



**Improvement  
& Innovation**

# Equipment Utilization

City of Fredericton  
Engineering & Operations Department  
Presented By: Mike Walker, P.Eng

# Equipment Utilization Project



- February - May 2018
- Project completed by Mark Symes, Symplicity Designs
- Roadway Operations, Parks & Trees, Water & Sewer, Pollution Control and Fleet divisions all participated

# Who am I?

- Manager of Roadway Operations and Parks & Trees divisions
- Certified Green Belt
- Like's Change



# Equipment Utilization Project



- Project Team
  - Dylan Gamble, Director - Engineering and Operations (Project Champion)
  - Trent Brewer, Manager - Water & Sewer, Fleet
  - Mike Walker, Manager - Roadway Operations
  - Don Murray, Manager - Parks & Trees
  - Jim McIsaac, Supervisor - Roadway Operations
  - Andrew Bird, Foreman - Fleet
  - Rob Foster, Foreman - Water & Sewer
  - Rick Courier - Parks & Trees

# Executive Summary



- We have heavy equipment that has been purchased and not being used for up to six months of the year.
- We have equipment not being utilized while other divisions rent same equipment for operations
- Sell excess equipment (right-size fleet)
- Share equipment with other divisions to reduce overall cost of ownership and operations

# Problem Statement



- *“We have heavy equipment for the City of Fredericton that’s been purchased and not being used for up to six months (or more) of the year. We aren’t sure if we have the right equipment (mix), and it’s unclear if we are getting the value (ROI) for the equipment. We don’t have visibility of availability across divisions on the equipment. We don’t have a pro forma or expectations of utilization and uptime on the gear, therefore we don’t have value created expectations.”*

# Goal Statement



- The City of Fredericton has an improvement rate of 2.25%, which correlates to \$2.58M in savings annually
- We want to move our utilization of equipment from a base of X% to a plan of Y% with a stretch of Z% by May of 2018

# Background Information



- Fleet Division owns all City of Frederickton equipment
- No chargeback models exist (user divisions don't see any costs for capital and ongoing maintenance)
- Rental equipment is 100% charged to the user division
- Individual divisions pay for fuel usage



# Project Scope

Scope	
In Scope	Out of Scope
<ul style="list-style-type: none"><li>- Heavy equipment within engineering and operations (everything within the divisions)</li><li>- Proforma and creating expectations around value</li><li>- Bench marking (where we can swipe)</li><li>- Leverage CAMFM (Canadian Association Municipal Fleet Managers)</li><li>- Formal communication for leveraging equipment</li><li>- Elimination of services provided by contractor (example: snow removal)</li><li>- Increase level of service provided by contractor for certain pieces of equipment</li><li>- Excavators, tandems (salt, plow, gravel and asphalt), loaders, backhoes, graders, farm tractors, trackless, 3 ton boom trucks</li><li>- Renting gear within</li></ul>	<ul style="list-style-type: none"><li>- Utilization technology in gear (black box)</li><li>- Specific utilization of equipment while running</li><li>- Light equipment (1 ton and below)</li><li>- Tow behind equipment (ie. trailers, etc.)</li><li>- Heavy equipment outside of engineering and operations (other divisions, ie. police, fire and building services)</li><li>- Service levels</li><li>- Elimination of doing private work</li><li>- Exploring the idea of a second shift</li><li>- All specialty equipment (ie. aerial lifts, chip trucks, vactor, etc.)</li><li>- Mowing</li><li>- Procurement process</li><li>- Renting gear to private industry</li></ul>

## Voice of the Customer



- We sometimes had a hard time staying focused on who the customer truly was (Service Delivery to the Public Vs. Internal Customers)

# Current/Previous State

Equipment	Seasons			ONLY used 6 months of the year	TOTAL (AS IS)	NEW (TO BE)
	BOTH	WINTER	SUMMER			
Loaders	Parks & Trees - 2 Water & Sewer - 2 Roadways - 4	Parks & Trees - Water & Sewer - Roadways - 11 Spares - 2		15	22	18
Tandems	Water & Sewer - 4 Roadways - 10	Roadways - 11 (incl. 4 salt trucks, 1 plow truck = 5 spares)		11		
Graders		Roadways - 3		0	3	
Straight Truck	Parks & Trees - 1 Water & Sewer - 1		Roadways - 3	3	5	4
Farm Tractors	Parks & Trees - 5		Roadways - 1 Parks & Trees - 2	3	6	5
Excavators	Water & Sewer - 3		Roadways - 2	2		
Trackless	Parks & Trees - Water & Sewer - Roadways - 2	Roadways - 14 (2 spares)	parks - 1 (1 spare)	12		
Backhoes	Water & Sewer - 1		Roadways - 2 (rent 1)	3 * 1		2

# Data Summation



			Weekly Utilization															
Equipment Type	Equipment Number	Equipment Description	Day 1:				Day 2:				Day 3:				Day 4:			
			Morning	Afternoon	Overtime	Overnight	Morning	Afternoon	Overtime	Overnight	Morning	Afternoon	Overtime	Overnight	Morning	Afternoon	Overtime	Overnight

## Main Issues Found

- This project was very similar to a staffing to demand exercise.
- Divisions weren't willing to share equipment for fear of not having it available
- Divisions hold on to equipment, for fear of not being able to replace it through Fleet
- Divisions didn't understand their own utilization of equipment
- Assumption that it is cheaper to rent certain equipment over ownership
- User Divisions pay for rental while Fleet division pays for ownership

## Summation of Changes



- Sell 4 Loaders
- Sell 1 Tractor
- Move Backhoe from W&S to P&T
- Move 1 trailer and mower from W&S to P&T

# Summation of Changes



- All mowing now completed by P&T division (the experts)
- Loaders rationalized for maximizing utilization
- 1 full time equipment operator assigned to P&T from RO to run backhoe for smaller work that historically has been contracted out.



## Summary of Savings

- Hard savings
  - \$335,000 sale of equipment
  - \$50,000 annual maintenance costs
  - \$30,000-\$40,000 contractor costs
  - Approx. 16% of annual City improvement rate
- Time /capacity savings
- Improvements to customer experience
  - Equipment to demand - increase utilization of equipment without affecting user departments



# Potential Further Savings



- Co-leasing equipment
- Continued rationalization of equipment utilization

# Lessons Learned



- Nobody likes change
- Getting rid of assets is tough

*This too  
shall pass.  
It might pass  
like a kidney  
stone.  
But it will pass.*

# Acknowledgements



- Team
- Staff involved in the change
- Symplicity Designs



Questions?