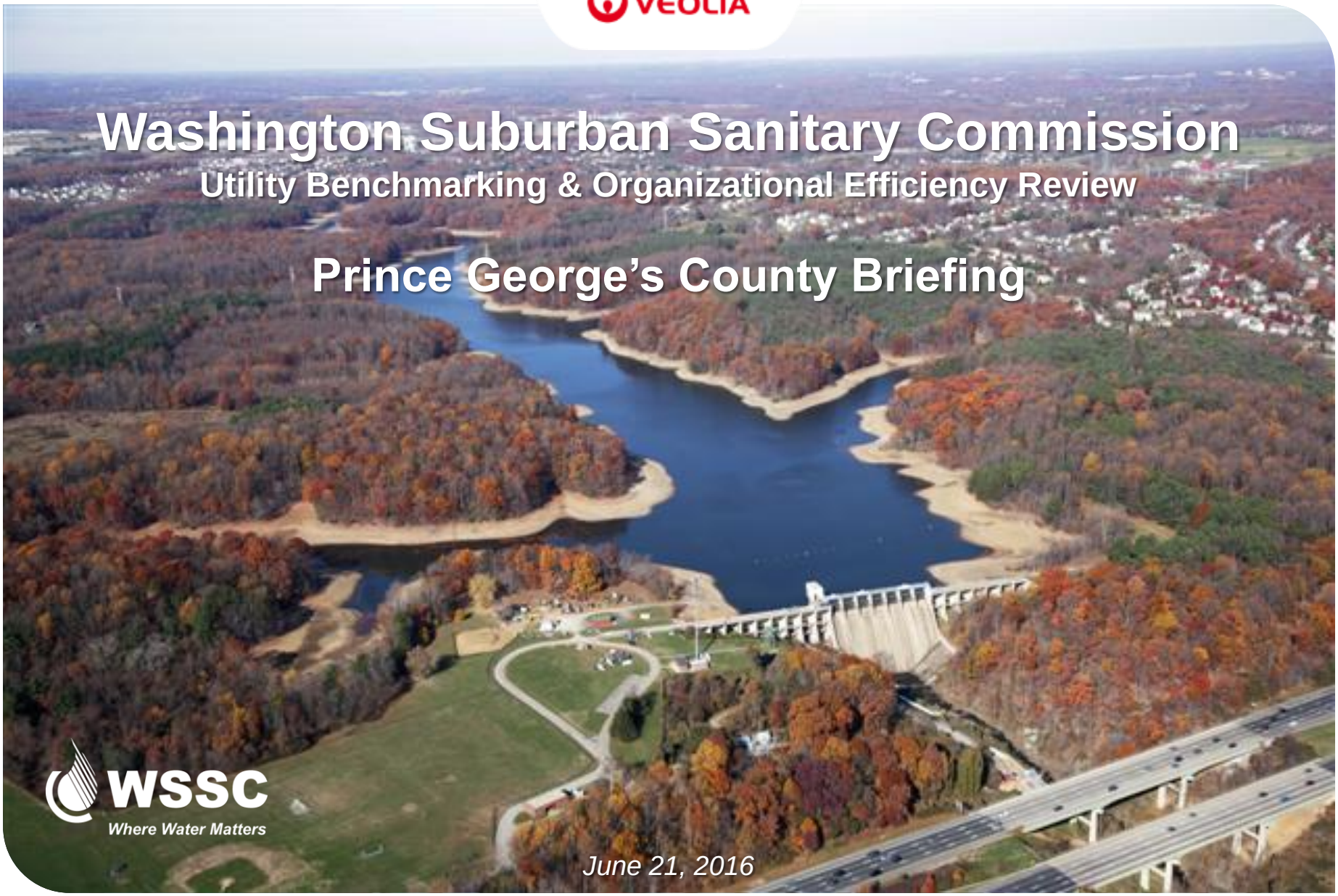


Washington Suburban Sanitary Commission

Utility Benchmarking & Organizational Efficiency Review

Prince George's County Briefing

WSSC
Where Water Matters

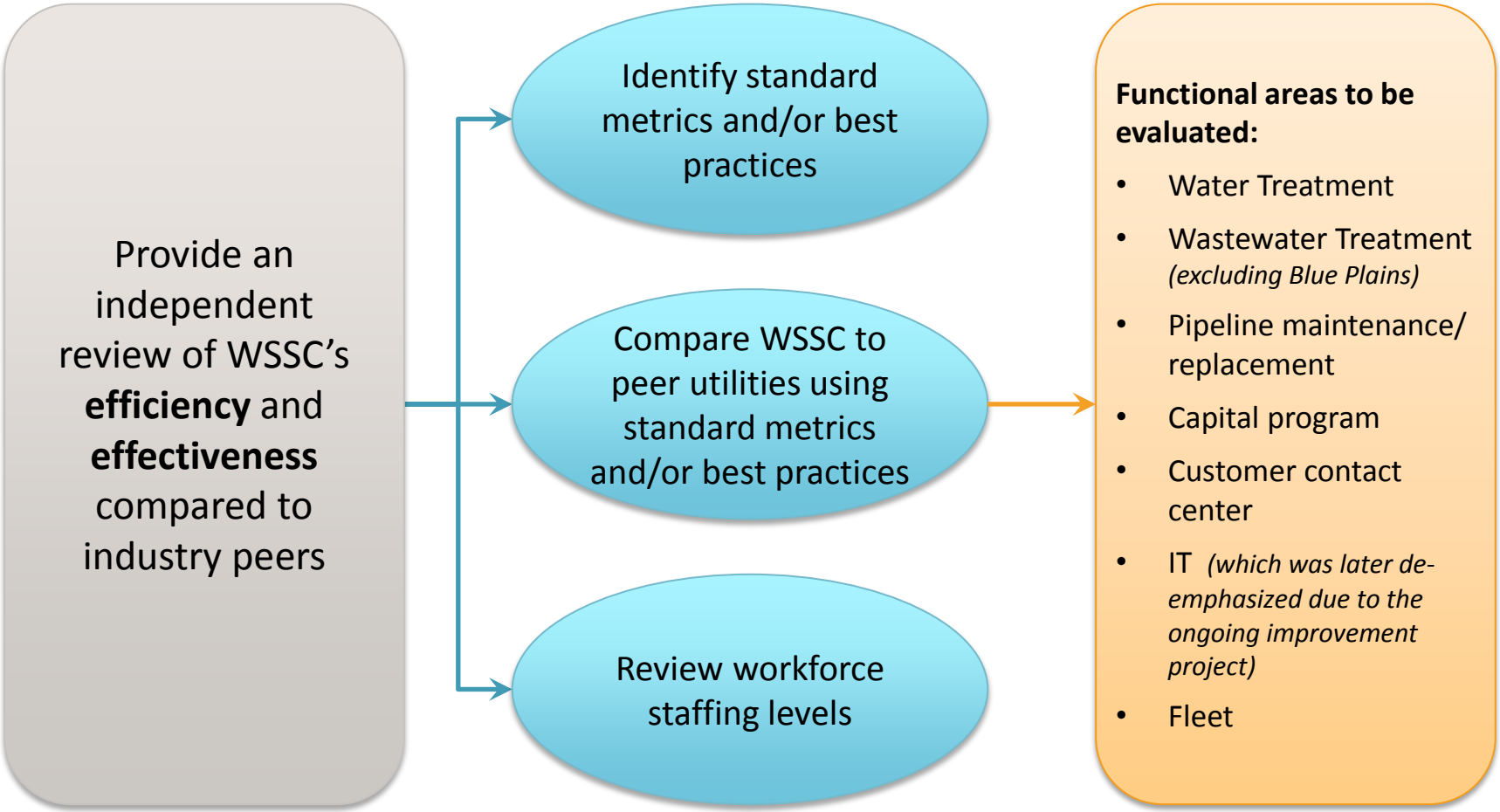
June 21, 2016

Meeting Objectives

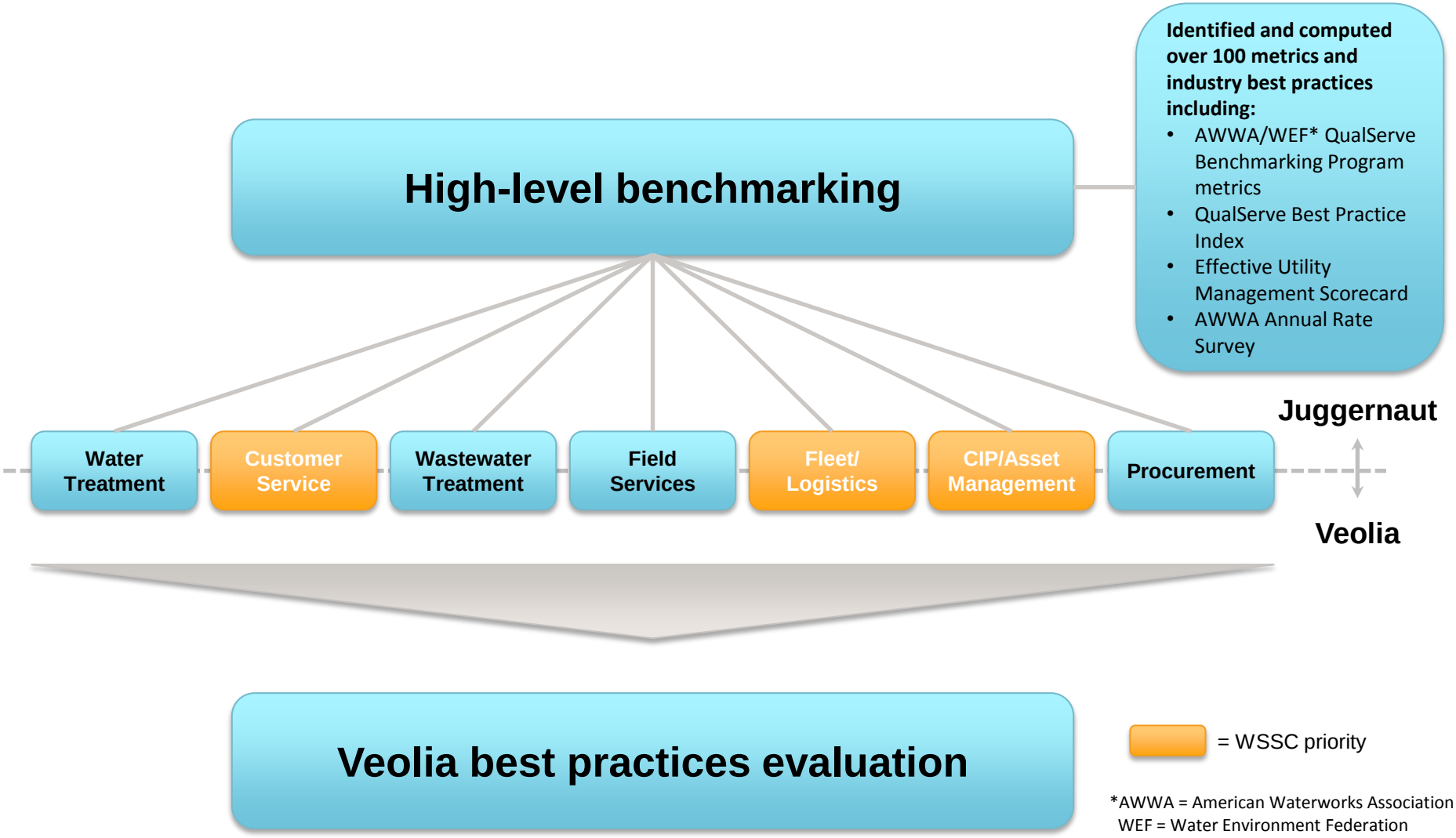
- Project Primer and Timeline
- Study Findings Summary
  - *General Benchmarking*
  - *Customer Service*
  - *Fleet*
  - *CIP/Asset Management*
  - *Procurement*
  - *Utility Services*
  - *Water Treatment*
  - *Wastewater Treatment*
- Q&A

Project Primer and Timeline

The objectives of this study were multi-tiered…



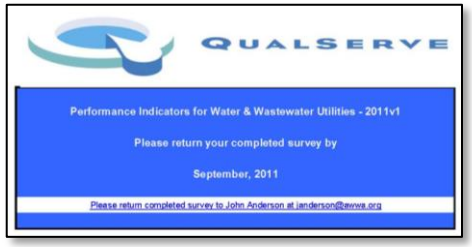
…which led to our two-pronged approach to the Study



Part one: High-level benchmarking

1. QualServe benchmarking comparisons were made with:
   - *Combined water and sewer utilities*
   - *Large utilities**
2. Staffing comparisons were made with large utilities*, with functional comparisons made with:
   - *Similarly regulated utilities*
   - *Utilities with large pipelines*
3. Rate and affordability comparisons were made with the top 50 utilities
4. Financial metric comparisons were made with large utilities*

Comparisons were made to **more than 70 utilities**. Peer utility groups were formed to reflect the specific comparisons made



** QualServe utilities serving more than 500,000 customers*

Part two: Veolia best practices evaluation

Top Down Evaluation:

- Collect and evaluate relevant data, practices and metrics
- Conduct interviews at executive and management levels to validate data, practices and metrics
- Based on defined, internal Veolia standard scale, score performance of WSSC

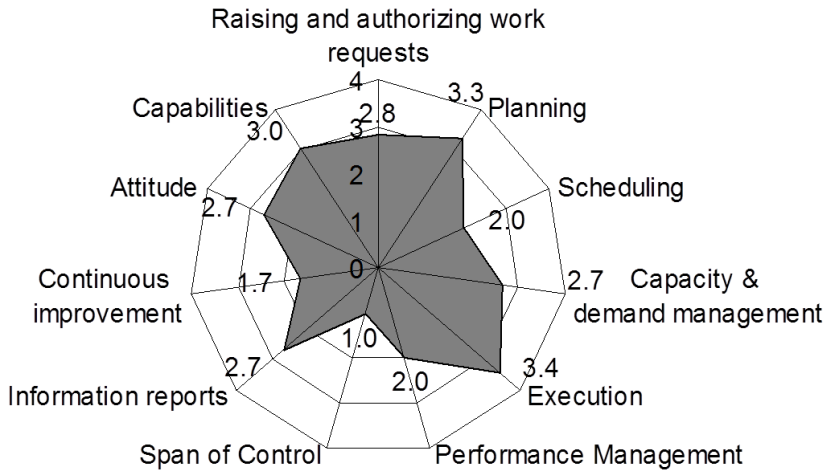
Identify Opportunities:

- Use gap analysis to identify low scoring performance areas
- Determine potential improvement(s)

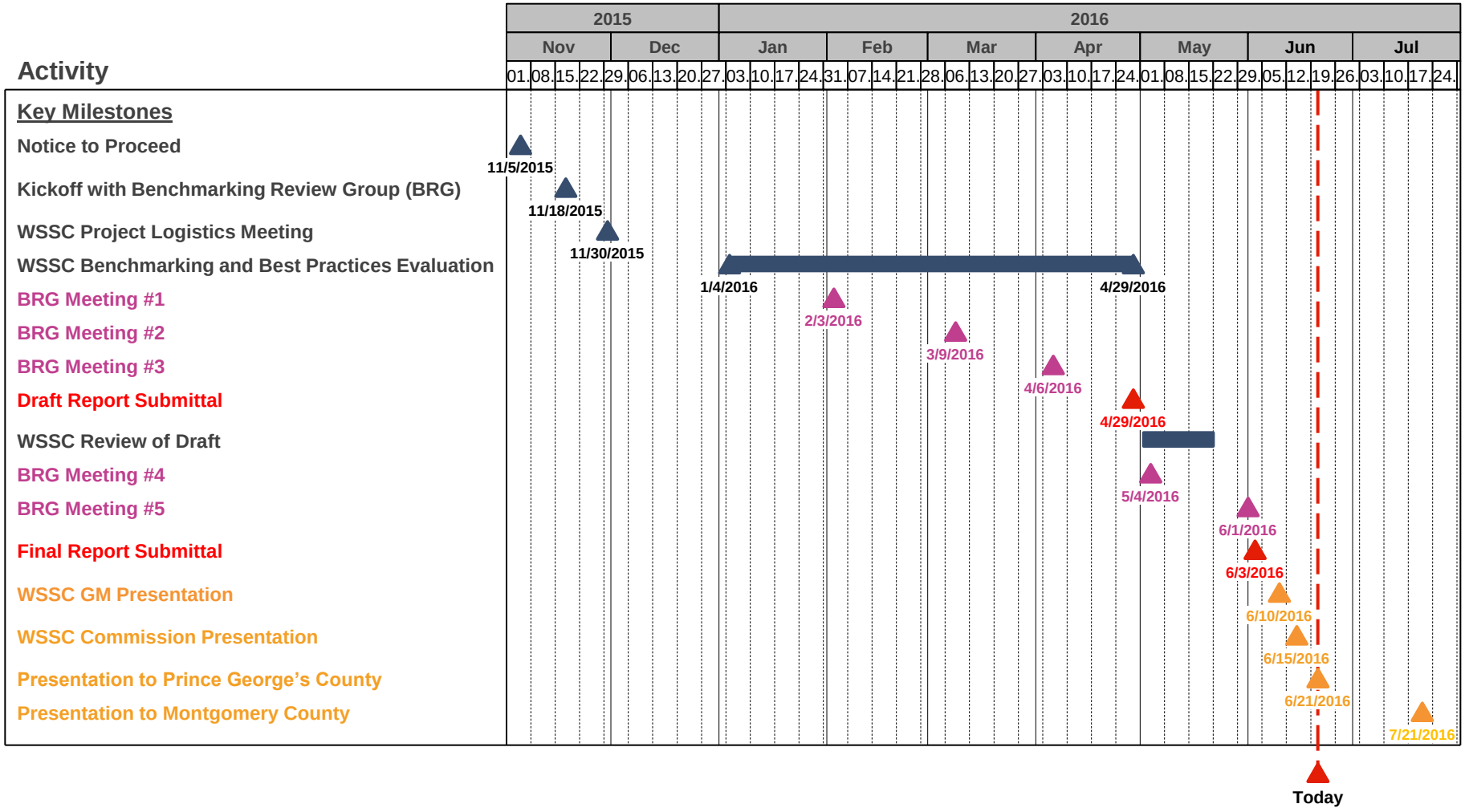
Maintenance Management Process Diagnostic

Criteria	Observed elements	Poor 1	2	Good practice 3	4	Best in class 5
1 KPI definition	▪ 10 operational KPIs available at supervisor and staff level ▪ 8/10 KPIs are not directly linked to company performance					
2 Reporting formats and frequency	▪ Indicators tracked on the field but operators not aware of target ▪ Reports not up-to-date and focused on financial KPIs					
3 Data collection, report production	▪ Some structure for data and report storage ▪ Insufficient IT support					
4 Target setting	▪ Some targets assigned but most people unaware of them					
5 Improvement planning (mid term)	▪ No improvement actions defined					
6 Performance review	▪ Meeting at management level only (not line) ▪ Discussion focused on performance gaps, but preliminary analysis often not done (lack of ownership)					

Diagnostic summary



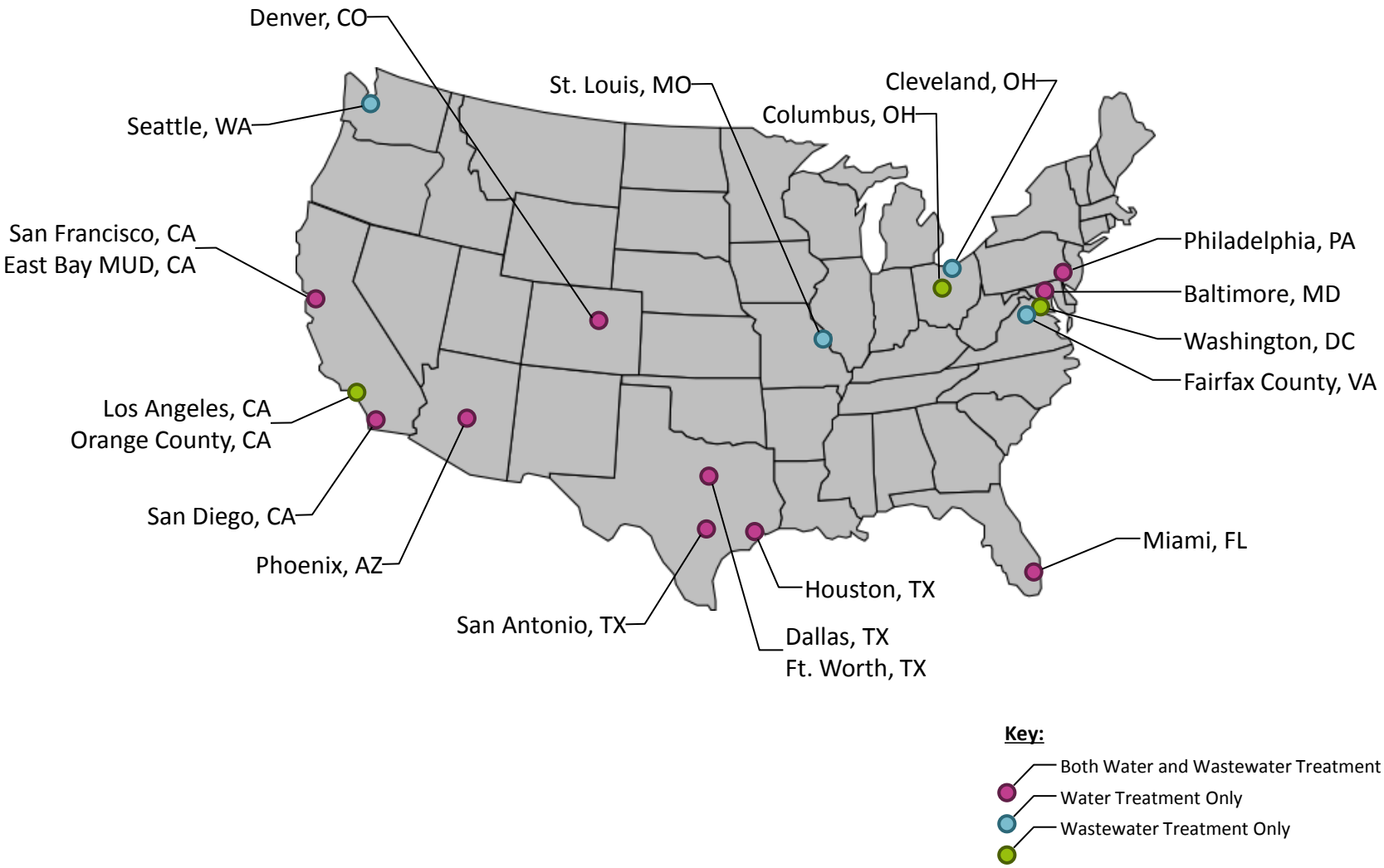
Key project milestones



Study Findings Summary:

- General Benchmarking
- Veolia Best Practices Assessment

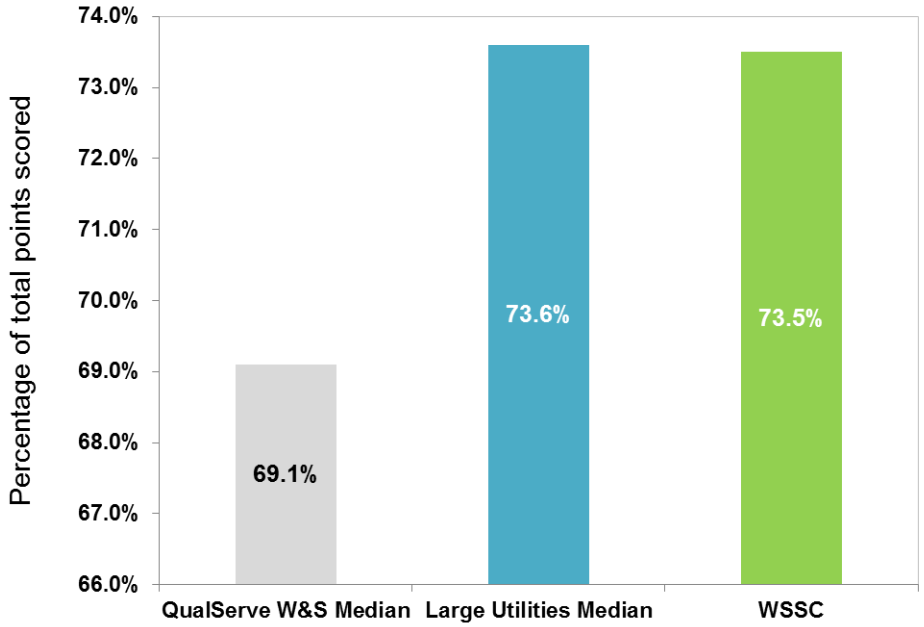
Peer utilities of similar size and function as WSSC were chosen for the Benchmarking effort



Overall, WSSC staffing generally appears to be at or below the median compared with its peers

Staffing Focus	Comparison	Result
Water services	Large Utilities	 Below median
Wastewater services	Large utilities	 Below median
W/W Treatment FTEs	Chesapeake Bay dischargers	 Below median
Collection system FTEs	Utilities with large collection systems	 Below median
Functional area staffing	19 large utilities	 At or below average except for IT and Engineering and Construction
Staffing Distribution	QualServe utilities – large and combined water and sewer	 Management and Engineering high; others at or below median

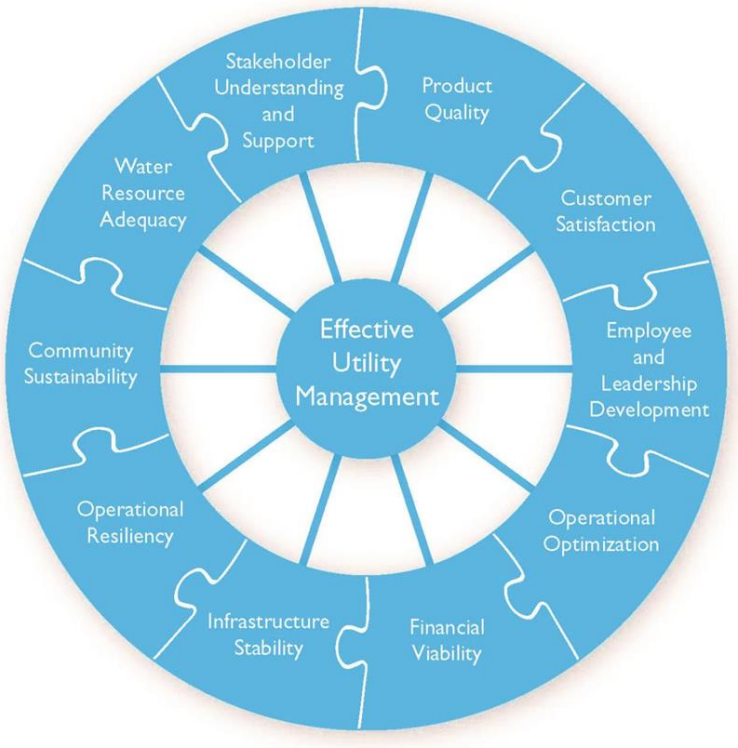
In aggregate, WSSC scores above the QualServe W&S population and slightly below Large Utilities



Findings:

- **WSSC did better than the combined utility median for 8 out of the 11 best practice elements**: *Long-Term Financial Planning, Risk Management Planning, Governing Body, Customer Involvement, Customer Involvement, Drought Response, Source Water Protection Plan, Succession Planning, and Continuous Improvement*
- **In two of WSSC's lowest score areas, the utility universe, as a whole, did poorly.** This suggests that these areas are still industry-level challenges and not necessarily specific to WSSC.

In aggregate, WSSC exceeds industry median for 6 of 10 EUM Attributes



Attribute	Overall Performance
Product Quality	🟢
Customer Satisfaction	🔴
Employee and Leadership Training	🟢
Operational Optimization	🔴
Financial Viability	🟢
Infrastructure Stability	🔴
Operational Resilience	N/A*
Community Sustainability	🟢
Water Resource Adequacy	🟢
Stakeholder Understanding and Support	🟢

*WSSC only had information readily available at the time of the study to calculate measures related to 9 of 10 areas, as indicated

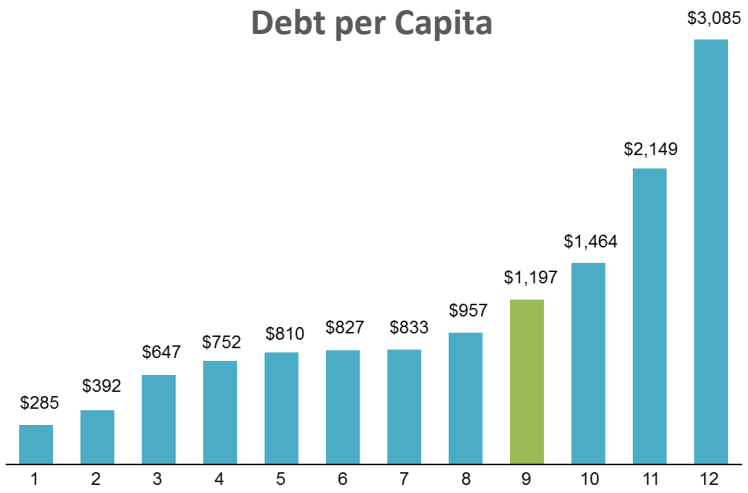
Financial performance, compared with its peers, is mixed (WSSC in green)

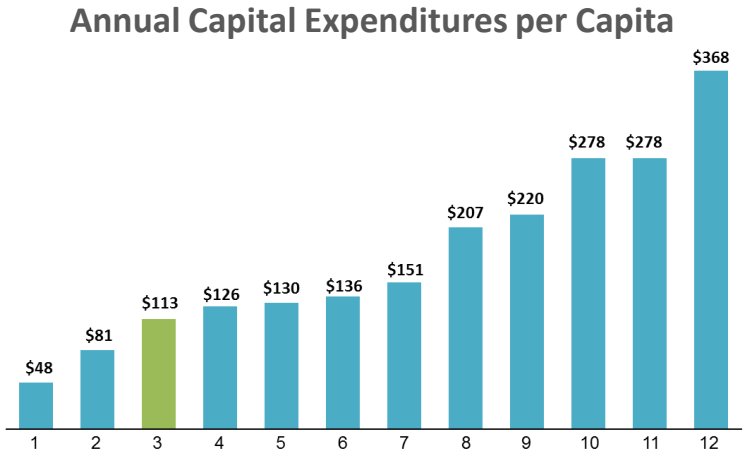
Measure	WSSC	QualServe Median*	Large-Utility Median
Bond rating	AAA	AA	n/a
Debt ratio	34.2%	36.5%	53.0%
Return on assets	1.2%	1.5%	1.8%
Cash reserves adequacy (days)	276	259	195
Operating ratio	81.0%	61.4%	62.0%

* For bond rating, the median is actually the mode of the measure.

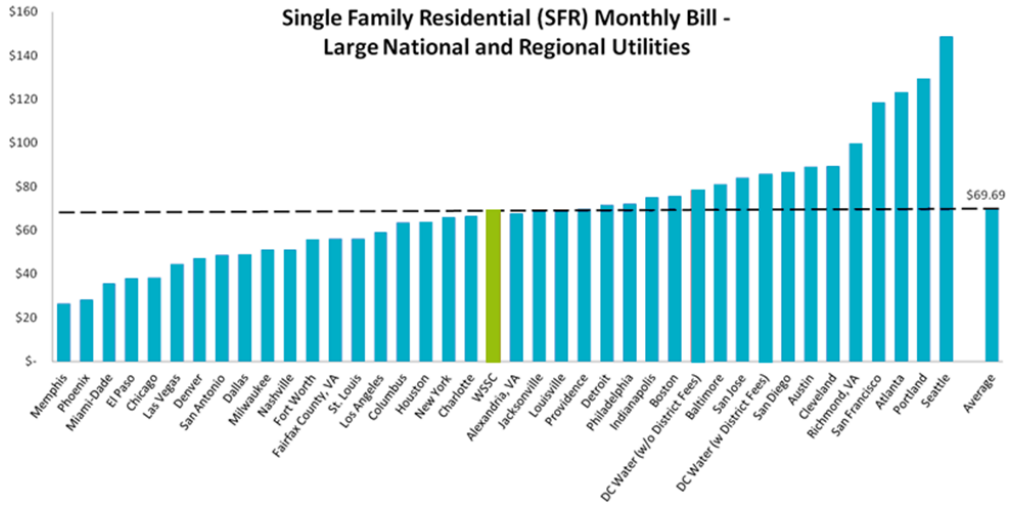
Findings:

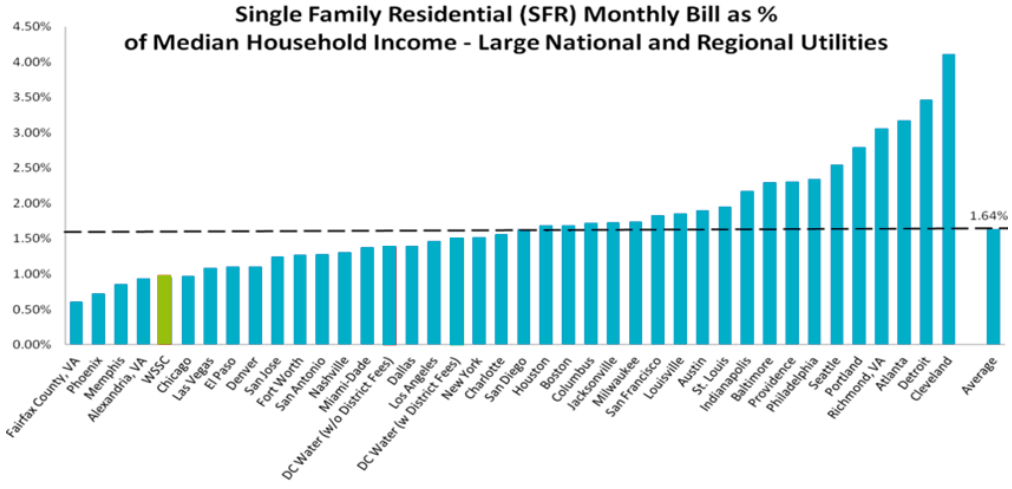
- Compared to its peers, **WSSC is the only across the board AAA Bond Rating.**
- WSSC also has the smallest percentage of revenue attributable to its 10 largest customers, which is an **indicator of revenue stability.**
- In addition to high debt levels, **WSSC also has an above average capital intensity** (ratio of net asset value to revenues).
- A promising sign is that the WSSC 5 year CIP (on a per capita basis) is below its peers offering an opportunity to improve its relative debt levels.





SFR monthly bills and affordability, compared to large utilities, is at or below average

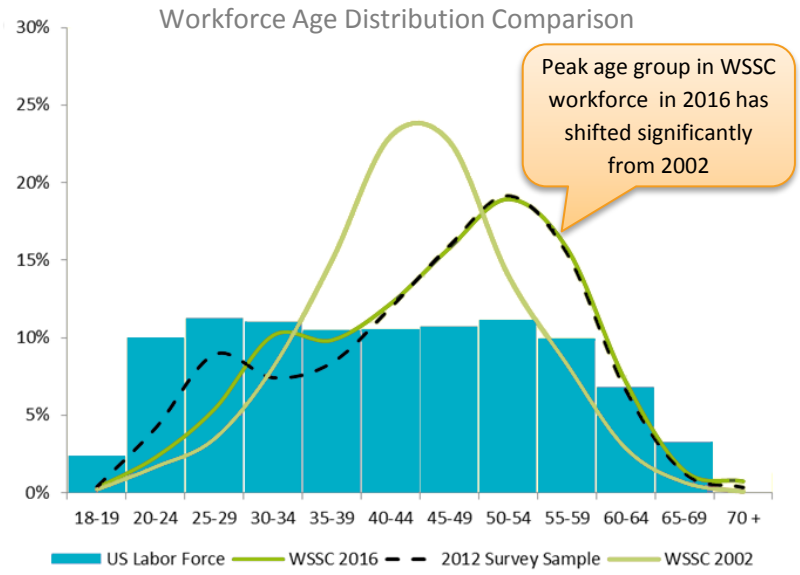




Findings:

- Despite historic declining per-capita usage, previous rate structure analyses have consistently found that there is no statistically significant correlation between the decline and prices.
- WSSC has a nonlinear rate structure because the rate charged to the entire volume of flow is dependent on the average daily level of flow.
- The rate structure does incentivize conservation, but when a customer can reduce consumption to be charged a slightly lower rate on the entire volume, the **revenue will decrease by more than the reduction in consumption making revenue less stable than it could be.**

WSSC faces a greater risk from retirements than many other utilities



Findings:

- The age distribution of WSSC has shifted from an approximately normal distribution to one that is **more heavily skewed in favor of older workers.**
- Although this transition reflects a **workforce turnover that is much lower in the utility industry**, it leads to higher average years of service.
- The average age of the U.S. workforce is approximately 42.34 years, while WSSC's is 46.68 years.

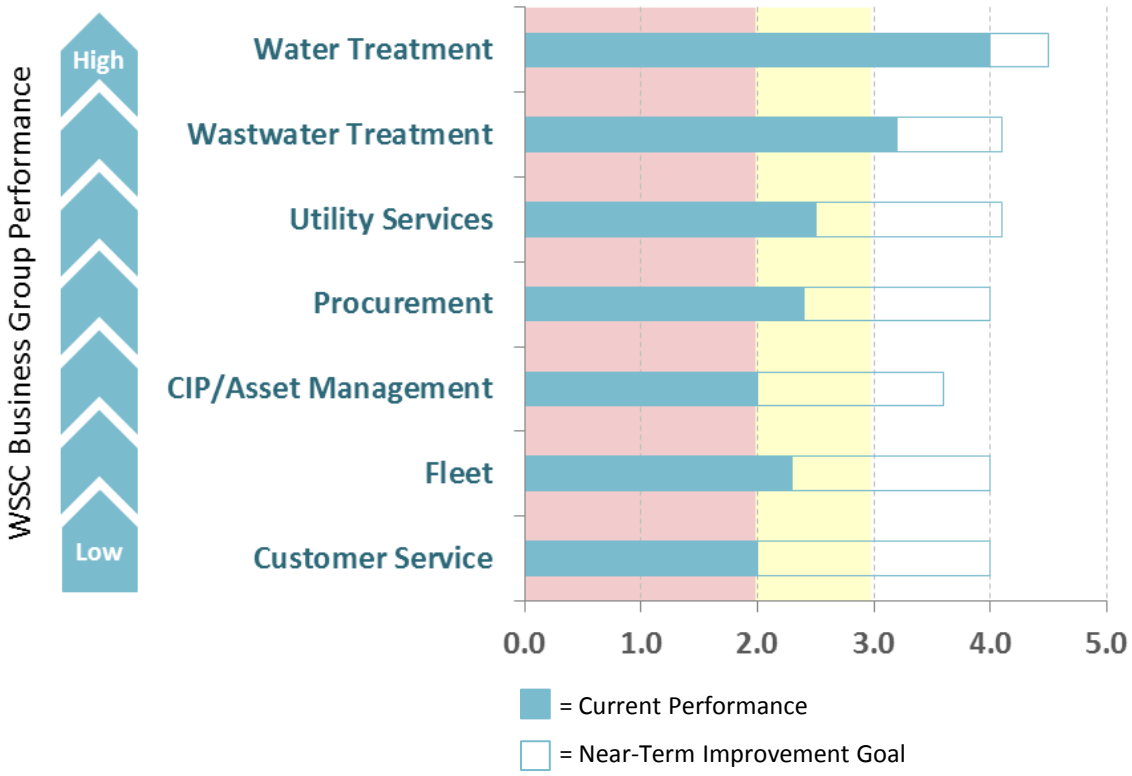
Best Practices Assessment for seven business groups within WSSC shows mixed results

WSSC Performance on Veolia Standards Scale:

- **Scoring:** Based on a scale from 1 (basic) to 5 (best in class)
- **Current Performance:** Based on a combination of data review, staff interviews and site observations
- **Near-Term Improvement Goal**: Based on current landscape, identifies where could WSSC be in less than 24 months with recommended improvement initiatives
- **Context:** Scores achieved for a large utility such as WSSC would normally range from 3 to 5.

Assessment Results:

- Production (Water and Wastewater Treatment), in general, is performing relatively well
- Customer Service, Fleet and Asset Management are struggling



Composite gap analysis summary identifies how significant differences in performance are

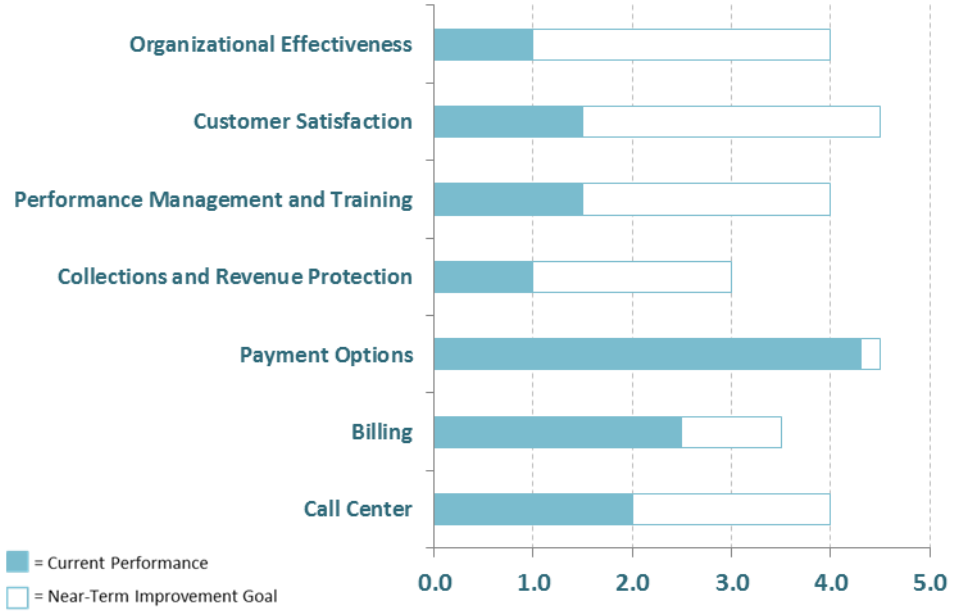
Business Area	WSSC Current Performance Score	Near-Term Improvement Goal	Arithmetic Difference	Significant?
Customer Service	2.0	4.0	2.0	Yes
Fleet	2.3	4.0	1.7	Potentially
CIP-Asset Management	2.0	3.6	1.6	Potentially
Procurement	2.4	4.0	1.6	Potentially
Utility Services	2.5	4.1	1.6	Potentially
Wastewater Treatment	3.2	4.1	0.9	No
Water Treatment	4.0	4.5	0.5	No

Recommended Areas of Initial Focus

Calculating the gap:

- The difference between actual performance and the near-term performance goal forms the basis of a gap analysis used to prioritize areas that have potential for additional improvement
- Any arithmetic difference of 2.0 or greater between actual performance and the near term performance goal was considered significant, and any difference in scores between 1.5 and 1.9 was considered potentially significant

Overall performance and gap analysis in CUSTOMER SERVICE

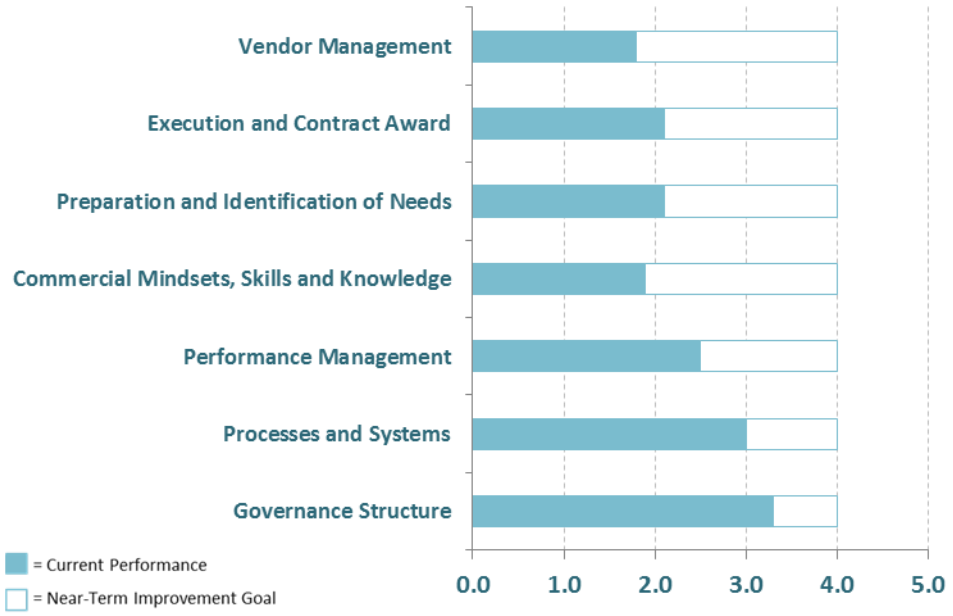


Category	WSSC Current Performance Score	Near-Term Improvement Goal	Arithmetic Difference	Significant?
Call Center	2.0	4.0	2.0	Yes
Billing	2.5	3.5	1.0	No
Payment Options	4.3	4.5	0.2	No
Collections and Revenue Protection	1.0	3.0	2.0	Yes
Peformance Management and Training	1.5	4.0	2.5	Yes
Customer Satisfaction	1.5	4.5	3.0	Yes
Organizational Effectiveness	1.0	4.0	3.0	Yes

Key Recommendations for Improvement:

- **Implement a data-driven customer service management system** based on industry standard KPIs and targeted levels of service; include reports of operational metrics reviewed regularly by various levels of management, with high-level KPIs reported upward to the Board of Commissioners.
- **Document Customer Service policies, procedures and processes**, including formalizing a process for handling escalated customer complaints; include a monthly process of analyzing root causes of complaints.
- **Cross-train all contract CSRs to handle all calls**, eliminate staffing of a special transfer queue, and change the current call routing scheme to funnel calls to the next available agent.
- Modify the call center interactive voice response (IVR) system to include the option of reporting an emergency as a first option, then **use just one phone number for customers**.
- **Use a professional utility bill print vendor service** to gain operational efficiencies.
- **Establish a dedicated field meter team**, that reports to Customer Service rather than Utility Services, to perform meter readings, shut-offs, turn-ons, collections, etc.
- **Design and implement a quarterly, transactional, telephone-based customer satisfaction survey** administered by a third-party market research firm to gain insight and analytics for analyzing and planning of customer service performance improvement initiatives.

Overall performance and gap analysis in PROCUREMENT

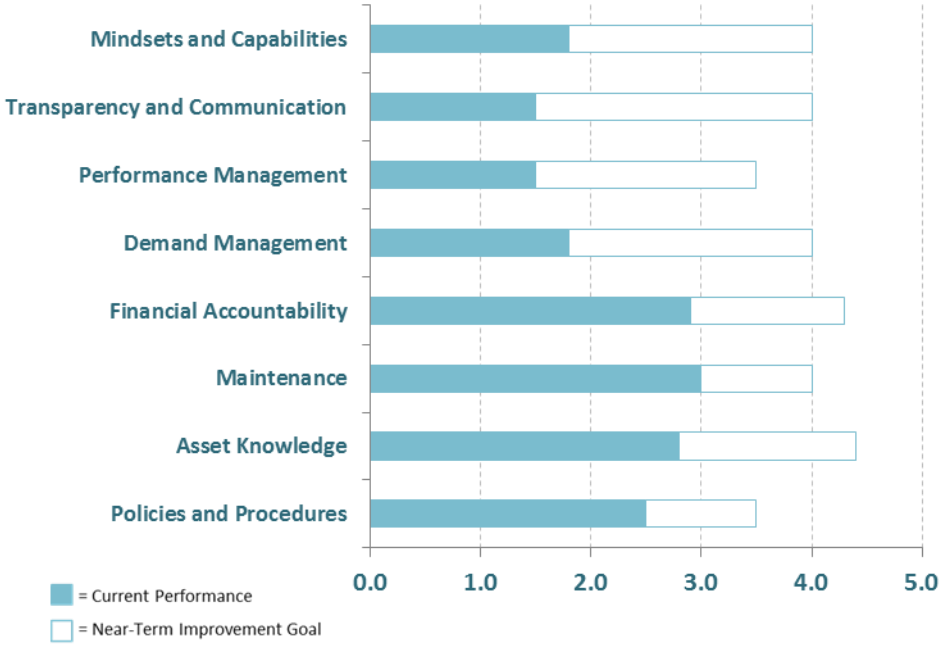


Category	WSSC Current Performance Score	Near-Term Improvement Goal	Arithmetic Difference	Significant?
Governance Structure	3.3	4.0	0.7	No
Processes and Systems	3.0	4.0	1.0	No
Performance Management	2.5	4.0	1.5	Potentially
Commercial Mindsets, Skills and Knowledge	1.9	4.0	2.1	Yes
Preparation and Identification of Needs	2.1	4.0	1.9	Potentially
Execution and Contract Award	2.1	4.0	1.9	Potentially
Vendor Management	1.8	4.0	2.2	Yes

Key Recommendations for Improvement:

- **Implement a performance management system** that is data driven, complete with KPIs based on level of service (LOS), performance metrics and LOS targets.
- **Staffing:** Fill the strategic vacant positions, develop category buyers, and clarify the roles and responsibilities of the Ops and Admin team.
- Develop and implement business practices that:
  - **Control the approval process and timelines**, including an electronic document management system
  - Use industry-standard benchmarking tools such as BidNet or SmartProcure.
  - **Expand metrics tracked** to include quality, cost, end-user satisfaction, vendors' performance, and spend compliance.
  - Outline and assign responsibility to **perform evaluation of vendor performance** (e.g. tracking/analysis of delivery times, packaging/ delivery options, vendor wait times when unloading product, forecast vs. usage, etc.).
  - Describe and assign responsibility to **perform analysis of the market basket** (spend vs. forecast) to improve demand projections, and formally track historical usages.

Overall performance and gap analysis in FLEET

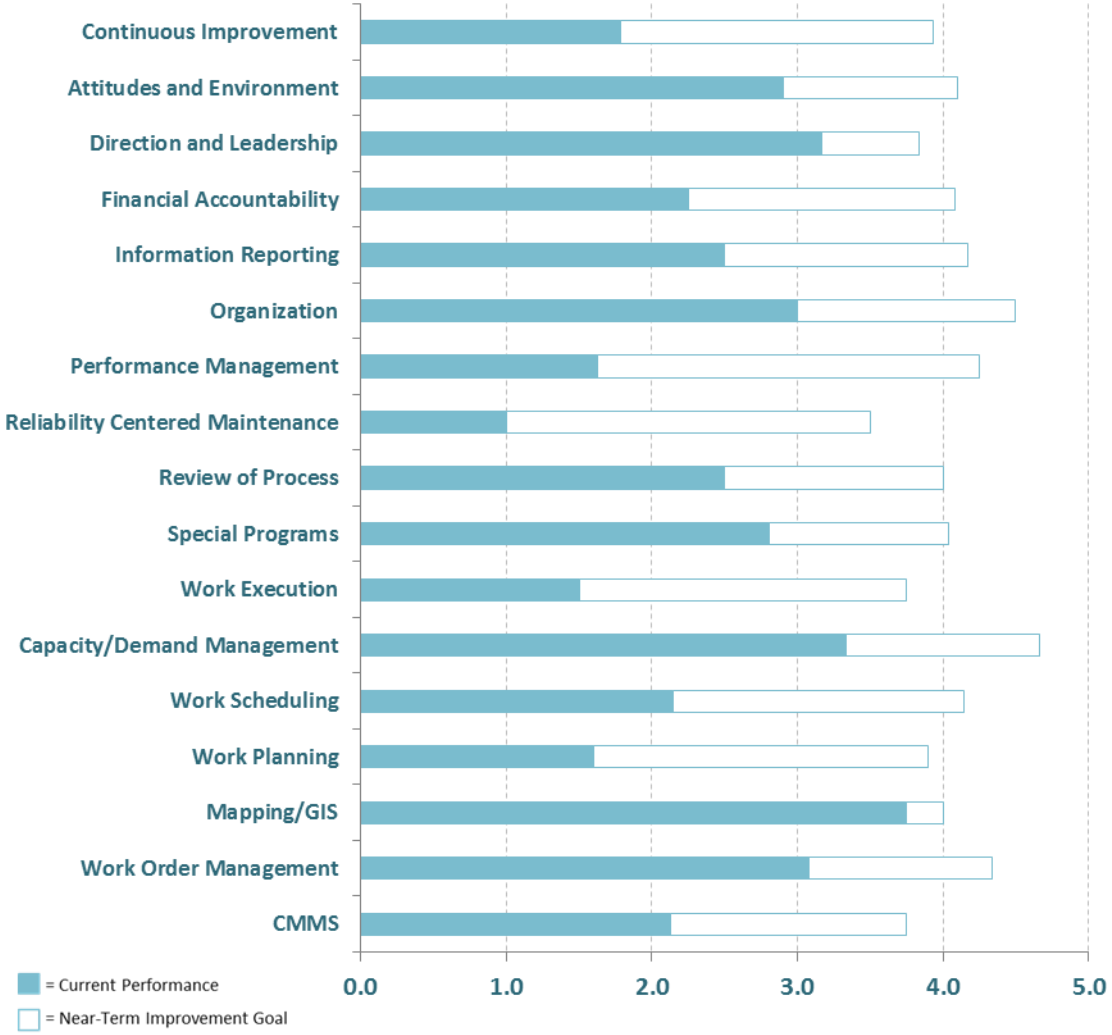


Category	WSSC Current Performance Score	Near-Term Improvement Goal	Arithmetic Difference	Significant?
Policies and Procedures	2.5	3.5	1.0	No
Asset Knowledge	2.8	4.4	1.6	Potentially
Maintenance	3.0	4.0	1.0	No
Financial Accountability	2.9	4.3	1.4	No
Demand Management	1.8	4.0	2.2	Yes
Performance Management	1.5	3.5	2.0	Yes
Transparancy and Communication	1.5	4.0	2.5	Yes
Mindsets and Capabilities	1.8	4.0	2.2	Yes

Key Recommendations for Improvement:

- **Implement a performance management system** that is data driven, complete with KPIs based on level of service (LOS), performance metrics and LOS targets.
- Assign someone from Logistics to **be responsible for regular QA/QC** of the data. Review TEAMS system fields to identify those that can be standardized to improve simplicity and analysis.
- **Install in-vehicle monitoring system** (IVMS) on each vehicle, providing the ability to track vehicle usage.
- Conduct a **comprehensive evaluation of right-sizing the fleet should be performed** to look for opportunities to reduce overall life cycle costs, including fuel, for vehicles in the fleet.
  - Evaluate the potential to **rent or lease specialty vehicles and equipment that are seldom used** and historically carry significant repair costs.
- **Develop standard vehicle specifications** to allow for bulk buying, better pricing and increased simplicity. Using TEAMS, develop metrics and dashboards that provide business cases for improvement in making vehicle and equipment purchasing decisions.
- **Establish clear communication channels**, both internally among Logistics and with other WSSC groups, and define how information gets circulated.

Overall performance and gap analysis in UTILITY SERVICES



Overall performance and gap analysis in UTILITY SERVICES (cont.)

Category	WSSC Current Performance Score	Near-Term Improvement Goal	Arithmetic Difference	Significant?
CMMS	2.1	3.8	1.6	Potentially
Work Order Management	3.1	4.3	1.3	No
Mapping/GIS	3.8	4.0	0.3	No
Work Planning	1.6	3.9	2.3	Yes
Work Scheduling	2.1	4.1	2.0	Yes
Capacity/Demand Management	3.3	4.7	1.3	No
Work Execution	1.5	3.8	2.3	Yes
Special Programs	2.8	4.0	1.2	No
Review of Process	2.5	4.0	1.5	Potentially
Reliability Centered Maintenance	1.0	3.5	2.5	Yes
Performance Management	1.6	4.3	2.6	Yes
Organization	3.0	4.5	1.5	Potentially
Information Reporting	2.5	4.2	1.7	Potentially
Financial Accountability	2.3	4.1	1.8	Potentially
Direction and Leadership	3.2	3.8	0.7	No
Attitudes and Environment	2.9	4.1	1.2	No
Continuous Improvement	1.8	3.9	2.1	Yes
Staff Development	3.0	4.0	1.0	No

Key Recommendations for Improvement:

- **Implement a performance management system** that is data driven, complete with KPIs based on level of service (LOS), performance metrics and LOS targets.
- **Use the CMMS as an asset management tool**.
  - Track only work performed by WSSC personnel in CMMS.
  - Actual labor times and material costs should be also be tracked against each work order.
  - Include replacement costs and estimated design life for each asset in CMMS.
  - Conduct regular, comprehensive inventories and condition assessments for all assets.
  - Conduct regular trend analyses on maintenance histories for critical assets.
- **Provide one centralized planning group that evaluates ALL incoming work**.
- Develop and **implement a more-technical approach to large-meter testing/replacement** that focuses specifically on 20% of meters that correspond to the top 80% of revenue generation.
- Develop a **more-robust water balance accounting**, performed at least quarterly, in conjunction with a proactive leak detection program.

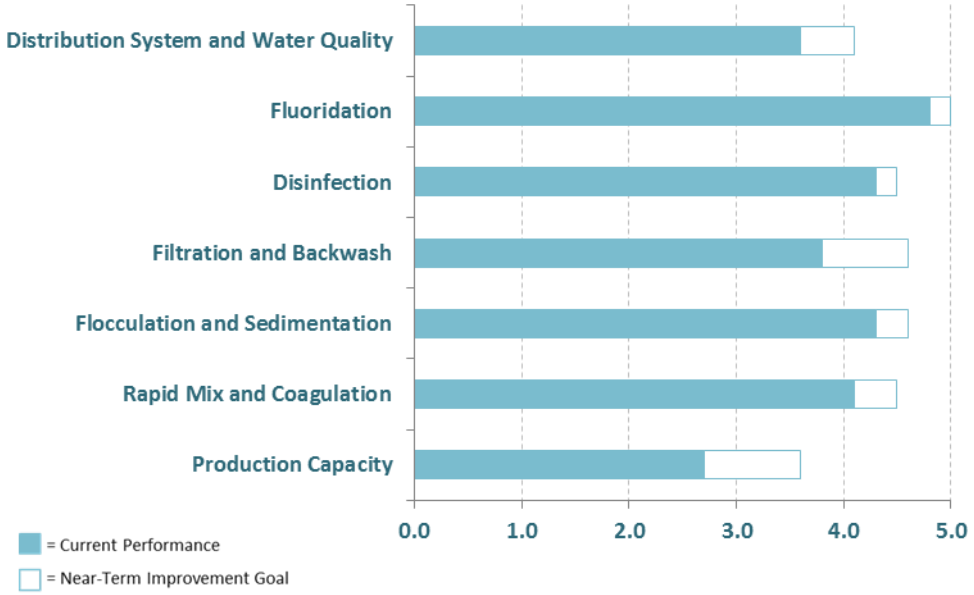
Overall performance and gap analysis in ASSET MANAGEMENT/CIP

Category	WSSC Current Performance Score	Near-Term Improvement Goal	Arithmetic Difference	Significant?
Asset Knowledge	2.5	4.0	1.5	Potentially
Risk Management - Criticality	3.0	4.0	1.0	No
Risk Management - Asset Condition	2.5	4.0	1.5	Potentially
Plant Maintenance - Organization	2.0	3.0	1.0	No
Plant Maintenance - Quality	1.0	3.5	2.5	Yes
Document Management	2.0	3.0	1.0	No
Inventory Management	1.0	3.0	2.0	Yes
Financial Accountability	1.5	3.0	1.5	Potentially
CIP Production Process	2.5	4.0	1.5	Potentially
Capital Delivery	2.0	4.5	2.5	Yes

Key Recommendations for Improvement:

- **Implement a performance management system** that is data driven, complete with KPIs as well as performance targets with respect to project delivery.
- Further **develop the existing asset management plan to cover all assets and use a needs-based identification**.
  - Continually refine and fully **implement project prioritization** with the goal of meeting CIP budget expenditure targets.
  - Further develop, document and implement a new production processes that **focuses on and represents level of service (LOS)** in a well-defined manner.
- Incorporate a robust process of verifying, validating and updating:
  - **Key asset knowledge** and improving the accuracy of replacement values
  - **Business risk exposure** and improving its use in driving operations' strategies
  - **Asset condition**, improving its use in driving operations' strategies and development of a condition-based monitoring strategy.

Overall performance and gap analysis in WATER TREATMENT

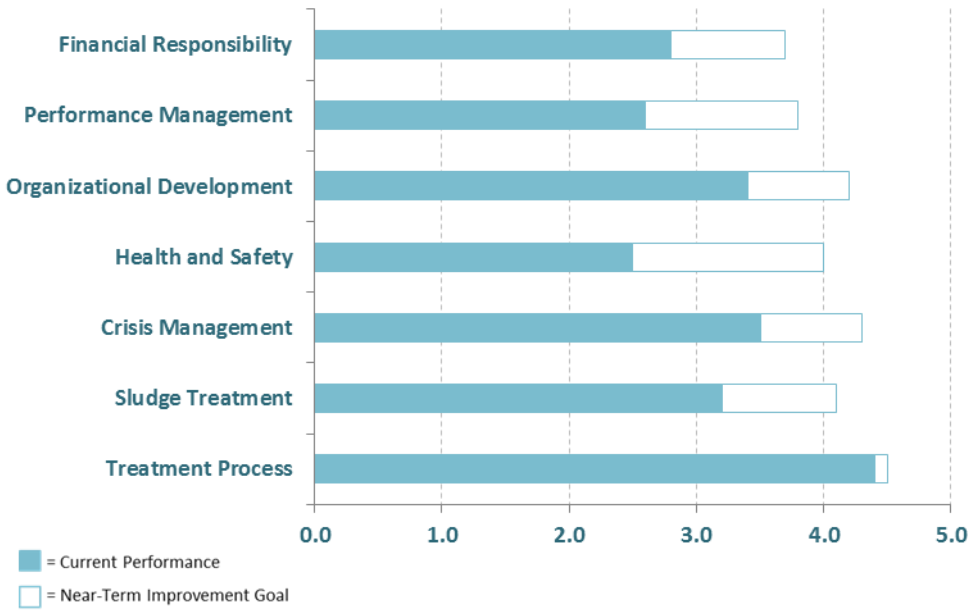


Category	WSSC Current Performance Score	Near-Term Improvement Goal	Arithmetic Difference	Significant?
Production Capacity	2.7	3.6	0.9	No
Rapid Mix and Coagulation	4.1	4.5	0.4	No
Flocculation and Sedimentation	4.3	4.6	0.3	No
Filtration and Filter Backwash	3.8	4.6	0.8	No
Disinfection	4.3	4.5	0.2	No
Fluoridation	4.8	5.0	0.2	No
Distribution System and Water Quality	3.6	4.1	0.5	No

Key Recommendations for Improvement:

- **Develop process control management plans** that would proactively manage the treatment process, further developing key performance indicators.
- **Reevaluate the need to implement enhanced coagulation** at the Potomac plant.
- **Conduct routine annual filter assessments** including, but not limited to, filter coring, bed expansion, backwash duration evaluations, and media examinations on representative filters to maximize filter performance.
- **Conduct quarterly reviews of CT compliance** to identify how much actual clearwell storage is necessary for CT and how much storage capacity could be taken offline to reduce DBP formation potential and onsite chlorine residual decay.
- **Conduct chlorine decay evaluations** and compare to systems residuals to determine the impacts of pipeline storage and storage tanks on chlorine residual losses.

Overall performance and gap analysis in WASTEWATER TREATMENT



Category	WSSC Current Performance Score	Near-Term Improvement Goal	Arithmetic Difference	Significant?
Treatment Process	4.4	4.5	0.1	No
Sludge Treatment	3.2	4.1	0.9	No
Crisis Management	3.5	4.3	0.8	No
Health and Safety	2.5	4.0	1.5	Potentially
Organizational Development	3.4	4.2	0.8	No
Performance Management	2.6	3.8	1.2	No
Financial Responsibility	2.8	3.7	0.9	No

Key Recommendations for Improvement:

- **Develop process control management plans** that would proactively manage the treatment process, further developing key performance indicators.
- **Develop onsite management and accountability of energy usage** for large pieces of equipment.
- **Develop a mass balance of the entire plant process**, and use routinely as an operational tool.
- Develop yearly budgets with a bottom up approach, **pursuing operational efficiency gains in specific process areas**.
  - Track actual expenditures against targets.
  - Hold plant managers accountable for plant energy expenditures.
  - Shift mindset from a culture of "compliance at all costs" to "compliance at lowest costs".
- Develop and implement protocols to **hold onsite staff accountable for safety performance**, including tracking and reporting leading and lagging safety metrics.
  - Develop and implement **a formal safety audit program** to ensure policy and procedures are being followed.

Thank you for your time – Please let us answer any questions you may have