Asset Management and Lean

Tina Tapley, CPA, CA
Director of Finance & Administration/City Treasurer
The City of Fredericton

Guy Félio, PhD, P.Eng., FCSCE
Infrastructure Management Specialist
R.V. Anderson Associates
Asset Management ... What?

Do the RIGHT THING
... To the RIGHT ASSET ...
... At the RIGHT TIME.

- Resources
- Services
- Value
- Sustainability
- Protect investments

At the RIGHT COST!
The Asset Management Challenge

- Extensive growth & sprawl 1950-1980
- Infrastructure aging
- Insufficient funding and little reserves
- Rising expectations and accountability

However ... Scope of problem now on radar

And ... With understanding comes action
Results Citizens Value - Costs = Value Surplus

Created when:
Affordability Maintained
and

Results are Maximized
Lean and Asset Management
key contributors
How it All Connects
How it All Connects
How it All Connects

LEAN & ASSET MANAGEMENT

Resources

Services to Public

Sustainable and Resilient

Results for Community at Affordable Cost

“Value Surplus”
How it All Connects

Budget

- Resources
- Services to Public
- Lean & Asset Management
- Sustainable and Resilient
- Results for Community at Affordable Cost
- "Value Surplus"

52% Personnel Costs
28% Non-Personnel Operating Costs
20% (Capital & Debt) Infrastructure

Fredericton
2016 Study found:

“Fredericton, NB ranks #1 as the most competitive in Canada.”
Citizen Expectations

Value. Affordability. Accountability.

Want inefficiencies eliminated before asked for a price increase

Lean and Asset Management Will Do This.
Citizen Expectations (from Asset Management perspective)

- Safe drinking water
- When you flush, it goes away ... without harm to the environment (sewage management)
- Mobility (road quality, capacity; public transit)
- Accessibility (public buildings, recreational and cultural facilities)
- Safety and emergency response
Asset Management... It’s all about Services

• Maintain reliable, quality services
• Protect health and safety
• Extend lifespan of existing
• Create sustainable replacement

→ Start now, save more
→ Responsible management

“do right thing to the right asset at right time”
Lean... It’s about Services, too!

- Add value - focused on the customer
- Improve service delivery
  - Focus on improving processes
- Find efficiencies
  - Use the right resources
  - Optimize the use of resources
  - Eliminate waste (non-value add steps) in process

“the right resources at the right time doing the right thing”
Lean - Eliminates Waste

- Waste is any activity that **consumes** time, space or **resources** but **does not add value** to the product or service from the perspective of the customer.

- **Methodology**

  ![LEAN 6σ Methodology Diagram](image)

  Courtesy: Meridian Health Partners
Lean is Creative Problem Solving

- Fact and evidence based analysis
- Measures effectiveness & efficiencies

- Streamlines and improves processes
- Re-invents the way business is done
How Does Asset Management Work?

**Recreation** – playgrounds, arenas, swimming pools,…

**Public Transit** – buses, depot, shelters…

**Transportation** – roads, streets, sidewalks, signs, bridges,…

**Public Safety** – fire and police stations, fire trucks, police cars,…

**Water Supply** – mains, hydrants, treatment plant, pump stations…

**Wastewater** – sewers, treatment plant, PS’s…

**Storm Drainage** – sewers, catchbasins, ditches,…
The Big Picture

Levels of Service

Management Strategies
- Demand Management
- Lifecycle Asset Management
- Financial Management
- Risk Management

State of the Infrastructure and Facilities

Governance
- Policies
- Decision-making

Processes
- Technologies
- Business processes
- Practices

Resources
- People
- Financial
- Material

Fredericton
InfraGuide - Key Principles

1) What do you have and where is it? (Inventory)
2) What is it worth? (Costs/replacement Rates)
3) What is its condition and expected remaining service life? (Condition and Capability Analysis)
4) What is the level of service expectation, and what needs to be done? (Capital & Operating Plans)
5) When do you need to do it? (Capital and Operating Plans)

6) How much will it cost and what is the acceptable level of risk(s)? (Short/Long-term Financial Plan)

7) How do you ensure long-term affordability? (Short- and Long-term Financial Plan)
LEAN & AM Interconnected

✓ Customer Focused
✓ Fact & Evidence Based
✓ Manage Resources
✓ Optimize Resources
✓ Match Resources to Demand
✓ Meet Customer Needs – Service Delivery
✓ Creates Capacity & Savings & Improves Service
✓ Key to Sustainability and Resiliency

“Spending the Right Money on the Right Resources at the Right Time”
More than Connections - Integration

Corporate Efficiency
(Lean)

Asset Management

Lean
Lean Project Examples
With Asset Management
Benefits - Integration
Light Vehicle Utilization L6S Project

The Purpose:
• Increase vehicle utilization while meeting departments service delivery needs
  • To get full value out of vehicle assets

Voice of the Customer:
• Right vehicle available at right time to meet service delivery

The Problem:
• Underutilized vehicles in the City’s light fleet

The Findings:
• $362,000 savings. 7% reduction in light fleet vehicles
  Right-sized 9 vehicles; Reduced 5 vehicles
• No impact on service delivery
Plant Watering Lean Waste Walk Project

The Purpose:
• Improve plant watering process. 5-ton truck is a problem.

Voice of the Customer:
• Process takes too much time. Are we using the right resources?

The Problem:
• Inefficient use of resources and process takes too long.

The Findings:
• Eliminated 95% of overtime. 90% material savings. Vehicle savings from 5-ton to 1-ton truck.
• Improved service delivery - work done 40% faster (11.2hrs to 7.2hrs/event).
CFO Perspective
Why Lean & AM important?

• Corporate Accountability:
  – How well are services performing? What level or type of service meets customer needs?
  – How efficiently are existing resources used and how effective are existing resources at providing the service?
    • Lean & AM analysis/evidence answer these questions, ‘proof’.

• Achieve Annual Budget Goal:
  – Balance priorities within taxpayer affordability considering long-term impact of decisions to achieve best value.
Achieved 2012-2016

- Savings Achieved $6.6M
- No cuts to service
- Improved services

Cost Accountability to Taxpayer.
Sustainability.
What About Resiliency?

Sustainability

Lean 6 Sigma

Asset Management

Risk Management

Resiliency
Interdependencies?
Community Risk Management

• Both Lean and AM optimize Risk Management
• Know your risks
• Define your organization and community’s risk tolerance/appetite: resiliency objectives
• Be proactive - unplanned interventions are costly
• Adopt mitigative measures that include adaptation and redundancy
• Become nimble, flexible with the ability to adapt and rebound - Resiliency
The integration of Asset Management and Lean creates the most value

“do right thing to the right asset at right time”

“the right resources at the right time doing the right thing”

“doing things right”
1) Requires Leadership to Create New Culture and Mindset

• Create “Multiplier” culture.
  – Seize opportunity to deeply leverage existing resources.
  – Continuous Improvement. ‘WHY, Why, Why, Why, Why’

• Remove old thinking. “Logic of Addition” says:
  – “Our people are overworked”
  – “Our best people are the most maxed out” and
  – “Thus, accomplishing a bigger task requires the addition of more resources”.
2) Requires Everyone Involved & Communication

• To achieve buy-in throughout organization
• Start small - pockets in organization
• Create small wins
  – see results & benefits for them
• Get staff at all levels involved in projects
  – To ‘try it out’
  – People benefits - engagement, empowerment, sense of ownership and accomplishment
“Deeply leveraging existing resources” to meet the challenges of today, add value and maintain affordability for our taxpayers.
## Canadian Infrastructure Report Card National Tour

Facts about our Municipal Infrastructure and Ideas to make it Sustainable

### April - May 2016

The Canadian Society for Civil Engineering  
La Société canadienne de génie civil

<table>
<thead>
<tr>
<th>DATE</th>
<th>LOCATION</th>
<th>TIME</th>
<th>SECTION CONTACT</th>
<th>EMAIL</th>
<th>PHONE</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 20, 2016</td>
<td>FREDERICTON</td>
<td>12:00 p.m.</td>
<td>Jeff Rankin</td>
<td><a href="mailto:rankin@unb.ca">rankin@unb.ca</a></td>
<td>506-453-4618</td>
</tr>
<tr>
<td>April 20, 2016</td>
<td>MONCTON</td>
<td>7:00 p.m.</td>
<td>Samuel Richard</td>
<td><a href="mailto:Samuel.Richard@canamgroupinc.com">Samuel.Richard@canamgroupinc.com</a></td>
<td>506-857-3164 ext. 2043</td>
</tr>
<tr>
<td>April 21, 2016</td>
<td>HALIFAX</td>
<td>12:00 p.m.</td>
<td>Haibo Niu</td>
<td><a href="mailto:Haibo.Niu@Dal.Ca">Haibo.Niu@Dal.Ca</a></td>
<td>902-893-6714</td>
</tr>
<tr>
<td>April 22, 2016</td>
<td>ST. JOHN’S</td>
<td>12:00 p.m.</td>
<td>Bing Chen</td>
<td><a href="mailto:bchen@mun.ca">bchen@mun.ca</a></td>
<td>709-864-8958</td>
</tr>
</tbody>
</table>
Questions?

Tina Tapley
tina.tapley@fredericton.ca

Guy Félio
GFelio@RVAnderson.com
How it All Connects

Budget

LEAN & ASSET MANAGEMENT

Resources

Services to Public

Sustainable and Resilient

Results for Community at Affordable Cost

“Value Surplus”