are closed). Focusing on a new ERP system & implementing best practices.
<ul style="list-style-type: none"> Develop rapport between Operations and Finance teams. 	3.H-3	Finance Status - Cross-functional meetings have been held to address various concerns. In addition, The LEAN process has been used to address project capitalizations and plans are to expand use of the LEAN in the future.
<ul style="list-style-type: none"> Establish Consistent procedures and practices to allow for a controls based audit. 	3.H-3	Finance Status - Agreed & In-Process. Current City systems are not closed monthly (City sub-systems are closed). Focusing on a new ERP system & implementing best practices.

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<ul style="list-style-type: none"> During the initial transition phase, perform a gap analysis to identify areas that may inhibit the current Finance team from closing the books monthly and following the above processes. 	3.H-4	Finance Status - Agreed & previously performed on a high level. Used during the ERP requirements development process.
<p><i>Develop a robust financial reporting process to communicate monthly results to internal and external stakeholders.</i></p>	3.H-4	
<ul style="list-style-type: none"> Identify Key Performance Indicators (KPIs) to be used to evaluate the performance of the Business. 	3.H-4	Finance Status - Agreed. KPIs are currently reported to the BOWC monthly. As a new ERP gets implemented reporting abilities will be more robust.
<ul style="list-style-type: none"> Reinforce the monthly financial reporting package distributed and communicated to the Senior Management of the DWSD and GLWA and the Board of Water Control (BOWC) 	3.H-4	Finance Status - Agreed. As a new ERP gets implemented along with best practices DWSD reporting abilities will be more robust.
<ul style="list-style-type: none"> Financial reports, both internally and externally, must tie into the ERP data. 	3.H-5	Finance Status - Agreed. As a new ERP gets implemented along with best practices DWSD reporting abilities will be more robust.
<ul style="list-style-type: none"> Departmental and Project reports issued monthly with analysis. 	3.H-5	Finance Status - Agreed. As a new ERP gets implemented along with best practices DWSD reporting abilities will be more robust.
<p><i>Revamp the controls around the billing and cash collections process</i></p>	3.H-5	
<ul style="list-style-type: none"> Cash is the lifeline of the “company”so controls surrounding this process must be robust 	3.H-5	Finance Status - DWSD has the foundation of a well-controlled cash receiving process through its Inovah and enQuesta systems. The Finance Transformation team has devoted resources to billing and cash receipts and is working on numerous projects to improve cash control.
<p><i>Implement a new ERP reporting tool, which has integrated modules and allows the organization to operate in an efficient and effective manner.</i></p>	3.H-6	
<ul style="list-style-type: none"> An integrated ERP suite is crucial to equip the Finance team with the tools needed to report results accurately and ensure an effective control environment. 	3.H-6	Finance Status - Agreed. ERP requirements were developed prior to the Veolia evaluation. An RFP for an ERP suite has been drafted. In addition, DWSD staff are actively participating in the Oracle Fusion implementation meetings with the City, while pursuing an independent system for DWSD.
<ul style="list-style-type: none"> Before any ERP implementation is considered, both internal and external resources need to be evaluated. 	3.H-6	Finance Status - Agreed DWSD has done an initial valuation of ERP implementation resource needs.
<ul style="list-style-type: none"> Automation of systems will be key to achieving the desired efficiency and savings. 	3.H-6	Finance Status - Agreed. Efforts have been underway to pursue a new ERP for DWSD independent of the City, while still supporting the City's efforts on implementing Oracle Fusion.

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<ul style="list-style-type: none"> Added control environment. 	3.H-6	Finance Status - Agreed. This is being addressed thru a new ERP and developing best practice policies and procedures.
B. Finance Function #2: Rates and Debt	3.H-7	
<i>Rates - Improve process by which rate cases are made and debt is issued</i>		
<ul style="list-style-type: none"> Implementing a new ERP system to increase confidence in the results, eliminate the need for estimates and adjustments, and provide a trail to allow for variance analysis (This was further developed in the systems section of this report above). Formalizing the key financial principles that DWSD needs to rely on. Rate stabilization requirements based on historical short term issues. Development of a long term strategy for the fixed, variable (volume) and potential pass-through components of the utility's revenue. Development of a strategy to address the needs of DWSD's customer classes, including industrial, commercial and residential. Development of a strategy related to consumption and/or conservation. Developing the process by which the rate model is supported by a clear chain of work papers and systems output: Link the rate model to the systems improvements discussed elsewhere in this report. Strengthen management's ability to argue the rate case in front of decision makers and defend rate increases in front of all customers and community stakeholders. Developing a DWSD-owned rate model that is transparent to management and customers. 	3.H-7	Finance Status - Agreed. We have developed requirements to be issued in an RFP for a new ERP for DWSD independent of the City. An ERP system properly configured to DWSD's needs will contribute greatly to having more timely and relevant data to use in the rate development strategy

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<i>Debt Management - Record keeping of the CIP projects funded by bond proceeds must be improved to support required IRS arbitrage calculations</i>	3.H-8	
<ul style="list-style-type: none"> • The process to track the bond series and issuances, along with details of the specific bonds, needs to be formalized, preferably in an electronic system. • Use of the proceeds needs to be tracked very carefully. In addition, there needs to be interaction and communication with the engineering and project management staffs to project when these proceeds are needed, to allow for cash forecasting and following the investment policy. This will become particularly important in the bifurcation of Retail vs. Wholesale funding. • Implementing a tracking system of the bond issuances and series, including the covenants and other details, and appoint a person responsible for the debt. • Preservation of a good relationship with the trustee is important to ensure open communications on status and opportunities to reduce costs. • Reinforcing communications with engineering and project management on the status of capital improvement program (CIP) projects in order to allow cash forecasting and positive investment opportunities. These open communications will also provide insight to potential available funds from under spending for other projects, and cash needs projected into the future (to factor into the rate cases). • Providing for the long term planning of new capital projects, in order to allow for cash needs in the rate cases, and give sustainable and justifiable projections to rate payers and lenders. • Initiating return on investment calculations to justify capital investments. 	3.H-8	<p>Finance Status - 1st bullet point- Need to determine if an “out of the box” software program needs to be used or if we can achieve the same outcome with Excel. My initial thought is Excel can be used.</p> <p>2nd bullet point- Develop a bond issue specific spend down template which will identify what projects are included, how long construction will take and develop the monthly anticipated draws on the bond proceeds. Once the template is filled out, we will need to track the actual progress versus the projected amounts. This template will also be used for Arbitrage calculations/monitoring as well as cash flow/ investment purposes.</p> <p>3rd bullet point- Develop a “checklist” of important bond issue information. This template will identify the parties that are responsible for completing or updating each item.</p> <p>4th bullet point- agreed</p> <p>5th bullet point- For each new project/bond issue, assign a member from the finance, engineering and project management teams to work as the “project team.” Each team will be responsible for developing project amounts, time tables and construction periods. This will help in simplifying the long term cash planning and financing schedules.</p> <p>6th bullet point- For long term planning, possibly develop a rate projection schedule which incorporates budget and CIP components which would give a general indication of effects on retail/wholesale rates given changes to proposed projects.</p> <p>7th bullet point- when should this calculation be done?</p>

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C. Finance Function #3: Internal Controls (including spend control)	3.H-9	
<ul style="list-style-type: none"> Regulatory campaign management (compliance with relevant accounting standards, fraud reporting) Follow-up and improvement of processes (control reviews, monitoring action plans) Creation of a consistent framework for the implementation of group procedures. 	3.H-9	Finance Status - An Internal Audit function is planned for the upcoming fiscal year. This function will include organizational risk assessments and internal control design, and policies and procedures.
3.I - Customer Service		
Implement AMR Portal for Retail Customers	Table 3.I-3	IT Status - This is planned, but no vendor is selected. Business case needs development. Members to include business owner (?) and IT. Need to identify business requirements and outcomes.
Postpone On-Premise IVR Implementation Pending a Coordinated Review with City CIO	Table 3.I-3	IT Status - After review with City of Detroit CIO, this effort is moving forward. Estimated completion date: April 30, 2015.
Conduct Billing Application (EnQuesta) Review and Evaluation	Table 3.I-3	IT Status - Not planned but needs to add as a step to undertake prior to investing in next release of EnQuesta. Estimated completion date: January 31, 2016.
Build a highly qualified team to enhance service delivery.	3.I-4	Customer Service Status - This is a work in progress --- Customer Service is working through the PEP Process and with vendors to accomplish this goal.
Build recognition of the Customer Service "Value Chain"	3.I-4	Customer Service Status - This is an ongoing effort---Weekly Inter-Departmental Meetings
Develop a Technology-Strategic Plan	3.I-5	Customer Service Status - AMR-Phase II is currently in process; While an AMR Portal for Retail Customers is a great suggestion, acceptance/implementation will be deferred to Executive Management for a decision; New IVR, Replacement of current ACD system and purchase of Invoice Cloud for EBPP are current works in discussion/process.
Improve Inbound Call Handling	3.I-9 & 3.I-11	Customer Service Status - Call trends have showed a continual decrease in incoming calls since September 2014, decreased customer wait time, decrease in length of call and a decrease in Call Abandonment Rate. Call priorities have been updated and back-office work has been transferred from the Call Center. Further, the IVR will address the announcement of Estimated Wait Times.
Development of more business processes and procedures	3.I-9	Customer Service Status - Work in Process
Collect "Bill To" (tenant) and "Owner" information on all accounts	3.I-10	Customer Service Status - This is accomplished via the L/T Process

Veolia Recommendation	Page Ref. No.	Status
Reading Meters to reduce estimated billing and improve revenue forecasts	3.I-11	Customer Service Status - AMR-Phase II Process is in process
Improve quality of customer information in the billing system for higher accuracy billing	3.I-13	Customer Service Status - The move to Name-Based Billing is a work in progress
Outsource Bill Print and Mail Operations	3.I-13	Customer Service Status - This is a work in progress
Improve customer payment experience to improve collections	3.I-14	Customer Service Status - This is a work in progress
Realign collection work processes to strive for 95% collectible revenue	3.I-14	Customer Service Status - Work in this regard is in progress now. We are reviewing current system status codes to ensure proper alignment; also, efforts to improve collections, which includes ensuring billing accuracy and discontinuing service where necessary to positively affect the AR.
Create SOPs for critical path processes and clarify approval process	3.I-15	Customer Service Status - This is done through work queue; Need to communicate with Security regarding SOPs in case of robbery attempts.
Revamp KPI's to be more performance-based	3.I-17	Customer Service Status - This is currently being reported using Industry Standards as our guide.
Identify and deliver skill-building training	3.I-17	Customer Service Status - This is currently occurring. Team Leaders are in place to bridge the gap associated with the learning curve.
Residential Meter transition of Non-AMR accounts to AMR accounts	3.I-19	Meter Operations Status - AMR Project II is in progress. The plan is to transition all active accounts to AMR by June 30, 2015.
Residential Meter Health & Replacement Program		
Replacement plan (meters & batteries)	3.I-20	Meter Operations Status - Currently DWSD does change out meters based on performance of particular brand & model. The AMR equipment, Meter Interface Unit's (MIU) battery is rated for 20 year life. If MIU battery fails prior to the 20 year life, then manufacturer provides new unit with prorated cost. CIP funds are identified for 20 year meter and MIU replacement plan.

Veolia Recommendation	Page Ref. No.	Status
Meter testing	3.1-20	Meter Operations Status - Prior to July 29, 2013, DWSD used to test all removed meters. Since July 29, 2013, DWSD changed the business process to test the meters only on customer's request. We concur with Veolia's recommendation that program to test all removed meters should be reinstated. This will provide the much needed data for customer dispute resolution and database for meter change out planning based on meter size, year of manufacture, manufacturer and type. Meter Operations is working on a business plan identifying the resources and software modifications needed to reinstate the meter test program.
Increase staffing levels	3.1-20	Meter Operations Status - Department needs to make a decision on Veolia's recommendation to increase the meter testing staff by three (3); Staff position Field Service Technician
Wholesale Meter Accountability & Accuracy		
Meter testing and replacement, change-out and right-sizing (5% -10% inaccuracy not uncommon - assumed conservative 1%)	3.1-20	Meter Operations Status - DWSD currently test/calibrate wholesale meters semi-annually, and also inspect meter pits semi-annually. Total of four (4) preventive maintenance work orders for each meter site. Wholesale meter upgrade program is in progress. We upgrade ten (10) meters in-house annually. During the upgrade, meter usage is taken into consideration to right size the new meter. CIP project is approved to upgrade meters and rehabilitate the fifty (50) worst meter pits; the funds are identified starting fiscal year 2015-16. RFQ is issued to Sigma (contractor) to conduct the study at remaining One Hundred Sixty-Four (164) meter pit locations for improvements including the meter upgrade.
Install meters in Dearborn (8% -10% increase - assumed 8%)	3.1-20	Meter Operations Status - There are Forty-Two (42) unmetered connections for Dearborn. Currently Dearborn reports its retail sales to DWSD; DWSD adds 15% water loss to the retail sales and bills Dearborn for the calculated volume. In the past, there were discussions to meter Twenty-Six (26) connections while shutting other Sixteen (16) connections. Department needs to make a decision if metering 26 connections for Dearborn is financially feasible.

Veolia Recommendation	Page Ref. No.	Status
Metering other unmetered locations	3.I-20	Meter Operations Status - This is in reference to Highland Park. Department needs to make a decision if Highland Park will be a wholesale customer in the future.
Codes & Procedures	3.I-20	Meter Operations Status - Veolia recommends working with the wholesale customers to develop set of codes to protect the distribution system from customer interference or operational changes. Department needs to make a decision if this can be discussed and implemented.
3.J - Support Functions		
3.J.1 - Human Resources (Organizational Development)		
Workforce Planning & Management - The recommended approach would include a strategy to retain and invest in the current employees.	3.J-1	Organizational Development Status - The optimization program provides a strategy to retain and invest in current employees. We are creating the comprehensive training plan and opportunities to ensure the success of our current employees.
The first step in this process would be to complete a thorough needs assessment to identify gaps in the skills and capabilities of the organization. DWSD engaged a consultant to perform a compensation survey for its new job classifications, and we recommend this be broadened to include a compensation survey across all job categories within DWSD.	3.J-2	Organizational Development Status - DWSD reduced the number of job classifications, and as a result, it was beneficial to only survey the new classifications.
Veolia's review found that compensation is lower than would be expected for certain positions, and this contributes to DWSD having difficulty in terms of attracting and retaining qualified staff. This results in DWSD having to hire contract employees in key positions. While this type of an approach provides relief to DWSD on a short-term basis, it is not a viable long-term solution, since this talent may eventually leave the organization and the position will need to be filled again.	3.J-2	Organizational Development Status - The compensation survey has been completed. The new classifications have been assigned total compensation more aligned with the market.
3.J.2 - IT and Data Management		
Build a highly qualified team at the IT Department to enhance service delivery	3.J-14 3.J-16	IT Status - This is planned. ITS released CS-1677 "Information Technology Staffing" in January of 2015. The RFP seeks proposals from firms to provide staff augmentation services on a contract-for-hire basis for various Information Technology Services roles. The plan is to bring on 21-28 additional IT staff by April 30, 2015.
Establish a PMO function to oversee IT processes, procedures and project delivery	3.J-16	IT Status - This is currently In process. Estimated completion date: June 30, 2015.

Veolia Recommendation	Page Ref. No.	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> <p>It is also recommended that the IVR project be suspended as an immediate project until such time as the Customer Service business is considered in the overall requirements.</p>	3.J-24	<p>IT Status - There is a concern that the various IT initiatives will not provide the expected value. 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 being established under a similar model and will be up and running by March 31, 2015.</p> <p>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> <p>After review with City of Detroit CIO, this effort is moving forward with an April 2015 installation target.</p>
Develop a three-year IT strategic plan	3.J-25	<p>IT Status - 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.</p>
Develop procedures to improve process management	3.J-25	<p>IT Status - Currently underway. Implementing new Project Management, Change Control and IT Security practices.</p> <p>Estimated completion date: June 30, 2015</p>
Strengthen IT Helpdesk function	3.J-26	<p>IT Status - Currently underway. Staffed with new folks (three on contract). Implementing ITIL based business process supported by Dell KACE Implementation.</p> <p>Estimated completion date: June 30, 2015</p>
Validate KPIs and SLAs with key business application sponsors	3.J-27	<p>IT Status - Unplanned, but will be incorporated into application stabilization process.</p> <p>Estimated completion date: January 2016</p>
Reduce or repurpose 21 FTEs	3.J-28 3.J-30 3.J-31	<p>Procurement Status - In progress with restructure</p>
Clarify job descriptions to improve performance metrics	3.J-28	<p>Procurement Status - In progress to implement with restructure by Mar 2015 and include cross training plans</p>
Categorize tangible spend categories to create cost savings	3.J-32	<p>Procurement Status - In progress to incorporate spend analytics, category management, commodities, etc.</p>
Optimize use of RFPs and reduce use of RFQs	3.J-32	<p>Procurement Status - In progress</p>

Veolia Recommendation	Page Ref. No.	Status								
Leveraged Purchases										
Improve use of GSA Contracts and Cooperative Purchases to reduce purchasing time-frames and leverage volumes	3.J-32 3.J-33	Procurement Status - Incorporate Cooperative Purchasing criteria in contract approval process; post list of Cooperative Purchasing Organization on intranet portal by Mar 2015								
Eliminate acceptance of post-base term price increases by suppliers	3.J-33	Procurement Status - In progress								
Adopt payment term negotiations and unlock savings for working capital	3.J-33	Procurement Status - In progress								
Supply Management & Development										
Implementation of "Just-in time" (JIT) approach	3.J-36	Procurement Status - In progress to identify Vendor Managed Inventory and Consolidated Logistics (LTL) opportunities by April 2015								
Quarterly Business Reviews with Key Suppliers	3.J-36	Procurement Status - Launched Supplier Quarterly Business Review (QBR) process in Dec 2014 with initial focus on outsourced services on "As-Needed" contracts								
Eliminate unnecessary minimum cycle times	3.J-37	Procurement Status - In progress								
Increase purchasing threshold for recurring expenses requiring Board approval	3.J-37	Procurement Status - Subject to administrative court order and contingent upon Memorandum of Understanding (MOU) and Service Level Agreement (SLA) with bifurcation of GLWA and DWSD-R								
Improve clearance processes Consolidate assigned staff to a portion of one FTE Transfer clearance responsibilities to bidder	3.J-38	Procurement Status - Pursuing Inter-Agency Data Sharing Agreement (IDS) between City of Detroit and DWSD with target implementation by Mar 2015								
Improve requisition validation process	3.J-38 3.J-39	Procurement Status - Contingent upon ERP/CMMS and workflow constraints								
Competitive Benchmarks										
Require competitive bidding and minimum of two bids for small purchases	3.J-38	Procurement Status - In progress to review Detroit-based equalization requirements and small purchase practices								
Develop and implement surplus assets program	3.J-39	Procurement Status - Pursue appraisal services for assets pursuant to court order								
Chemical Purchases ~ \$24 mil Total Spend 1. Conduct a specifications review to determine if the correct minimum product is being purchased using the most optimal transportation modes	3.J-40 3.J-43	Procurement Status - In progress <table border="1"> <thead> <tr> <th>Commodity</th> <th>FY 2014 Savings</th> </tr> </thead> <tbody> <tr> <td>Alum</td> <td>\$ 90,000</td> </tr> <tr> <td>Ferric Chloride</td> <td>\$ TBD</td> </tr> <tr> <td>Liquid Chlorine</td> <td>\$ 67,000</td> </tr> </tbody> </table>	Commodity	FY 2014 Savings	Alum	\$ 90,000	Ferric Chloride	\$ TBD	Liquid Chlorine	\$ 67,000
Commodity	FY 2014 Savings									
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Equipment Rentals ~ \$0.9 mil Total Spend 1. Conduct a specifications review to determine if the correct product is being rented	3.J-41 3.J-43	Procurement Status - In progress								

Veolia Recommendation	Page Ref. No.	Status
<p>Contracted & Professional Services ~ \$112 mil Total Spend; Pursue significant reduction in contracted services , especially those related to labor support:</p> <ul style="list-style-type: none"> a. Construction & Repair Services b. Professional & Consulting Services ~ \$33.8 mil <p>Total Spend-38 Suppliers</p>	<p>3.J-41 3.J-42 3.J-44 43</p>	<p>Procurement Status - In progress with initial focus on As-Needed, Engineering Services and Skilled Trades contracts</p>
<p>State of Michigan requirements for green infrastructure – 2 contracts ~ \$15.6 mil</p> <ul style="list-style-type: none"> a. Fuel (retail and bulk) b. MRO/operational supplies and spare parts c. Fleet & Rolling Stock 	<p>3.J-43</p>	<p>Procurement Status - Include in current life cycle cost analysis of fuel management system and fleet management</p>
<p>2. Track negotiated pricing against the commodities market in order to identify price reduction opportunities and identify when the existing pricing is able to “beat the market” showing cost avoidance</p>	<p>3.J-43</p>	<p>Procurement Status - Plan to collect competitive intelligence</p>
<p>1. Tender equipment rental as an RFP, rather than as an RFQ, in order to open up negotiation opportunities and improve the competition from national suppliers trying to capture local market they exist in (awarded on daily rates vs. weekly rates)</p>	<p>3.J-44</p>	<p>Procurement Status - In progress</p>
<p>2. Analyze rent versus buy opportunities and complete Total Cost of Ownership (TCO) analysis on all cost line items (fees, taxes, title, charges, training, etc.) for better determination.</p>	<p>3.J-44</p>	<p>Procurement Status - Incorporate “rent versus buy” analysis requirements for Requestors of requisitions with Procurement to assist as necessary due to resource constraints</p>
<p>Health and Safety</p>		
<p>Expanding the DWSD staff in terms of both size and skill set The recommendation would be to expand DWSD’s current H&S staff from the level of three to six staff (FTEs)</p>	<p>3.J-47</p>	<p>Organizational Development Status – As part of the optimization program, two (2) additional Environmental Health and Safety Coordinators are being added.</p>

Veolia Recommendation	Page Ref. No.	Status
Security Unit		
Establish a return-to-work program <ul style="list-style-type: none"> It is recommended that a “Return to Work” program be established to encourage light duty or other opportunities in order to reduce lost-time accident rates. The current Return-to-Work policy is not applicable to workman’s compensation cases. 	3.J-49	Organizational Development Status – A Return-to-Work program is in place. We are in the process of securing a comprehensive Risk Management system that will increase our data storage, review and reporting capabilities to enhance the program’s effectiveness, and address items 3.J-49 through 3.J-51
Coordinate injury tracking & management with the City of Detroit Risk Department <ul style="list-style-type: none"> The Safety group must coordinate with Administration and develop a report that clearly identifies recordable and lost-time injuries and associated rates. Streamlining and documenting a procedure for handling claims as well as developing a return-to-work program to include light and restricted duty options is critical. 	3.J-50	
Invest in an automated tracking system of key safety metrics <ul style="list-style-type: none"> It is recommended that DWSD invest in the purchase of, or design of, an automated tracking system for managing data such as injuries, training records, audit inspection findings and corrective actions, compliance deadlines and other similar key metrics. 	3.J-51	
Form a team to evaluate security options for field staff <ul style="list-style-type: none"> It is recommended that a task team be formed to evaluate safety and security options for field staff. 	3.J-50	Organizational Development Status – As a part of the organization optimization program, a cross functional team of DWSD employees met to discuss various safety and security concerns. The results were presented to the Executive Management Team and some have been incorporated into Security’s operations. DWSD is anticipating having a similar discussion annually between DWSD employees and the Safety and Security units.
Utilize SMEs to build a safety training program <ul style="list-style-type: none"> It is recommended that DWSD delegate some training safety responsibilities directly to the Department, as opposed to continuing to have non-safety professions deliver safety training classes. 	3.J-50	Organizational Development Status – This is a focus of the training optimization program.
Form a task group to review both the security program as a whole and security options of field staff.	3. J-58	Security Unit Status – This task force methodology has been utilized by DWSD as a part of its optimization effort. The task force included individuals with law enforcement expertise. The task force developed information which was gathered, reviewed by staff, and used in 2013 to help formulate DWSD’s reorganization of its security function.

Veolia Recommendation	Page Ref. No.	Status																					
Validate that the general requirements presented above are already being addressed and implement corrective measures where deficiencies are identified.	3. J-58	Security Unit Status – DWSD Security has already begun this effort.																					
Conduct a comprehensive review of staffing requirements, including capabilities and training levels.	3 J-58	Security Unit Status – Security worked with DWSD’s training coordinator to review staff capabilities and training levels, and initiated a training program to ensure a unit wide training protocol and program.																					
Conduct security assessments for each site, including customer service centers: within the next six months.	3.J-59	Security Unit Status – These assessments have been completed. Resulting non-exigent improvements will be made in the 2015-16 Fiscal Year.																					
Train payment center agents and tellers on procedures in the event of an attempted robbery.	3.J-59	Security Unit Status – This training is scheduled to take place in 2015.																					
Train meter operations technicians who are out in the field making repairs or performing shutoffs for nonpayment to deal with personal security threats.	3.J-59	This training was completed in August and September, 2014. DWSD reinforces this with regular safety talks.																					
Consider outsourcing the on-site access point security.	3. J-59	Security Unit Status – DWSD considered and rejected this idea.																					
Consider providing specialty requirements such as criminal investigation, employee identification validation, parking security, monitoring of site access for those areas of high hazard (chlorination/de-chlorination, pure oxygen systems, etc.), in house.	3. J-59	Security Unit Status – This is currently done by DWSD security with new considerations added each time a new technology, strategy, or protocol is created.																					
Quick Wins																							
Cost Savings (Reductions, Avoidance, Containment)																							
<i>Achieve Support Functions Savings estimated below</i> <table border="1"> <thead> <tr> <th>FY</th> <th>Total Savings</th> </tr> </thead> <tbody> <tr> <td>2015</td> <td>\$ 3,339,766</td> </tr> <tr> <td>2016</td> <td>\$13,039,870</td> </tr> <tr> <td>2017</td> <td>\$14,206,417</td> </tr> <tr> <td>2018</td> <td>\$14,243,761</td> </tr> <tr> <td>2019</td> <td>\$14,875,331</td> </tr> </tbody> </table>	FY	Total Savings	2015	\$ 3,339,766	2016	\$13,039,870	2017	\$14,206,417	2018	\$14,243,761	2019	\$14,875,331	ES-6, 4-3	Procurement Status - Continue to examine total value chain applying lean and value engineering/value analysis (VA/VE) methodologies to identify direct savings, cost containment, revenue generation opportunities; <table border="1"> <thead> <tr> <th>FY</th> <th>Realized Savings</th> <th>Forecast Savings</th> </tr> </thead> <tbody> <tr> <td>2014</td> <td>\$ 1,761,000</td> <td></td> </tr> <tr> <td>2015</td> <td></td> <td>\$ 1,650,000+</td> </tr> </tbody> </table>	FY	Realized Savings	Forecast Savings	2014	\$ 1,761,000		2015		\$ 1,650,000+
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<i>Achieve working capital gains through modified payment terms and early pay discounts</i>	ES-6, 4-3	Procurement Status - In progress																					
<i>Installation of fleet-wide GPS tracking system accounts for 100% of maintenance management savings (fuel and staff productivity)</i> <table border="1"> <thead> <tr> <th>FY</th> <th>Total Savings</th> <th>Cap Req'd</th> </tr> </thead> <tbody> <tr> <td>2015</td> <td>\$108,000-\$307,000</td> <td>\$ 90,000</td> </tr> </tbody> </table>	FY	Total Savings	Cap Req'd	2015	\$108,000-\$307,000	\$ 90,000	ES-7, 4-3	Procurement Status - Identified Top 7 Fleet Navigation System suppliers to benchmark and evaluate systems pending cost/benefit analysis contingent upon completion of physical inventory of fleet stock planned by Mar 2015															
FY	Total Savings	Cap Req'd																					
2015	\$108,000-\$307,000	\$ 90,000																					

Veolia Recommendation	Page Ref. No.	Status												
Reevaluate the current WAM Implementation of inventory and work order management modules in the absence of solid asset hierarchy methodology and population of system:	ES-12 3.D-3-9 3.J-17 3.J-21	Procurement Status - In progress												
2. Field verify all assets and adopt standard naming conventions	ES-12 3.D-7	Procurement Status - In progress												
3. Ensure that necessary information to make the desired repair and replacement (R&R) decisions is available	ES-12 3.D-7	Procurement Status - Contingent upon integration of Asset Management module												
4. Establish business rules, workflows, key performance indicators (KPI) and metrics	ES-12 3.D-7	Procurement Status - In progress												
5. Develop training program for CMMS use	ES-12 3.D-7	Procurement Status - Training plans in development												
6. Develop maintenance job plans for critical use assets	ES-12 3.D-7	Procurement Status - Contingent upon integration of Asset Management module												
Performance Reporting & Continuous Improvement														
Determine appropriate Key performance indicators (KPIs)	ES-13 4-5	Procurement Status – <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Functional Area</th> <th># KPIs</th> </tr> </thead> <tbody> <tr> <td>Procurement</td> <td>14</td> </tr> <tr> <td>Supplier Performance</td> <td>6</td> </tr> <tr> <td>Materials Management</td> <td>8</td> </tr> <tr> <td>Contract Administration</td> <td>5</td> </tr> <tr> <td>Grants Management</td> <td>8</td> </tr> </tbody> </table>	Functional Area	# KPIs	Procurement	14	Supplier Performance	6	Materials Management	8	Contract Administration	5	Grants Management	8
Functional Area	# KPIs													
Procurement	14													
Supplier Performance	6													
Materials Management	8													
Contract Administration	5													
Grants Management	8													
Develop robust reporting processes to communicate monthly results	ES-13	Procurement Status - Manual reports will be posted on intranet portal by April 2015 contingent on resource and system constraints until implementation of automated systems; Deploy 6-Certified Greenbelts within department on Lean initiatives by April 2015												
Implement new enterprise resource planning (ERP) system with integrated modules	ES-13	Procurement Status - Under evaluation												
Establish Scorecard in form of a computer dashboard or infographic accessible to all staff	4-5	Procurement Status - Manual scorecard will be posted on intranet portal by April 2015 contingent upon resource and system constraints until implementation of automated systems												
Streamline organization and processes to free up resources for strategic sourcing, supplier management and internal customer service	ES-18 ES-19 4-4	Procurement Status - In progress with restructure and evaluation of alternate delivery methods and eProcurement technologies to address constraints												
Energy Procurement/Management														

Veolia Recommendation	Page Ref. No.	Status
Prioritize and implement energy efficiency initiative; competitively procure electricity and gas commodity suppliers and incentive programs	ES-26 3.F-1 3.F-4 4-4	Procurement Status - Leverage Certified Energy Managers within DWSD to evaluate energy usage/utilization and requirements and consult with DTE for assistance with energy audits
Establish Energy Program Manager position and consider position reporting to COO	ES-26 3.F-1 4-4	Procurement Status - Leverage Certified Energy Managers within DWSD