

# Asset Management and Lean

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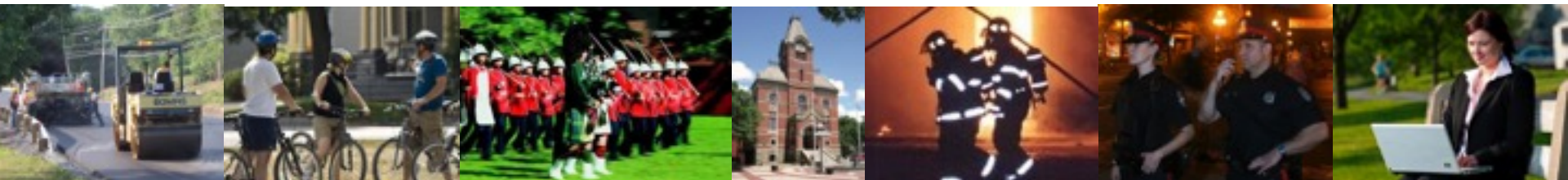
**The City of  
Fredericton**



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# Asset Management ... What?

Do the RIGHT THING

... To the RIGHT ASSET ...

... At the RIGHT TIME.

*At the RIGHT COST!*

- Resources
- Services
- Value
- Sustainability
- Protect investments



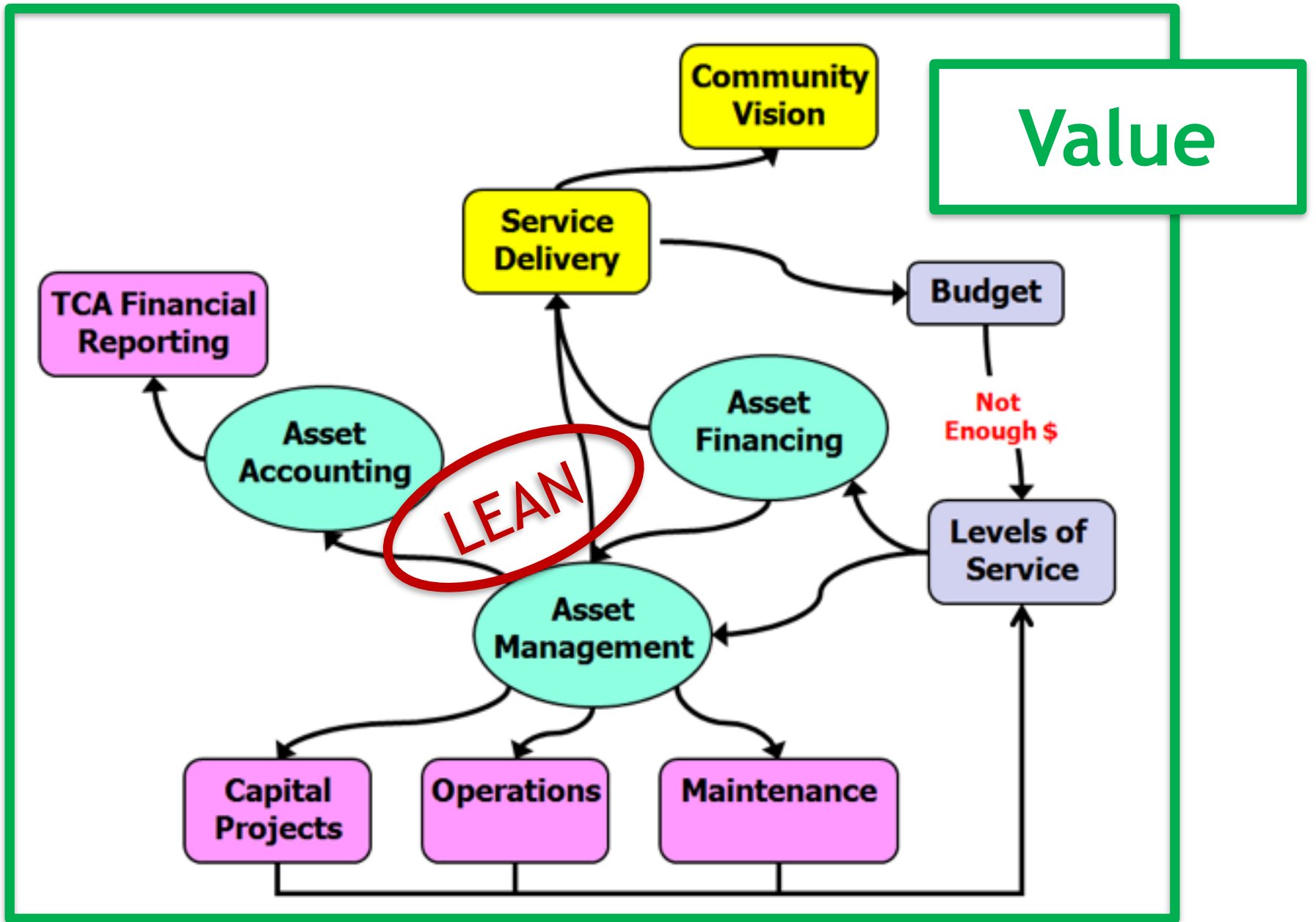
# The Asset Management Challenge

- Extensive growth & sprawl 1950-1990
- Infrastructure aging
- Insufficient funding and little reserves
- Rising expectations and accountability



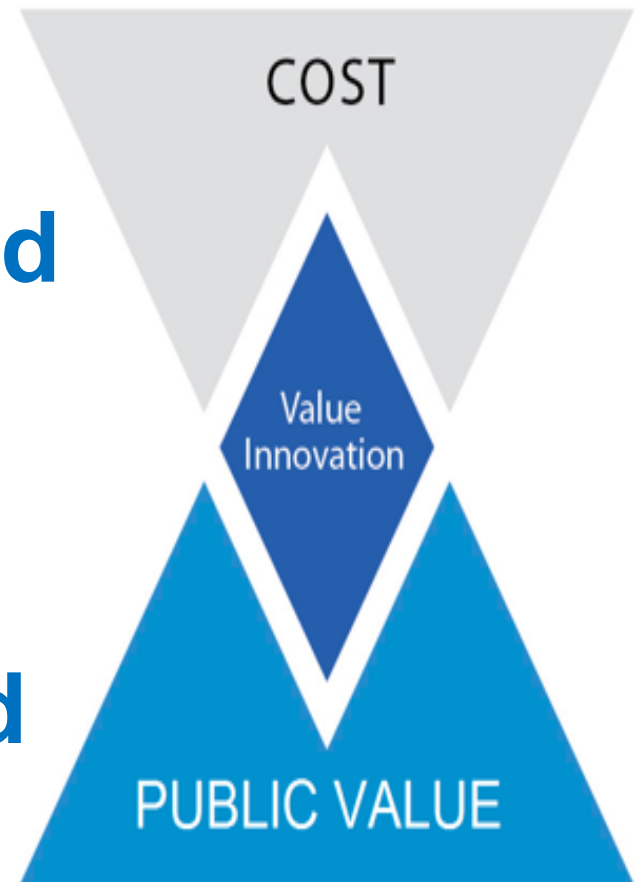
However ... Scope of problem now on radar

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

***“Value  
Surplus”***



# How it All Connects

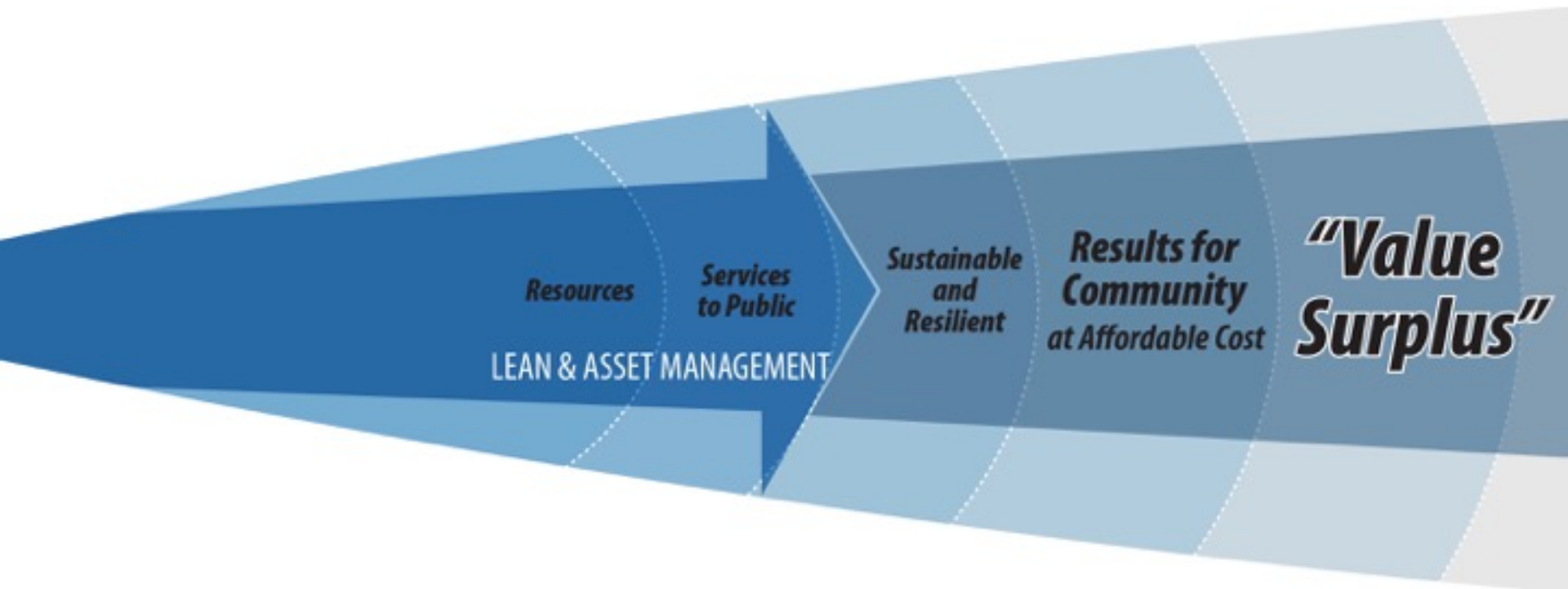




# How it All Connects



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**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**



Courtesy: Meridian Health Partners

# Lean is Creative Problem Solving

- Fact and evidence based analysis
- Measures effectiveness & efficiencies
- Asks.....Why? Why?, Why?, Why?, Why?
  
- 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...

**Public Safety** - fire and police stations, fire trucks, police cars,...

**Transportation** - roads, streets, sidewalks, signs, bridges,...

**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



# InfraGuide - Key Principles

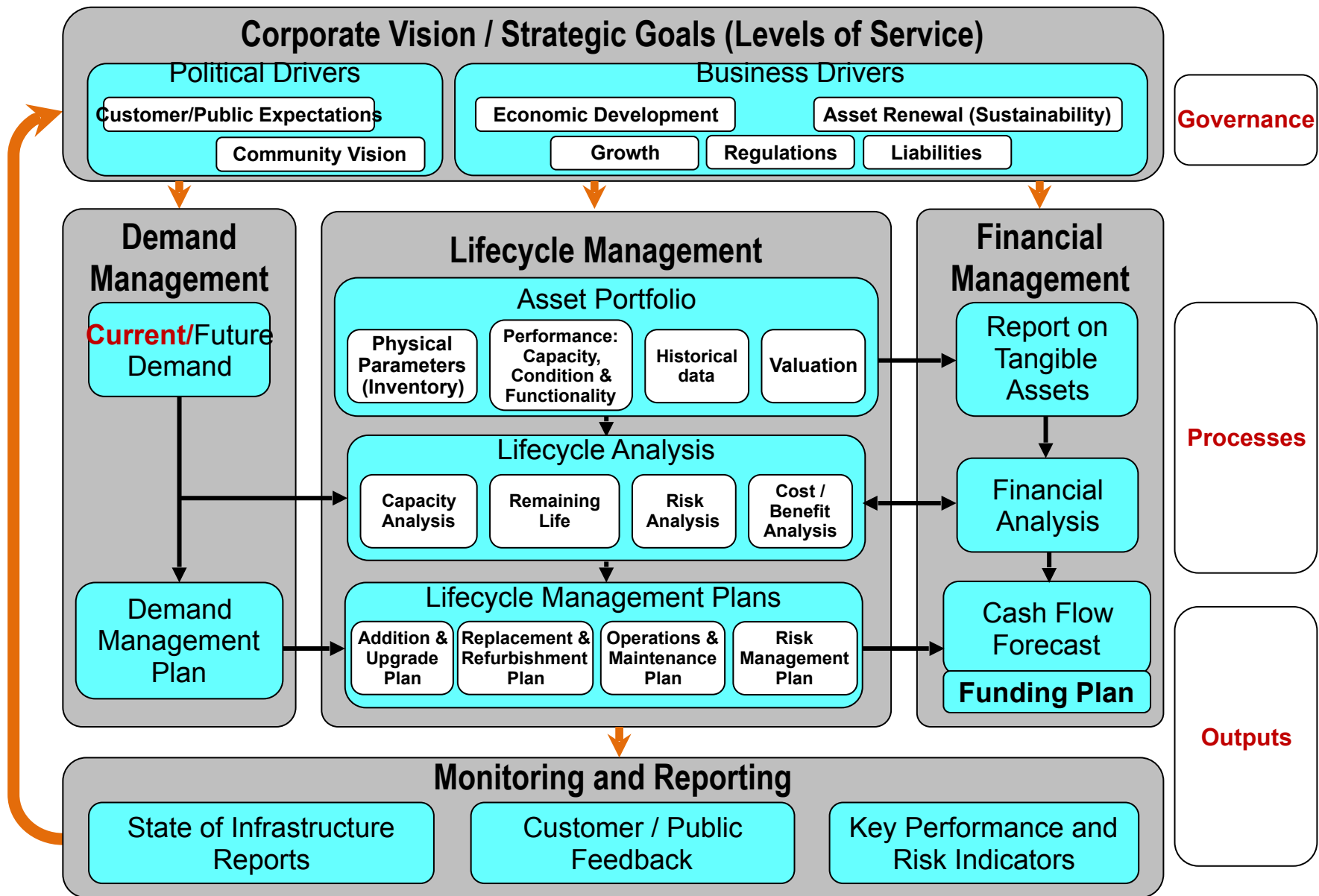


- 1) What do you have and where is it?  
(Inventory)
- 2) What is it worth? (Costs/replacement Rates)
- 3) What is its condition and expected remaining service life? (Condition and Capability Analysis)
- 4) What is the level of service expectation, and what needs to be done? (Capital & Operating Plans)

# InfraGuide - Key Principle



- 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)



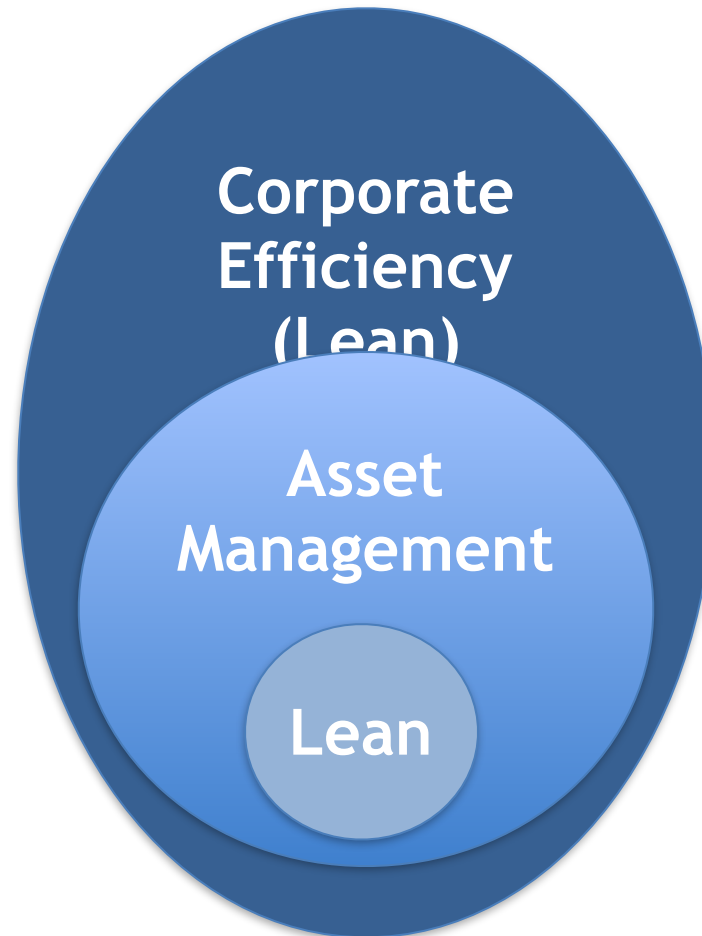
# LEAN & AM Interconnected



- ✓ **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



# 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.

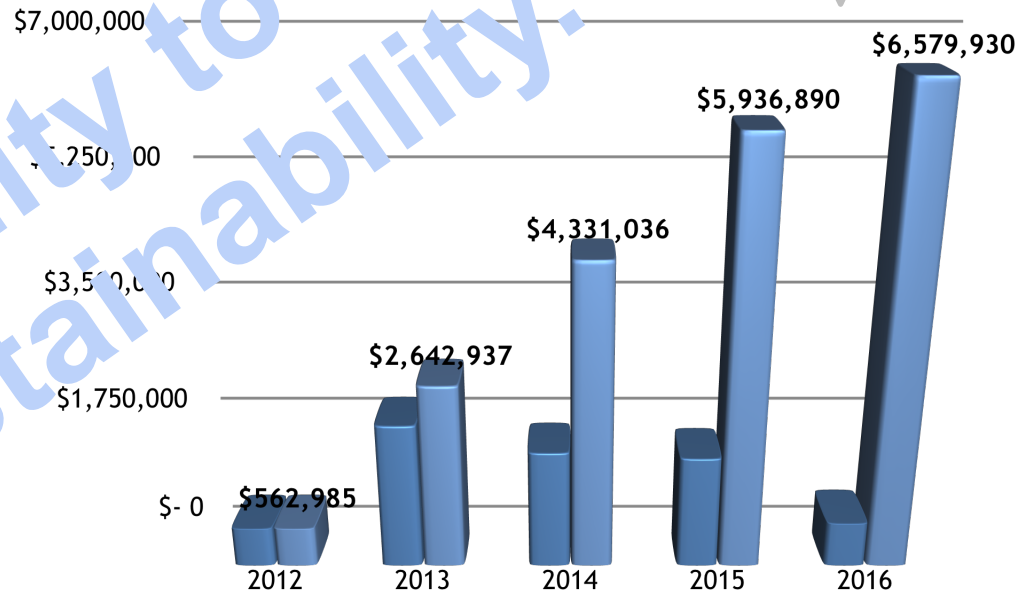


# Achieved 2012-2016

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

Budget Savings

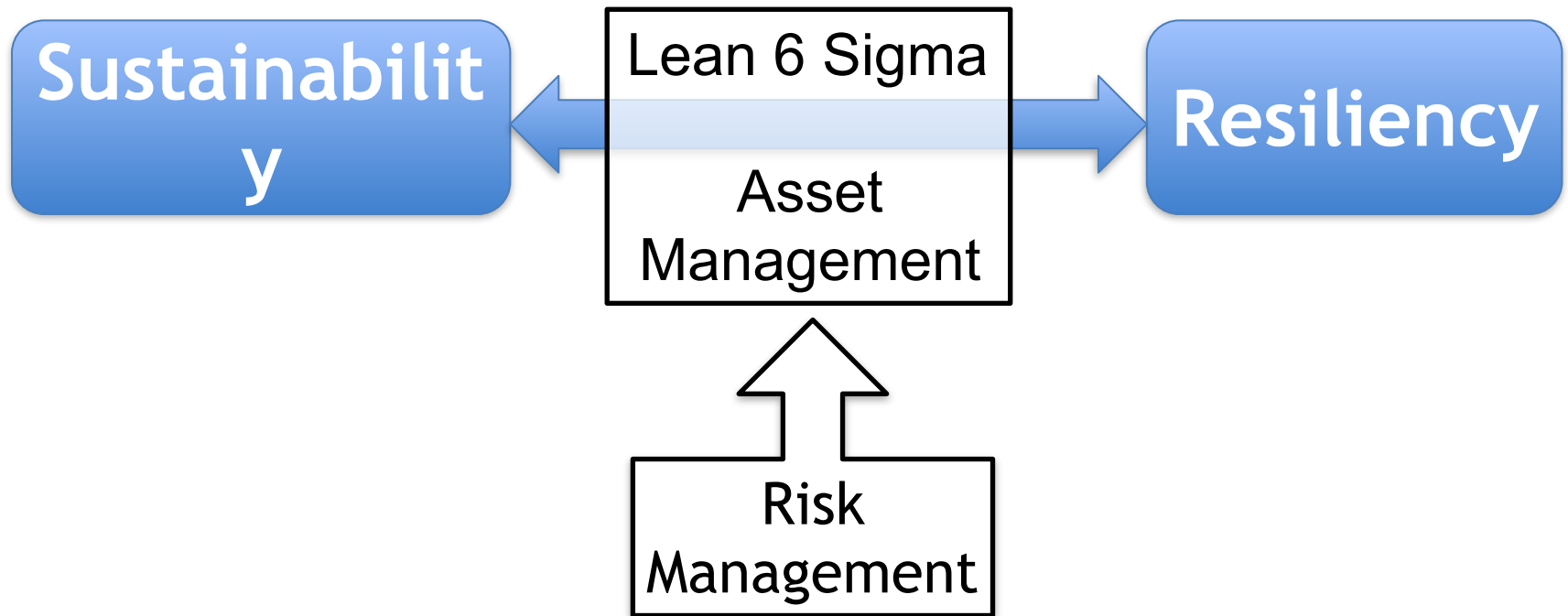
COST



Accountability to Taxpayer.  
Sustainability.



# What About Resiliency?



# Interdependencies?



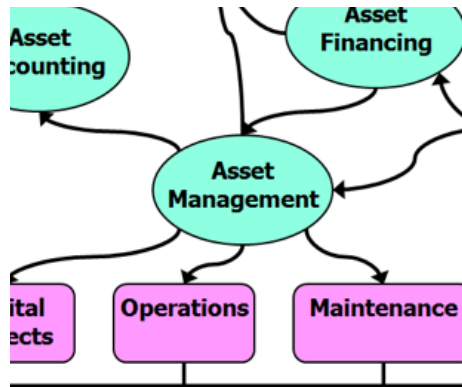


# Community Risk Management

- 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**

**RESILIENT ORGANIZATION**

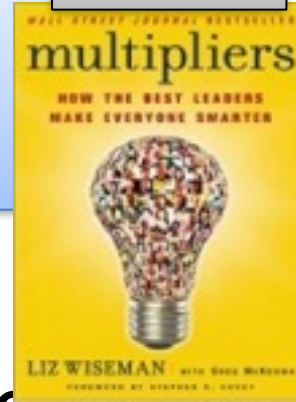
# The integration of Asset Management and Lean creates the most value



*“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*



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







# Questions?

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