

PART 2 – WEAVING THE PIECES



Procedure for Measuring the Performance of Service Levels

1. This document is a follow up to the online resource provided for “List of Service Levels for each Major Asset Category.” Make sure you have completed that section before moving on to the procedure for measuring the performance of service levels below.
2. On page 6 of the guide, read the step named “Identify Performance Measures”.

4

Identify Performance Measures

Four example service levels are provided for each indicator. Does one of them suit your community? Consider:

- ▶ What is the legal minimum?
- ▶ *What commitments have been made in public-facing plans (e.g. community or master plans)?*
- ▶ What is important to the public?
- ▶ *Do not promise more than you can deliver!*
- ▶ Think about the outcome, not the inputs
- ▶ Each LoS should cover only one aspect of the service
- ▶ Avoid technical jargon

Long term cost implications: eg if a lower target is selected, what does that mean for costs down the line (e.g. more frequent, higher risk)

(Note: the service levels might vary depending on the specific asset – e.g. some buildings, aesthetics might matter more than others; hospital or emergency response centre vs. storage building)

3. Open the tab named “3) Describing Levels of Service”. Continue to the column named “Performance Measures”. Determine how you would determine if a Level of Service Commitment was being made or not. How would you determine if the community was meeting the commitment? Refer to the definitions provided in the tab “1) Introduction”. O&M data, complaints, expert assessment, service contract, OH&S records, and program data are all examples of what would be placed in the “Performance Measures” column.

Definitions:	
Asset Type	Major group of assets (e.g. watermains, pump stations, roads, sidewalks, street lighting).
Current Performance	The level of service that is currently provided (which may be more or less than the level of service commitment)
Indicator	A specific property of service that can be objectively evaluated
Level of Service Commitment	The level of service the municipality aims to deliver to its customers. This is usually subjective or descriptive for community levels of service, and may be quantitative for asset levels of service.
Linear Asset	An asset inventoried by length, typically as part of an interconnected system or network such as watermains or roads.
Performance Measure	The means used by the municipality to assess a level of service. The following measures are indicated in Tab 3: - O&M data: operating logbooks, sample test results, SCADA data, work order or CMMS data - complaints: records of numbers and types of comments received from users by telephone, mail, front counter, website, email or social media - expert assessment: Evaluation based on analysis by a competent staff member or consultant, using specific and repeatable criteria and methodology - service contract: enforceable terms of a contract with a third party that provides a service on behalf of the municipality (e.g. biweekly residential waste collection) - OH&S records: workplace inspection, accident, lost time and near miss records - program data: utilization rates of facilities or equipment, spare capacity, range of services supported by the assets
Service Area	A major division of municipal service delivery (e.g. waterworks, sanitary sewer, transportation, recreation)
Service Characteristic	General property of service delivered by an asset or group of assets (e.g. safety, capacity, regulatory compliance).
Vertical Asset	An asset inventoried by item (not by length), such as a treatment plant or traffic light.

- For example, in the regulatory service characteristic, the indicator is “Drinking water quality complies with statutory requirements”. O&M data and expert assessment can be used. Sample test results can be compared to the standards of the Canadian drinking by a qualified staff member or consultant.
- Continue this process for every general property/service characteristic
- Once this is complete for drinking water, continue this process for every service area. Review these columns with your asset management advisory committee or team to assure your template is accurate and up to date.

3) Describing Levels of Service									
What is the current level of service and how much does it cost to provide this service?									
This worksheet documents the current level at which each service is being provided, from a community perspective, and an estimated cost of providing this service. The Drinking Water Service Category has been completed as an example (in blue text). For each major service category, enter the total estimated cost of providing the service (e.g. from budget or financial statements).						3 Describe Current Levels of Service	4 Identify Performance Measures		
Service Characteristic	Indicator	Example Levels of Service				#	Level of Service Commitment	Performance Measures	Source Document
		Low 1	2	3	High 4				
Drinking Water									
							Estimated Total Cost:	\$800,000	
Regulatory	Drinking water quality complies with statutory requirements	Minimum service level.					Drinking water quality complies with statutory	O&M data, expert assessment	
Capacity / Availability	Available water supply is sufficient for customers' needs	Capacity is available for basic household needs only; no garden irrigation	Capacity is available for all household needs; no garden irrigation	Capacity is available for all household needs and restricted garden irrigation.	Capacity is available for all indoor and garden uses, with outdoor restrictions less than once every ten years	1	Capacity is available for basic household needs only; no garden irrigation	expert assessment	
	Water distribution infrastructure is accessible for servicing lots throughout the service area	No water distribution service is provided; users are responsible for hauling their own water	Trucked water delivery is available to all users at least weekly.	Trucked water delivery is available to all users at least twice per week. Piped water distribution is available to some users.	Piped water distribution is available to all users in the community.	4	Piped water distribution is available to all users in the community.	expert assessment	
Safety	Water supply is sufficient for firefighting purposes	The community does not supply water for firefighting purposes.	None of the community is considered to be hydrant protected for insurance grading purposes. Bulk water is supplied in sufficient quantity for filling pumper trucks and tenders.	A portion of the community is considered to be hydrant protected for insurance grading purposes.	All of the community is considered to be hydrant protected for insurance grading purposes and hydrant flow testing and maintenance are fully up to date.	1	The community does not supply water for firefighting purposes.	expert assessment	
Quality	Water service pressure is adequate at customer connections	Frequent customer complaints about water pressure.	Frequent customer complaints about water pressure.	Few customer complaints about water pressure in isolated areas.	Almost no customer complaints about water pressure.	3	Few customer complaints about water pressure in isolated areas.	complaints	
	Water quality is aesthetically pleasing	Fails to meet customer expectations year round on more than two of: taste, colour, odour, staining.	Fails to meet customer expectations year round on one of: taste, colour, odour, staining.	Fails to meet customer expectations seasonally on one: taste, colour, odour, staining.	Meets customer expectations year round on all of: taste, colour, odour, staining.	4	Meets customer expectations year round on all of: taste, colour, odour, staining.	complaints	

7. Open the tab named “4) Evaluation of Services”. Remember, text in blue has been added in the template as an example and can be altered or removed. The steps for “5. Identify Performance Gaps” are located on page 7.

Evaluation of Services


5

Identify Performance Gaps

1. Is current performance more or less than the service level target?
2. Can current performance be sustained over time?
3. What can be done to address gaps?
 - ▶ What will it cost?
 - ▶ How long will it take?
 - ▶ Which alternative best meets users' needs?

It can be a problem to perform below OR above a service level goal. If reducing service is acceptable and practicable, it may free up resources (time, money or equipment) that can be reallocated to address a deficiency in another area.

Addressing gaps often involves trade-offs between service levels, costs, and risks over the lifecycle of assets. Informing Council and the members of the community who are affected by those trade-offs is important, so that decisions can be made with full consideration of the implications.



Are there gaps between current performance and LOS goals?

- ▶ Too low, or too high?

How can gaps be addressed?

- ▶ Reduce service level commitment
- ▶ Change O&M practice
- ▶ Manage demands
- ▶ Acquire or improve assets
- ▶ Consult Council and the public

Are there foreseeable future gaps between current performance and LOS commitments? Consider:

- ▶ Changing climate: drought, flood, wildfire, sea level rise, extreme storms
- ▶ Community growth and demographic change
- ▶ Asset deterioration and unfunded renewal needs

8. In the column “Current Performance”, include any comments regarding if the current performance is more or less reaching the level of service commitment previously determined. For example, for the regulatory general property/service characteristic, the level of service commitment would be “Drinking water complies with statutory requirements”. This section should be easy to evaluate as it will either be compliant or non-compliant.

9. In the column “Current Performance Gap?”, write a Yes or No. If the current performance does not meet the level of service commitment, write Yes. If the current performance does meet the level of service commitment, write No. For example, for the regulatory general property/service characteristic, the current performance was indicated as compliant, therefore there is no performance gap and “No” was written in this column.
10. In the column “Sustainability Gap”, write a Yes or No. If there is an anticipated gap in the future due to sustainability, write “Yes”. If there is no anticipated gap in the future due to sustainability write “No”. For example, for the regulatory general property/service characteristic, there was no indicated sustainability gap. This column can be left blank or “No” can be written in.
11. Repeat this process for every general property/service characteristic.
12. Repeat this process for every service area. Review these steps with your asset management advisory committee.
13. The steps for “6. Develop Strategies to Address Gaps” can be found on page 8 of the guide.

6 Develop Strategies to Address Gaps

Describe the Options. Consider:


- ▶ *Master Plans: Have options previously been developed and costed?*
- ▶ Are there ways to meet the community's need without new infrastructure?
- ▶ Is doing nothing acceptable?
- ▶ What level of public or stakeholder communication is needed?

What are the best solutions?

- ▶ Which options are feasible?
- ▶ Which options are affordable?
- ▶ What option has the lowest lifecycle cost?
- ▶ What are the implications for risk over the asset life cycle?

Document lifecycle cost implications.

Make a recommendation.

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14. In the next section, if a “Yes” is indicated in the columns “Current Performance Gap?” or “Sustainability Gap”, continue to fill in the columns under “Option(s) to Address Gaps”. Under the column “Option(s) to Address Gaps, there are 3 sub columns named A-C. These columns are an area to record options to address any performance or sustainability gaps. For example, lets look at the capacity/availability section for drinking water. The comment under the column “Current Performance” has the text “2 unserviced lots” noted. There was a “Yes” noted under the “Current Performance Gap” column as a result of the 2 unserviced lots. Option A to address the gap is “Long service connection from end of main in Oak St (60m and 90m). Option B to address the gap is “Extend main to end of Oak St (75m)”. Option C to address the gap is “reduce service level”.
 15. Compare the lifecycle costs of each option. In the example, option 3 has the lowest lifecycle cost because the customers have acceptable water from wells on their lot.
 16. Once you have chosen which option you are going to proceed with, bold or highlight the cell that contains the chosen option, In the example, option C was bolded.
 17. In the next column, “Estimated Lifecycle Cost(s) to Address Gap (explain)”. Record the lowest lifecycle cost in the column, or whichever associated lifecycle cost you have chosen. In the example, it was recorded as “no cost, unconnected customers have acceptable wells.”
 18. In the final column, “Comments/Decisions”, record the relevant actions moving forward. In the example, it was documented as “reduce service level to “most”.” The previous level of service commitment was recorded as “piped water distribution is available to all users in the community.” This would be changed to “piped water distribution is available to most users in the community.”
 19. Repeat this for every general property/service characteristic that has a “Yes” recorded in the columns “Current Performance Gap?” or “Sustainability Gap.”
 20. Repeat this process for every service area. Review these columns with your asset management advisory committee.

9) Evaluation of Services

The Evaluation of Services worksheet assesses existing services according to required, desired or expected levels and identifies Target Service Levels should be selected from the corresponding highest Community LOS Benchmark on worksheet 4. The figure at the bottom of the worksheet illustrates this type of evaluation process.

5 Identify Performance Gaps

6 Develop Strategies to Address Gaps

Service Characteristic	Indicator	Level of Service Committed	Performance Measure	Current Performance	Current Performance Gap?	Resiliability Gap?	Option(s) to Address Gaps			Estimated Lifecycle Cost(s) to Address Gap (colours)	Comments / Decisions
							A	B	C		
Drinking Water Quality	Drinking water quality complies with statutory requirements	Drinking water quality complies with statutory requirements	O&M data, expert assessment	Compliant	No						
Capacity / Availability	Available water supply is sufficient for customers' needs	Capacity is available for basic household needs only; no garden irrigation	expert assessment	Compliant	No						
	Water distribution infrastructure is accessible for servicing lots throughout the service area	Piped water distribution is available to all users in the community	expert assessment	2 un serviced lots	Yes		Long service connections from end of main in Oak St. (50m and 30m)	Extend main to end of Oak St. (75m)	Reduce service level	No cost. Unconnected customers have acceptable wells.	Reduce service level to "most".
Safety	Water supply is sufficient for firefighting purposes	The community does not supply water for firefighting purposes.	expert assessment	Compliant	No						
	Water service pressure is adequate at customer connections	Few customer complaints about water pressure in isolated areas.	complaints	4 complaints in 2017 in high zone	No						
Quality	Water quality is aesthetically pleasing	Meets customer expectations year round on all of: taste, colour, odour, staining	complaints	15 colour complaints Mar 2017 after main flushing	Yes		Adjust flushing procedure	Improve public information on door hanger	Reduce service level	\$2,000 one-time cost to reprint door hangers with improved water quality.	Improve public information on door hanger notices for flushing
	Water quality notices are infrequent and short in duration	Boil water notices occur no more often than every 5 years, or treated water fails to meet a chemical or radiological guideline from time to time	O&M data	No boil notice within the past 5 years	No						
Reliability	Service outages are infrequent and short in duration	Some minor disruptions to service provision, but few major disruptions.	O&M data	Increasing service disruption frequency in past 5 years (main breaks)	No	Yes	Prioritized watermain replacement program	Reduce service level		\$10,000/year additional revenue required based on engineering assessment.	Accelerated watermain renewal is also needed to address distribution losses and avoid further reduction of the capacity of the system. Requires \$200k increase in annual water charges per account. Recommend to Council to phase in over 3 years.
Sustainability	Providing the service generates a low environmental impact	Some infrastructure meets current best practices for energy efficiency and GHG emissions, and chlorine releases to aquatic environments are	expert assessment	2 pump stations retrofitted with efficient pumps in 2016, disinfectant consistently used for main flushing near streams	No						

21. Open the tab named “5) Action Plan”. The explanation for “7. Prepare a Service Delivery Plan” are found on page 9 of the guide.

7

Prepare a Service Delivery Plan

1. Is current performance more or less than the service level target?
2. Can current performance be sustained over time?
3. What can be done to address gaps?
 - ▶ What will it cost?
 - ▶ How long will it take?
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- ▶ Changing climate: drought, flood, wildfire, sea level rise, extreme storms
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22. This tab delivers a summary of all the prior steps in one place. The only columns to fill in on this sheet are "Timeframe" and "Notes". These only need to be filled in on the items that have a "Yes" in the "Performance Gap?" column. For example, for the availability general property/service characteristic, "Immediate" was entered under the "Timeframe" column. The "Notes" column indicated "No implications for cost or impacts on customers."
23. Fill these two columns out for each general property/service characteristic that has a "Yes" in the "Performance Gap?" column.

24. There is a row named “Summary” at the top of each service area where there is space to write a summary of the Levels of Service. For example, for drinking water the summary is “Although most customer service levels for the Water Service are currently being met, there is evidence of a growing reliability gap as watermains reach the end of their service lives, and there are minor aesthetic water quality and accessibility gaps. The accessibility and aesthetic quality gaps may be addressed with current resources, however a revenue increase of \$30,000 per year (\$200 per account per year) is estimated to be needed to address the reliability gap. It is recommended that this increase be phased in over three years.”
25. Repeat this for each service area. This tab can act as a function to provide inputs to your asset management plan or help identify priorities. It gives you a template that allows the asset management advisory committee to analyze and weigh out options.
26. Open the tab named “6) Reporting Out”. The explanation is found on page 9 of the guide. This tab is a template that provides an example format for a Levels of Service Report. Feel free to modify it to suit your community’s needs.

Reporting Out

1. Use the report to share the outcomes of this process, particularly priorities, with staff and Council
2. Add an annual (recurring) meeting to your calendar for reviewing LOS
3. Clearly communicate level of service commitments to the public if this isn't already being done
4. Address priority actions identified