Asset Management Levels of Service
Target or Consequence?

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2018 Vancouver BC
Asset Management Levels of Service

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Director of Strategic Asset Management at NAMS CANADA
Overview

• There are very different perspectives on Levels of Service
• A view from an different “angle”
• The more expected approach
Perspectives on Level of Service

• Can mean very different things depending on your perspective
• What do you want?
• Detailed Performance measures?
• Asset View
• Financial View
Perspectives on Level of Service

What are we trying to achieve by considering Asset Management Levels of Service?

&

Doesn’t it come back to some fundamentals?
What Fundamentals?
Can we reliably answer these Questions!
Do we have enough funding to:

1. Operate
2. Renew
3. Maintain
4. Upgrade / New

our infrastructure to meet the organization’s needs .... And at what service standard is this based on?

And at what service standard is this based?
Does that lack of funding and resources represent a service risk to your community going into the future?

What if the answer is NO?
Who chooses the best value plan?

Do they have full knowledge of the consequences, with risk and service impacts being the main items?
Levels of Service are part of the balancing act ..... So for a change lets start talking about them from a financial view
From a financial perspective of ASSET MANAGEMENT
How can financial reporting tell the story about Levels of Service?

Understand and use accrual accounting for planning purposes and discussing Levels of Service.
And how can this assist us to measure service level sustainability?

Are things getting “better, worse or staying about the same?”
Income Statement shows financial performance for a period

Balance Sheet shows financial position at a point in time

Financial performance for a period will be reflected in change in Balance Sheet between start and end of period
Infrastructure Financial Values – In Current Cost

Cost or gross replacement cost

Current Replacement Cost (Depreciated replacement cost of new asset)

Accumulated Depreciation

Fair Value

Carrying amount

Depreciable Amount

Residual Value

Year of acquisition

Useful Life

Ref: AIFMM Sec 12.1.2, p 12|5.
Renewal Costs are Independent of Average Annual Asset Consumption (Depreciation)

Asset Renewal is generally not constant

Depreciation AAAC is reasonably constant

$\text{Renewal Costs}$

$\text{Years Past}$  $\text{10 yrs}$  $\text{Years Future}$

$\text{Time}$

$\text{Renewals < Depreciation (AAAC)}$

$\text{Renewals > Depreciation AAAC}$

$\text{Depreciation AAAC}$

$\text{AMP Renewal Needs}$

$\text{Asset Lifecycle}$
ILLUSTRATIVE INCOME STATEMENT: Do we generate sufficient income to sustain long term service levels?

<table>
<thead>
<tr>
<th></th>
<th>($’000)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Operating Income</strong></td>
<td></td>
</tr>
<tr>
<td>Taxes</td>
<td>X</td>
</tr>
<tr>
<td>Other Income</td>
<td>X</td>
</tr>
<tr>
<td><strong>Total Operating Income</strong></td>
<td>X</td>
</tr>
<tr>
<td><strong>Operating Expenses</strong></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>X</td>
</tr>
<tr>
<td>Depreciation</td>
<td>X</td>
</tr>
<tr>
<td><strong>Total Operating Expenses</strong></td>
<td>X</td>
</tr>
<tr>
<td><strong>Operating Result</strong></td>
<td>X</td>
</tr>
<tr>
<td>Other items (e.g. capital revenues) to get net surplus</td>
<td>X</td>
</tr>
<tr>
<td>Other items to get total comprehensive income</td>
<td>X</td>
</tr>
</tbody>
</table>

Ref: AIFMM, Table 2.6.1, p 2|8
LTFP FINANCIAL INDICATORS

6.3.2 Indicator 2 - Operating Surplus / (Deficit) Ratio

Graph: Consolidated Projected Operating Surplus / (Deficit) Ratio 2009-10 to 2018-19

- Operating Surplus Ratio
- Proposed Target - Minimum
- Proposed Target - Maximum
ILLUSTRATIVE BALANCE SHEET Are we maintaining equity?

<table>
<thead>
<tr>
<th></th>
<th>($'000)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Assets</strong></td>
<td></td>
</tr>
<tr>
<td>Cash, Inventories &amp; Receivables</td>
<td>X</td>
</tr>
<tr>
<td>Infrastructure, Property, Plant &amp; Equipment</td>
<td>X</td>
</tr>
<tr>
<td><strong>Total Assets</strong></td>
<td>Xt</td>
</tr>
<tr>
<td><strong>Liabilities</strong></td>
<td></td>
</tr>
<tr>
<td>Payables</td>
<td>Y</td>
</tr>
<tr>
<td>Borrowings</td>
<td>Y</td>
</tr>
<tr>
<td>Provisions</td>
<td>Y</td>
</tr>
<tr>
<td><strong>Total Liabilities</strong></td>
<td>Yt</td>
</tr>
<tr>
<td><strong>Equity</strong></td>
<td>Xt - Yt</td>
</tr>
</tbody>
</table>

Ref: AIFMM, Table 2.6.1.1, p 2|9.
From an operational perspective of ASSET MANAGEMENT
Asset Management Plan

Documents information that specifies:

activities, resources and timescales, required for an individual asset or grouping of assets, to achieve the organisation’s asset management objectives along with the reality of what can provide.
The Asset Plan Provides us the:
Activities, Resources and Timeframes

Activities:
- Operations
- Maintenance
- Capital renewal
- Capital Upgrade/New

Resources:
- Financing and staffing

Timeframes:
- Work programs
Achieving the Organization’s AM Objectives and Service Sustainability
balancing costs, risks, and performance
Achieving the Organization’s AM Objectives and Service Sustainability …. \textbf{Reality Check!}
balancing costs, risks, and performance

\textbf{Projections based on projected funding}

\textbf{Deferral of activities and programs}

\textbf{Likely reduction in service levels}

\textbf{Generation of additional service risks}
Asset Management informs Asset Investment Decisions
balancing costs, risks, and performance
Having Productive Discussions on Affordable Service Levels

Matching levels of service provided by an asset with the expectations and capacity/willingness of customers to pay.
Perfect World – Desired Level of Service

May be unrealistic
Reality of Affordable Level of Service

Is this acceptable ... or can we consider other options?
Levels of Service in the AMPs
Why do we need Level of Service Objectives?

- customers are prepared to pay for
- strategies to deliver that level of service
- link between the cost and level of service
Customer Values

Building customers value different things

Drivers

Customer expectations

Legislative requirements

Strategic plan

Resources
Level of Service Types

Customer LOS

How the customer receives the service

Technical LOS

How the organization provides the service using technical terms
Key Points in Developing LOS
Start Basic and Develop with Experience

- relevant
- measurable
- meaningful
- manageable
- monitor
### Getting Started – An Approach for AMPs

#### Customer Service Levels – Quality Example

<table>
<thead>
<tr>
<th>Expectation</th>
<th>Performance Measure Used</th>
<th>Current Performance</th>
<th>Expected Position in 10 Years based on the current budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roads are smooth and clear.</td>
<td>Customer service requests related to quality.</td>
<td>Low number of complaints</td>
<td>Expected to get worse</td>
</tr>
<tr>
<td>Organizational measure</td>
<td>Road Condition Assessments <em>(Medium Confidence)</em></td>
<td></td>
<td>Expected to get worse <em>(Low Confidence)</em></td>
</tr>
</tbody>
</table>

- **Pie Chart:**
  - Unknown
  - Good
  - Fair
  - Poor

- **Note:**
  - Equipment for users:
    - Related to quality:
  - Provincial Fleet and Fire daily inspections / per use and in depth annually
  - Equipment to stay the same
# Customer Service Levels – Function Example

<table>
<thead>
<tr>
<th>Function</th>
<th>Expectation</th>
<th>Performance Measure Used</th>
<th>Current Performance</th>
<th>Expected Position in 10 Years based on the current budget.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Water service is provided reliably</td>
<td>Service requests related to water reliability</td>
<td>Negligible.</td>
<td>Expected to stay the same</td>
</tr>
<tr>
<td></td>
<td>Organizational measure</td>
<td>Number of service interruptions per year. (High Confidence)</td>
<td>2017 – 0 breaks 2017 - 5 service leak repairs</td>
<td>Expected stay the same (High Confidence)</td>
</tr>
<tr>
<td></td>
<td>Constant Road access is available.</td>
<td>Service Requests</td>
<td>&lt; 10 requests per year</td>
<td>Expected to stay the same</td>
</tr>
<tr>
<td></td>
<td>Organizational measure</td>
<td>Review of network functionality. (Low Confidence)</td>
<td></td>
<td>Expected to stay the same (Low Confidence)</td>
</tr>
<tr>
<td>Category</td>
<td>Expectation</td>
<td>Performance Measure Used</td>
<td>Current Performance</td>
<td>Expected Position in 10 Years based on the current budget</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>------------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------</td>
<td>------------------------------------------</td>
<td>----------------------------------------------------------</td>
</tr>
<tr>
<td>Capacity and Use</td>
<td>Safe drinking water</td>
<td>Service requests</td>
<td>Negligible.</td>
<td>Expected to stay the same</td>
</tr>
<tr>
<td></td>
<td>Organizational measure</td>
<td>Compliance with Water Standards.</td>
<td>2017 – 0 boil water advisory's</td>
<td>Expected to stay the same (High Confidence)</td>
</tr>
<tr>
<td>Capacity/Utilization</td>
<td>No Waste water contamination. Meets environmental regulations.</td>
<td>Service requests</td>
<td>None.</td>
<td>Expected to stay the same</td>
</tr>
<tr>
<td></td>
<td>Organizational measure Confidence levels Medium.</td>
<td>Testing to Provincial regulations.</td>
<td>Meet 100% of the regulations.</td>
<td>Meet 100% of the regulations. (Low Confidence)</td>
</tr>
</tbody>
</table>
Technical Service Levels

Activities undertaken and linked to budget allocations

- Operations
- Maintenance
- Renewal
- Upgrade/new
Likely reduction in service levels
Generation of additional service risks

Achieving the Organization’s AM Objectives and Service Sustainability .... *Reality Check!*

*Sample Council - Projected Operating and Capital Expenditure (COMRIE_S3_V1)*

- Projections based on projected funding
- Deferral of activities and programs
- Likely reduction in service levels
- Generation of additional service risks
## Technical Service Levels – Operations Example

<table>
<thead>
<tr>
<th>Service Attribute</th>
<th>Service Activity Objective</th>
<th>Activity Measure Process</th>
<th>Current Performance *</th>
<th>Desired for Optimum Lifecycle Cost **</th>
</tr>
</thead>
<tbody>
<tr>
<td>Streets are clear</td>
<td>Frequency of snow clearing</td>
<td>Per policy</td>
<td>Adequate</td>
<td></td>
</tr>
<tr>
<td>Street are clean</td>
<td>Frequency of sweeping</td>
<td>Spring cleanup and weekly</td>
<td>Adequate</td>
<td></td>
</tr>
<tr>
<td>Good traction</td>
<td>Sanding</td>
<td>Per policy</td>
<td>Adequate</td>
<td></td>
</tr>
<tr>
<td>Sidewalks are clear</td>
<td>Frequency of clearing</td>
<td>Per policy</td>
<td>Adequate</td>
<td></td>
</tr>
<tr>
<td><strong>Budget</strong></td>
<td></td>
<td><strong>$450,000 on average over the next 10 years on roads.</strong></td>
<td><strong>$450,000 on average over the next 10 years on roads.</strong></td>
<td></td>
</tr>
</tbody>
</table>
## Technical Service Levels – Maintenance Example

<table>
<thead>
<tr>
<th>Service Attribute</th>
<th>Service Activity Objective</th>
<th>Activity Measure Process</th>
<th>Current Performance *</th>
<th>Desired for Optimum Lifecycle Cost **</th>
</tr>
</thead>
<tbody>
<tr>
<td>TECHNICAL LEVELS OF SERVICE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maintenance</td>
<td>Crack sealing of roads</td>
<td>Frequency</td>
<td>$20,000 per year</td>
<td>$25,000 per year</td>
</tr>
<tr>
<td></td>
<td>Patching of roads</td>
<td>Frequency</td>
<td>$60,000 per year</td>
<td>Adequate</td>
</tr>
<tr>
<td></td>
<td>Minor pipe repairs</td>
<td>Frequency</td>
<td>Reactive</td>
<td>Adequate</td>
</tr>
<tr>
<td></td>
<td>Minor sidewalk repairs</td>
<td>Frequency</td>
<td>Planned and reactive</td>
<td>Adequate</td>
</tr>
<tr>
<td></td>
<td>Minor Pedestrian bridge repairs</td>
<td>Frequency</td>
<td>Planned and reactive</td>
<td>Adequate</td>
</tr>
</tbody>
</table>

**Budget**

- $425,000 on average over the next 10 years on roads.
- $430,000 on average over the next 10 years on roads.
## Technical Service Levels – Renewals Example

<table>
<thead>
<tr>
<th>Service Attribute</th>
<th>Service Activity Objective</th>
<th>Activity Measure Process</th>
<th>Current Performance *</th>
<th>Desired for Optimum Lifecycle Cost **</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TECHNICAL LEVELS OF SERVICE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Renewal</td>
<td>Renewal of road surface / structural</td>
<td>Amount</td>
<td>$175,000 per year</td>
<td>$400,000 per year Series of projects road and underground</td>
</tr>
<tr>
<td></td>
<td>Renewal of sidewalks</td>
<td>Amount</td>
<td>$50,000 per year</td>
<td>Adequate</td>
</tr>
<tr>
<td></td>
<td>Renewal of Bridges</td>
<td>Amount</td>
<td>Planned</td>
<td>Adequate</td>
</tr>
<tr>
<td>Renewal</td>
<td>Relining of lines</td>
<td>Amount</td>
<td>Annually. Condition based. Reline all concrete/clay mains over next 10 years.</td>
<td>Adequate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Budget</td>
<td>$160,000 on average every year for the sanitary mains.</td>
<td>$160,000 on average every year for the sanitary mains.</td>
</tr>
</tbody>
</table>
## Technical Service Levels – Upgrade / New Example

<table>
<thead>
<tr>
<th>Service Attribute</th>
<th>Service Activity Objective</th>
<th>Activity Measure Process</th>
<th>Current Performance *</th>
<th>Desired for Optimum Lifecycle Cost **</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upgrade/New</td>
<td>Sanitary Main New Development</td>
<td>Amount</td>
<td>As needed. Have serviced lots available.</td>
<td>Adequate</td>
</tr>
<tr>
<td></td>
<td>Sanitary Sewer Auxiliary power to lift stations</td>
<td>Amount</td>
<td>None Planned.</td>
<td>$120,000</td>
</tr>
</tbody>
</table>

- **Budget**: $0 on average over the next 10 years on Sanitary Sewer. $120,000 in 2020
Have the right discussion!
Levels of Service should:

Inform of aspirations
Link to the affordable reality

Support an informed discussion about choices and consequences
The broader impact of Levels of Service

Levels of Service are described in our:

Community Planning
Asset planning and also
Financial planning and reporting

We have to integrate those if we are to facilitate informed decision making .... and make “square pegs fit in round holes”
NAMS Canada Training Opportunities

• 8 modules over 10 weeks
• Interactive & engaging course
• Hands-on experience with tools & templates
• AM Plan as course output

Contact: Nicole Allen
Executive Director
NAMS Canada