

**Levels of Service Strategic Sharing Group: Internal and External Drivers for  
Establishing Levels of Service**

Meeting Date                    December 4, 2020 from 1:00 p.m. – 2:30 p.m. EST  
Facilitator                      Jenessa Doherty, Canadian Water Network

There is no one-size-fits all approach to developing levels of service. Effective programs are locally specific and respond to customer, corporate and asset concerns at the municipal level. To move away from setting arbitrary levels of service, water, wastewater and stormwater utilities will need to first explore **why** they are moving forward with setting levels of service, **what** is driving this decision, and **how** levels of service are defined for the customer, the company, and the asset.

The second meeting of the Strategic Sharing Group – **Advancing Levels of Service in the Context of Uncertainty** – was held on December 4, 2020. The objective of this meeting was to gain an understanding of why participating utilities/municipalities consider it important to explicitly set levels of service, what unique drivers are influencing this decision and lessons learned in the process (see [meeting agenda](#)).

The meeting kicked-off with a guest presentation by Michael Lewis, Program Manager of Capital Planning and Strategic Asset Management in the Planning, Infrastructure and Economic Development Department at the City of Ottawa. Michael provided an overview of the City's journey with developing and defining corporate, customer and asset levels of service, the key drivers behind this action, and lessons learned from the preliminary phases.

Following the presentation, Strategic Sharing Group members had the opportunity to ask questions of Michael and fellow participants concerning their respective challenges, approaches, lessons learned and best practices.

The meeting wrapped up with a facilitated group discussion about utility drivers for setting levels of service.

Below is a list of the specific themes that emerged from the meeting.

## Summary of Municipal/Utility Priorities & Challenges

### *Setting Appropriate Levels of Service Targets*

- Utilities typically take a condition-based approach to levels of service. **Re-focusing on service-based approaches and prioritizing outputs versus outcomes has been a challenge for some utilities/municipalities.** Since this concept is new, it is not always well-received by all internal and external stakeholders.
- **Quantifying current levels of service is an ongoing challenge experienced by most utilities/municipalities but is necessary in order to understand the gaps that exist.** Utilities highlighted that it is only once you have the necessary data that you can begin to define current levels of service and take the necessary steps to set targets aimed at closing the gap. Most municipalities expressed a need for strategies and measures to effectively accomplish this.
- One utility highlighted **the importance of recognizing that levels of service discussions can sometimes lead to decisions that are in direct conflict with one another.** For example, oversizing wastewater pipes to account for high volumes of inflow/infiltration and peak wastewater flows can lead to an increased accumulation of solids and increased H<sub>2</sub>S gas generation during lower dry weather flows. These types of conflicts need to be addressed as both issues are significant risks to the operation of the wastewater infrastructure; however, there remains uncertainty as to the most effective way to reconcile conflicts.

### *Customer Consultation, Stakeholder Engagement, and Messaging*

- Most utilities/municipalities highlighted **challenges in creating effective messaging for stakeholders** such as council, customers and senior decision-makers. The importance of telling a complete story was identified as a key part of creating awareness and generating buy-in and support. One municipality highlighted the [Levels of Service & Community Engagement Guide](#) developed in partnership between IPWEA and ACELG, which expressed that undergoing a full-cost exercise could help build a more complete picture of how money is being spent and for what purpose. This will help determine the reactive versus proactive asset maintenance costs. From here **scenario-based planning can be undertaken to help utilities choose what action to take and will help make the case for why that particular action was chosen.**
- **A common challenge for most municipalities/utilities was effective customer consultation and engagement.** Although municipalities agreed that directly engaging with customers is critical to better understanding their needs and setting appropriate levels of service, choosing the most effective manner to do this has been a challenge.

### *Levels of Service as a Driver for Investment Decisions*

- Some utilities/municipalities identified the importance of levels of service informing capital, maintenance and risk decision-making. Integrating and involving the finance department in these decisions is a continual challenge. However, **target levels of service should be set in alignment with long-term financial planning to identify if an investment is successfully improving a level of service measure.** If not, utilities/municipalities can start to question why this investment is being made.
- One municipality highlighted that in the future, **Asset Management Plans will be the guiding document informing and driving decisions for municipal master plans.**

### *Drivers for Explicitly Setting Levels of Service*

Whether the customer is residential, municipal or commercial, most municipalities/utilities identified diverse reasons for the importance of explicitly setting levels of service.

- Explicitly defining levels of services **helps set baseline triggers for tactical and strategic decision-making.**
- Customer bases are diverse, and needs vary. Explicitly defining levels of service **helps to communicate and explain what is happening within the context of the system and why.** For residential customers, this means going beyond the technical jargon often used for regulators, city councils and technical consulting communities and instead translating levels of service targets into language and actions that resonates with the public.
- Explicitly setting levels of service **helps clearly articulate the value of the services provided.** The concept of value is important to gain support for necessary rate increases, for example.
- With increased capital spending now and into the future, explicitly defining levels of service **helps create greater understanding among boards and councils. This is crucial in justifying spending and getting approval for projects.** It also helps the municipality find methods of communicating levels of service in less technical, more relatable ways.

## Detailed Summary of Introduction, Presentation & Participant Insights

### Part 1: Updates from New Members ([detailed table](#))

#### Ontario Clean Water Agency (OCWA)

- OCWA serves over 130 municipalities ranging from large to small.
- OCWA does not use the term “level of service” as they have found it does not resonate with many clients. Instead, they use the term “Asset Performance Expectations”.
- Levels of service is defined by clients and their specific challenges and situations.
- A cost-benefit approach is used to explain and prioritize levels of service, but prioritization is often based on achieving base expectations for smaller municipalities.
- Municipalities within OCWA’s portfolio are often challenged with finding the funds to do what they need to do, but OCWA is hoping to hear the approaches that others are taking and to learn from their experiences.

#### City of Vancouver – Sewers & Drainage

- The Sewer and Drainage Department has not yet defined levels of service; however, they plan to define them within a changing climate.
- They are currently working to establish acceptable levels of risk and map these risks to inform future decisions.
- The Sewage and Drainage department is challenged with old infrastructure that is now being challenged by changing climatic conditions and increasing service level demands. Things like increased rainfall intensity, population growth, sea level rise, and an older system presents challenges to service delivery.

#### Metro Vancouver

- Metro Vancouver’s Liquid Waste Services (LWS) and Water Services (WS) internally developed Customer Levels of Service (CLOS) that align with the Metro Vancouver Board Strategic Plan and the utility management plans.
- LWS and WS have 4 CLOS objectives defined in the departmental Asset Management policies to group various CLOS metrics (13 metrics for LWS, 17 metrics for WS).
- LWS has developed a departmental balanced scorecard that contains the CLOS metrics. This is an online dashboard that depicts the historical trend and future forecast of different metrics
- Metro Vancouver also has 4 infrastructure capital program drivers (maintenance, upgrade, resilience, growth) that categorize the major capital projects to link them to service delivery.

## Part 2: Guest Presentation: Understanding the Why and the What of Levels of Service Development

*Michael Lewis, Program Manager, Capital Planning and Strategic Asset Management, City of Ottawa*

### *The Why – History*

- The main philosophy behind the City of Ottawa's level of service development is the understanding that **assets exist to deliver service to customers and stakeholders at the lowest life-cycle cost.**
- There has been a significant evolution in the City's comprehensive asset management over the last 20 years. The main driver of this evolution has been the desire to **move from an asset focus to a service focus.**
- Although Ottawa is currently focusing on a service-based Asset Management Plan, the goal is to **continue to evolve and move toward integrated asset planning** in the future.
- Another key driver came in 2019, with the implementation of the Ontario regulation O Reg 588/17, which includes a provision to include **current** levels of service within the development of an asset management plan (by 2021) and eventually **proposed/target** levels of service (by 2024).
- Although there are regulatory requirements in place to develop levels of service, the City of Ottawa's **ultimate goal is to move from a condition-based approach to a service-based approach** to re-focus effort and resources to enhance service.
- In order to do this, the City is in the processes of **defining what "good service" means.** They believe this definition will come with developing easily understood and repeatable measures to assess performance and trends over time. Furthermore, documenting this will help to develop strategies that will work to close the gap between current and target levels of service.

### *The What – Guiding Force*

- The City of Ottawa's comprehensive investment strategy planning **framework strives to ensure investment decisions are driven by levels of service.**
- By taking a risk-based approach to identifying asset, legislative, growth, and efficiency improvements, **the City is ensuring investments are always linked to maintaining or improving specific levels of service.**
- The City currently has three types of service levels: corporate, customer, and asset/technical and has explicitly defined each one in their Strategic Asset Management Plan.

- Ottawa has gone through a process of **developing customer levels of service statements to help clearly identify what the customer expects the city to do**. When translated in this way, levels of service can be more fully understood by customers and stakeholders thereby shifting the focus from the organization's outcomes to their actual outputs.
- From here, performance measures can be identified, monitored and tracked. This helps the City determine how to effectively communicate with the public to show progress over time.
- Although setting and tracking performance measures is critical in determining how well the city is doing, **consideration must be given to the cost of measurement in comparison to the value of the information gained and how it will subsequently be used**.

### *Lessons Learned*

- Although at the initial stages of the levels of service development process, the City of Ottawa is planning to pursue the following next steps:
  - Analyze and cost options: consider and analyze other options for achieving the same service delivery e.g., decreased scope
  - Customer input: consider equity and inclusion when seeking input and feedback e.g., focus groups, phone, mail, etc.
  - Set targets: apply a cost for increasing, maintaining and decreasing the level of service by taking the “if we all had a dollar, what would we spend it on” approach.
  - Communication: consistently and effectively communicate to the public and other stakeholders e.g., AMPs, strategic AMP, comprehensive updates to council, etc.
- Levels of service should help communicate effectiveness of service delivery including all the behind-the-scenes decisions.
- **All long-range financial planning should be done in tandem with determining target levels of service.**
- Levels of service should be the guiding force to project prioritization and capital investment.
- It may be best to limit each service level target to 4-12 performance measures in order to be consistent and ensure repeatable measurement over time.

In the discussion that followed our guest expert's presentation, a number of key themes emerged with respect to ongoing challenges, considerations, and approaches for setting appropriate levels of service and communicating these decisions to stakeholders.

- Many municipalities/utilities echoed the **challenges involved with setting appropriate levels of service targets** when much of the maintenance required to maintain levels of service is often reactive. Although some municipalities use trend analysis of historical performance, these measures make the use of existing performance as a benchmark

problematic. **Quantifying the cost to maintain, increase or decrease a specific service level could be a good place to start with setting baselines.**

- Several participating municipalities identified that **customer engagement remains a challenge**. It was agreed that adopting and implementing effective approaches to directly engage with customers is critical to better understanding what their needs are and setting appropriate levels of service. The City of Ottawa conducted internal workshops to quantify and determine performance and expectation measures and found that the results closely aligned with the expectations identified by the customer. **Using internal analysis strategies can be an effective exercise in predicting customer needs when direct approaches are not available.**
- Most participating municipalities agreed that **crafting the right message and effectively telling the story of levels of service has been difficult, particularly for services that are less visible such as sanitary waste collection and treatment**. Additional challenges with respect to climate change, population growth, and limited budgets often mean that the public may not be able to expect the same service levels they historically received from existing assets. Having a **consistent message for stakeholders** is one place to start. The City of Ottawa has made their Asset Management Plan and Improvement Plans available to the public. **Recognizing short-term risks and developing a mitigation strategy that includes estimated costs that can be embedded in budgets is one step to building the story**. Long-term actions can then be embedded directly into the improvement plan where items can be selected for implementation at the appropriate time in the future. In one example, the City of Ottawa has looked at asset replacement value and assessed what is needed to continually fund that. A comparison of total value versus total investment helped paint the picture that certain assets are much more heavily funded than others.

### Part 3: Group Discussion – Utility Inspiration and Drivers for Setting Levels of Service

In response to the question **“Why is explicitly setting levels of service important to your utility (think about your utility’s core mission/mandate, corporate culture, customer base, etc.)?”**, the following themes/concepts were discussed.

| Municipality/<br>Utility | Response   |
|--------------------------|--|
| York Region              | <b>Alignment:</b> The explicit setting of levels of service helps to align frontline levels of service with tactical and strategic decision-making. Detailing levels of service helps the organization as a whole understand where differences exist, what the costs are, and where risk threats are. For specific assets, explicitly identifying how service is delivered informs performance |

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|                          | monitoring and sets baseline triggers for corrective action when assets are not performing as desired or designed.  |
| <b>OCWA</b>              | <b>Communication:</b> Setting levels of service helps explain to clients and customers what they are seeing from their facilities (i.e. if you continue to spend this much on your infrastructure, you will see 50 water main breaks instead of the 10 you're seeing now) – gives municipalities/utilities something to relate to and understand within their context; which then makes it easier to explain to their local community members.  |
| <b>Halifax Water</b>     | <b>Identifying Value:</b> Explicitly setting levels of service helps clearly articulate the value the services provide. The concept of value is important to gain support for necessary rate increases.   |
| <b>Metro Vancouver</b>   | <b>Justification of Spending:</b> Metro Vancouver is currently seeing a dramatic increase in capital spending and anticipates this will continue in the upcoming decade. It is important to have good reasoning when communicating with the board about spending and how this spending is serving customers. Identifying levels of service explicitly is crucial to getting approval for future spending and projects.  |
| <b>City of Vancouver</b> | <b>Creating Relatable Measures:</b> The City is trying to translate levels of service discussions into commonly understood language to more effectively communicate with council and the public (e.g., measures to identify if service is reliable as opposed to only communicating the number of water main breaks). Certain parts of the City are willing to accept lower levels of service, so the City is looking to dive into understanding this better. Overall, the City of Vancouver is trying to develop levels of service that are more understandable and public-facing. |



Detailed Table of New Member Introductions & Responses

| Ontario Clean Water Agency: Wastewater<br>(Service Area: 3,500,000)<br><i>Lisa Babel, Director, Project Planning and Delivery</i> |  |
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| <b>How does your municipality/utility define levels of service (LoS)?</b>   | <ul style="list-style-type: none"> <li>• OCWA is unique in that we serve a variety of municipalities ranging from the very large (Peel) to the very small (100's of residents)</li> <li>• Firstly, we find that the term “Level of Service” does not make sense to many of our clients. We avoid using it and instead refer to “Asset Performance Expectations”. This seems to resonate better and aligns with ISO 55000.</li> <li>• LoS is very much defined by our clients and their specific challenges and situations.</li> <li>• LoS are very hierarchical with base expectations being at the bottom of the pyramid and expectations increasing as you move up the pyramid (I would draw a comparison to Maslow’s Hierarchy of Needs). Each level of the pyramid must be complete before you can move up. For example, achieving compliance with water quality expectations needs to be in place before you can begin to think about improving energy efficiency.</li> <li>• All municipalities set compliance with regulations as a core asset performance expectation.</li> <li>• Minimal customer complaints are also a key performance expectation. However, what customers complain about is very dependent on the “Town’s culture”. Some small, rural towns are satisfied to accept seasonal coloured water (as long as it meets all quality regulations), if it means that their water bills/taxes stay low.</li> </ul> |
| <b>What strategy is currently used to identify and prioritize levels of service?</b>  | <ul style="list-style-type: none"> <li>• Our clients define this for us based on the Town’s priorities and culture. Some municipalities’ goals are to grow and develop, while others are content to maintain the status quo.</li> <li>• As defined above, prioritization is based on achieving the base expectations before you can move up the pyramid.</li> <li>• A cost-benefit approach is used to explain and prioritize. Many municipalities struggle with limited funds and justifying large capital expenditures to improve service levels.</li> </ul>   |
| <b>In what area is your utility leading?</b>  | <ul style="list-style-type: none"> <li>• Breaking down some of the complex ideas in asset management to a level that can be easily and effectively implemented in a small town with minimal costs.</li> </ul>  |

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|  | <ul style="list-style-type: none"> <li>• Bringing best practices in asset management to smaller communities who cannot afford dedicated personnel in this area. An example is Maximo as a Work Management System. We bring the tool and the work processes to utilize it.</li> </ul>  |
| <p><b>What is your utility's biggest challenge and what do you hope to learn from this group?</b></p>  | <ul style="list-style-type: none"> <li>• We have 130 clients with 130 challenges and perspectives.</li> <li>• Most of our clients are still trying to achieve the base level of asset performance expectations.</li> <li>• Finding the funds to do what they know they need to do is always the challenge. COVID has complicated this as funds are now needed elsewhere or are no longer available and costs for capital improvements have increased.</li> <li>• Hope to hear the approaches that others are taking and to learn from their experiences.</li> </ul> |
| <p><b>City of Vancouver: Water   Wastewater   Stormwater</b><br/>         (Service Area: 631, 486)<br/> <i>Michelle Revesz, Integrated Sewer and Drainage Planning Manager</i></p> |   |
| <p><b>How does your municipality/utility define levels of service (LoS)?</b></p>   | <ul style="list-style-type: none"> <li>• Have not yet defined LoS, will be initiated as part of the Asset Management Plan development.</li> </ul>   |
| <p><b>What strategy is currently used to identify and prioritize levels of service?</b></p>  | <ul style="list-style-type: none"> <li>• Currently, focus is on defining levels of service within a changing climate.</li> <li>• Establishing acceptable levels of risk for piped systems, overland flow routes and floodplain drainage and creating maps to highlight this risk in an effort to inform future decisions.</li> </ul>  |
| <p><b>In what area is your utility leading?</b></p>  | <ul style="list-style-type: none"> <li>• Sewage and drainage department is maturing, which gives them the opportunity to leapfrog and learn from some of the initiatives already implemented by other departments.</li> </ul>   |
| <p><b>What is your utility's biggest challenge and what do you hope to learn from this group?</b></p>  | <ul style="list-style-type: none"> <li>• Historically, City of Vancouver had a number of old streams. As they city grew in population, these streams were turned into pipes to accommodate wastewater flows. This resulted in the creation of a combined system. The City did not have a wastewater treatment plant until the 1950s. This history has created a few challenges:             <ul style="list-style-type: none"> <li>○ Some of these pipes are very deep and therefore harder to service and are tidally influenced.</li> </ul> </li> </ul>           |

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|   | <ul style="list-style-type: none"> <li>○ Population has greatly increased (system was built for approximately 500,000 people).</li> <li>○ Pipes no longer meet the purpose of what they were designed for (50% capacity).</li> <li>● Hard to develop levels of service for a system as it is maturing and design criteria have shifted over time.</li> <li>● 30% increase in rainfall intensity from 1950 to today. This is anticipated to increase another 30% by 2100.</li> <li>● Sea level rise is a concern.</li> <li>● Financial implications of implementation of plans and implications of affordability is a concern.</li> </ul>  |
| <p><b>Metro Vancouver: Water   Wastewater</b><br/>         (Service Area: 1,599,190)</p> <p><i>Karen Leung, Senior Project Engineer – Project Management Office</i><br/> <i>Mike Searle, Program Manager, Management Systems</i><br/> <i>Chris Woo, Senior Project Engineer, Management Systems</i></p> |   |
| <p><b>How does your municipality/utility define levels of service (LoS)?</b></p>  | <ul style="list-style-type: none"> <li>● Metro Vancouver’s Liquid Waste Services (LWS) and Water Services (WS) internally developed Customer Levels of Service (CLOS) that align with the Metro Vancouver Board Strategic Plan and the utility management plans.</li> <li>● LWS and WS have 4 CLOS objectives defined in the departmental Asset Management policies to group various CLOS metrics (13 metrics for LWS, 17 metrics for WS).</li> <li>● These metrics are based on the utilities’ understanding of the service expected and received by our customers (including municipal members and regulators).</li> <li>● Metro Vancouver also has 4 infrastructure capital program drivers (maintenance, upgrade, resilience, growth) that categorize the major capital projects to link them to service delivery.</li> </ul> |
| <p><b>What strategy is currently used to identify and prioritize levels of service?</b></p>   | <ul style="list-style-type: none"> <li>● LWS has developed a departmental balanced scorecard that contains the CLOS metrics. This is an online dashboard that depicts the historical trend and future forecast of different metrics including but are not limited to number of sanitary sewer overflow events, Biosolids beneficially used %, duration of events not in compliance with Operational Certificates (WSER).</li> <li>● Senior management meets regularly to discuss the performance against these metrics and identify new metrics.</li> </ul>   |

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|   | <ul style="list-style-type: none"> <li>• LWS is closely monitoring these metrics and forecasting future utility performance by tying capital projects to certain metrics. For example, completion of a SSO storage tank would lower the number of SSOs in the area. We are planning to implement a similar tool for WS and other departments.</li> <li>•</li> </ul>   |
| <p><b>In what area is your utility leading?</b></p>   | <ul style="list-style-type: none"> <li>• Metro Vancouver provides utility and local government services to over 2.7M residents in 23 member jurisdictions and our staff are working hard to continuously improve the reliability of our services.</li> <li>• By holding monthly Board and Committee discussions with our member jurisdictions, Metro Vancouver prepares and optimizes the annual budget in a transparent manner.</li> </ul>   |
| <p><b>What is your utility's biggest challenge and what do you hope to learn from this group?</b></p> | <ul style="list-style-type: none"> <li>• The projected capital spending has been steadily increasing and is expected to remain at historic high levels in the next decade or two.</li> <li>• With competing drivers of regional growth, mandated treatment plant upgrades, and improved resiliency needs, it is important to justify the funding needs using risks to LOS, but we have not established a robust framework to enable this communication.</li> <li>• We hope to learn how other organizations are using LOS as a communication tool and a driver for infrastructure investments.</li> </ul> |

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Attendees

| <b>Name</b>                | <b>Title</b>   | <b>Municipality/Utility</b> |
|----------------------------|--|-----------------------------|
| <b>Shannon Abbott</b>      | Water Utility Manager  | City of Calgary             |
| <b>Meaghan McClurg</b>     | Program Lead (Service Levels)  | City of Calgary             |
| <b>Bu Lam</b>              | Director, Sanitary & Stormwater Utilities                            | City of Kitchener           |
| <b>Michael Lewis</b>       | Program Manager, Capital Planning and Strategic Asset Management     | City of Ottawa              |
| <b>Michelle Warywoda</b>   | Director – Environment, Infrastructure and Operations                | City of Thunder Bay         |
| <b>Lindsay Menard</b>      | Process Engineer   | City of Thunder Bay         |
| <b>Andrea Becker</b>       | Manager, Drinking Water  | City of Vancouver           |
| <b>Michelle Revesz</b>     | Integrated Sewer and Drainage Planning Manager                       | City of Vancouver           |
| <b>Brandon Hildebrandt</b> | Asset Manager  | City of Vancouver           |
| <b>Susan Ancel</b>         | Director One Water Planning  | EPCOR                       |
| <b>Heather Zarski</b>      | Planning Specialist  | EPCOR                       |
| <b>Jamie Hannam</b>        | Director, Engineering & Information Services                         | Halifax Water               |
| <b>Cathie O'Toole</b>      | General Manager  | Halifax Water               |
| <b>Chris Woo</b>           | Senior Project Engineer, Project Management Office, Project Delivery | Metro Vancouver             |
| <b>Mike Searle</b>         | Program Manager, Project Management Office, Project Delivery         | Metro Vancouver             |
| <b>Karen Leung</b>         | Senior Project Engineer, Project Management Office, Project Delivery | Metro Vancouver             |
| <b>Lisa Babel</b>          | Director, Project Planning and Delivery                              | OCWA                        |
| <b>Michael Latimer</b>     | Research and Initiatives Advisor, Corporate Asset Management         | York Region                 |
| <b>Carissa Cautillo</b>    | Project Manager, Asset Management Strategy                           | York Region                 |