

# Automation Implementation

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# Agenda

1. Progress so far
2. Core Service Review findings
3. Business model
4. Funding strategy
5. Implementation strategy

# Progress to date

- Two new trucks
- Recycling Contract extended
- Communications
- Wheeled Cart RFP- Closed
- Core Service Review

# Core Service Review Findings



## CITY OF NANAIMO CORE SERVICES REVIEW REPORT

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### SIGNIFICANT FINDINGS AND RECOMMENDATIONS

#### Findings

The main issues facing the Department are **injuries to workers and associated WCB costs and restrictions arising from unsuitable equipment**. The **Trucks**, although some are less than ten years old, are also **unreliable and expensive to maintain**.

Best practice is to **automate garbage collection**. Nanaimo plans to introduce automation in a three-phase approach beginning this Fall and Council has authorized the purchase of two new trucks.

- As per the existing plan (Option 1), Council will buy 6 more new automated trucks & bins at a cost of \$6.8 million, maintain weekly kitchen waste collection and bring re-cycling in-house. If the remaining trucks were to be ordered in the near future, there would probably be bulk purchase savings of 5% (\$255,000) on the remaining six trucks and bins and spares and servicing would be standard.
- The consultant team also identified another option (Option 2) which is to buy 2 more new automated trucks & bins at a cost of \$3.8 million, change the collection of kitchen waste weekly to bi-weekly and continue to contract out recycling.

#### Recommendations

Analysis of both options including comparing pros and cons of each option as well as developing a detailed business model (provided in Appendix 12, pages 186-190) indicates that **the superior service under the Option 1, the potential to pick up yard waste, and the potential saving of \$255,000 slightly outweighs the disadvantage of being unable to contract out again, especially as contracting out sanitation services has not proved to be more economical in other communities**. The City should negotiate an extended period of testing within which recycling may be contracted out again, as it did in respect of bring parking in-house.

Considerations for implementing automation is provided in Appendix 12, page 190.

# Business Model

Part A- Level of service

Part B- Cart ownership



# Service level implications- Investment Required

	In House Model	Hybrid Model
Total # of Trucks Required	8	4
Current Investment in 2 Automated Trucks	\$ 880,130	\$ 880,130
Additional Investment in Trucks Required	\$ 2,242,628	\$ 681,249
Total Investment in Trucks	\$ 3,122,758	\$ 1,561,379
# of Carts Required	72000 *	48000 *
Investment in Carts	\$ 4,300,000	\$ 2,700,000
Total Additional Investment Required	\$ 6,542,628	\$ 3,381,249
Total Investment	\$ 7,422,758	\$ 4,261,379

\*The cart requirements are lower than previously stated since staff plan to issue all single family dwellings with suites one large set of carts to share, as opposed to two standard sets.

# Service level Implications in brief

	In House	Hybrid
Service level	Stays same	Decrease
Kitchen Waste	Weekly	Biweekly
Garbage	Biweekly	Biweekly
Recycling	Biweekly	Biweekly

Capital costs	\$7,422,758	\$4,261,379
Trucks	8	4
Carts	72,000	48,000



# Business Model :

## Part B. Who owns the carts?

Two options:

1. User owned carts - costs paid by user \*
2. City owned carts - costs part of annual user fee\*

\*Ownership includes purchase, repair, replace.

Carts must remain with the property.

Standard set of carts costs approximately \$165.

# Cart ownership implications

	User Owned	City Owned
Current Users	User purchases (City to provide 5 year payment plan)	City provides
New Users	User Purchases outright	City provides
Repair/Replacement	User pays directly	City provides
Warranty claims	More complex	Less complex
Impact on User Fees	None *	Increased annual user fees

**\* City will provide five year payment plan for initial purchase required by current users**

# Business Model Overview-

## Estimated Impact on Annual User Fees

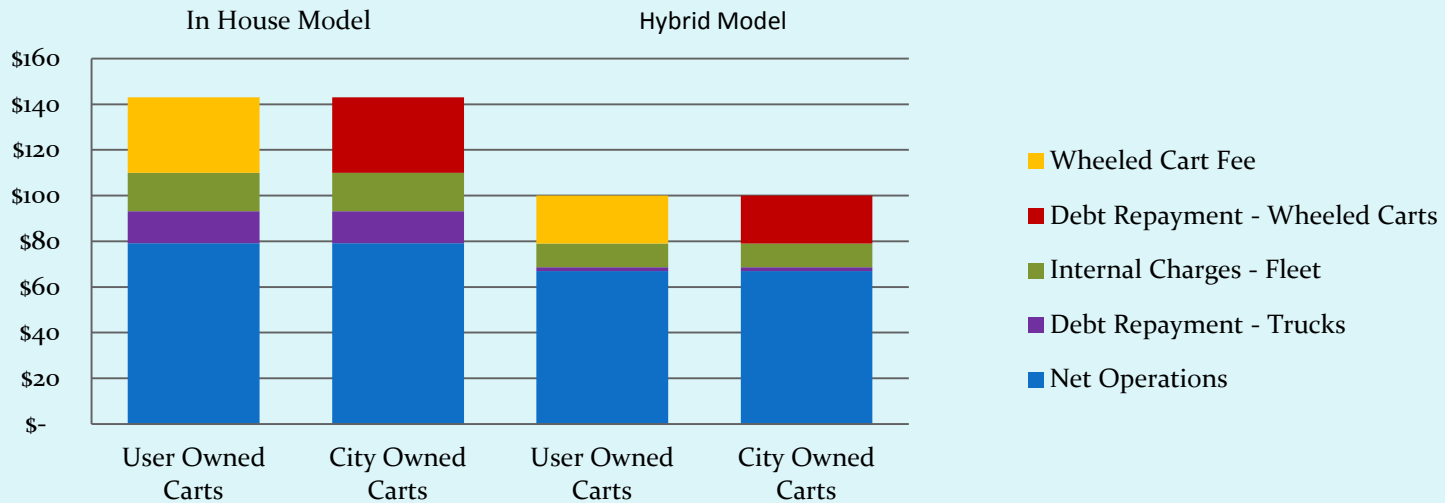
	In House Model		Hybrid Model	
	User Owned Carts	City Owned Carts	User Owned Carts	City Owned Carts
Year 1 *	\$ 143	\$ 143	\$ 100	\$ 100
Years 2 - 5 *	\$ 109	\$ 110	\$ 92	\$ 94
Years 6 - 10	\$ 71	\$ 102	\$ 66	\$ 87
Future Years	\$ 62	\$ 79	\$ 64	\$ 75

\*For user owned carts, year 1 to 5, the user fee Includes cart financing repayment that will show as a separate line item on the user rate bill.

Hybrid annual user fees are based on manual collection of recycling

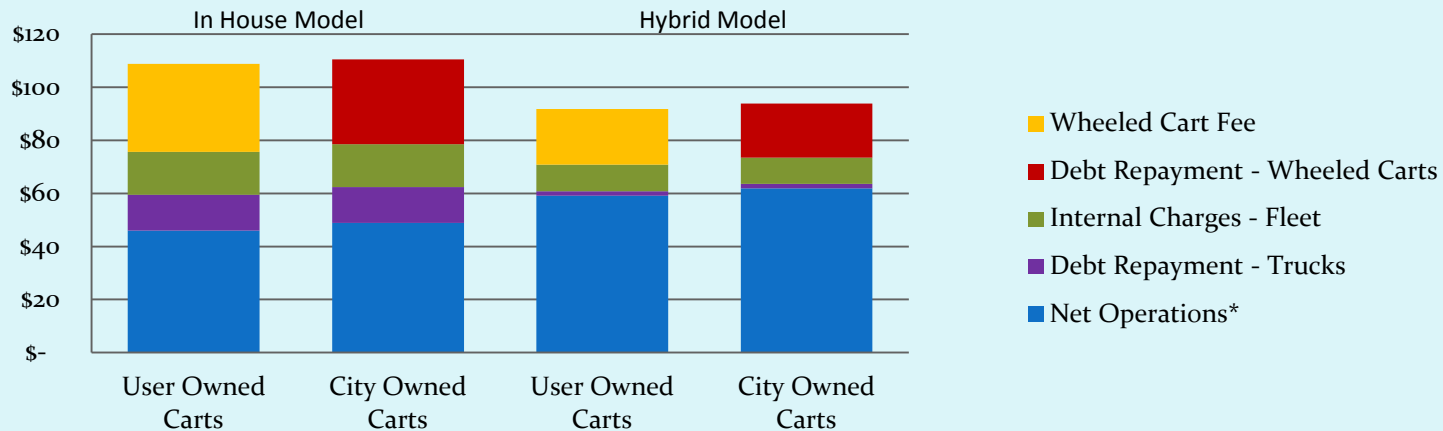
2016 user rate is \$100.75

# Impact on User Fees – Year 1



	In House Model		Hybrid Model	
	User Owned Carts	City Owned Carts	User Owned Carts	City Owned Carts
Estimated # of Users	27,078	27,078	27,078	27,078
Net Operations	\$ 79	\$ 79	\$ 67	\$ 67
Debt Repayment - Wheeled Carts	\$ -	\$ 33	\$ -	\$ 21
Debt Repayment - Trucks	\$ 14	\$ 14	\$ 2	\$ 2
Internal Charges - Fleet	\$ 17	\$ 17	\$ 10	\$ 10
<b>User Fee</b>	<b>\$ 110</b>	<b>\$ 143</b>	<b>\$ 79</b>	<b>\$ 100</b>
Wheeled Cart Fee	\$ 33	\$ -	\$ 21	\$ -
<b>Total Cost per User</b>	<b>\$ 143</b>	<b>\$ 143</b>	<b>\$ 100</b>	<b>\$ 100</b>

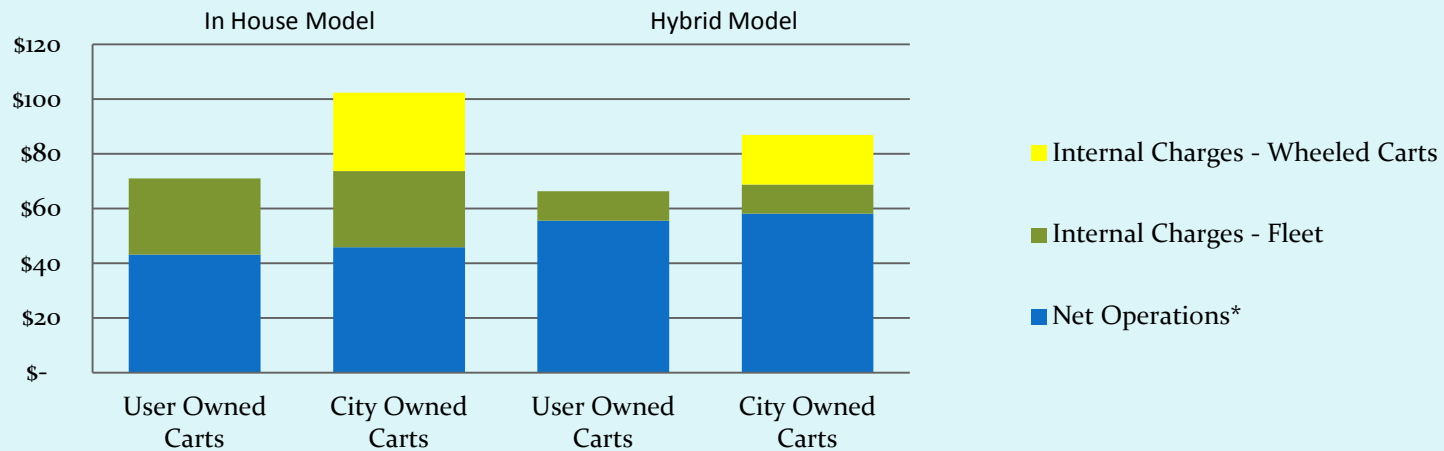
# Impact on User Fees – Years 2 - 5



	In House Model		Hybrid Model	
	User Owned Carts	City Owned Carts	User Owned Carts	City Owned Carts
Estimated # of Users	28,093	28,093	28,093	28,093
Net Operations*	\$ 46	\$ 49	\$ 59	\$ 62
Debt Repayment - Wheeled Carts	\$ -	\$ 32	\$ -	\$ 20
Debt Repayment - Trucks	\$ 13	\$ 13	\$ 2	\$ 2
Internal Charges - Fleet	\$ 16	\$ 16	\$ 10	\$ 10
<b>User Fee</b>	<b>\$ 76</b>	<b>\$ 110</b>	<b>\$ 71</b>	<b>\$ 94</b>
Wheeled Cart Fee	\$ 33	\$ -	\$ 21	\$ -
<b>Total Cost per User</b>	<b>\$ 109</b>	<b>\$ 110</b>	<b>\$ 92</b>	<b>\$ 94</b>

\*Includes cost of cart repairs and additional carts for growth in City Owned Carts model

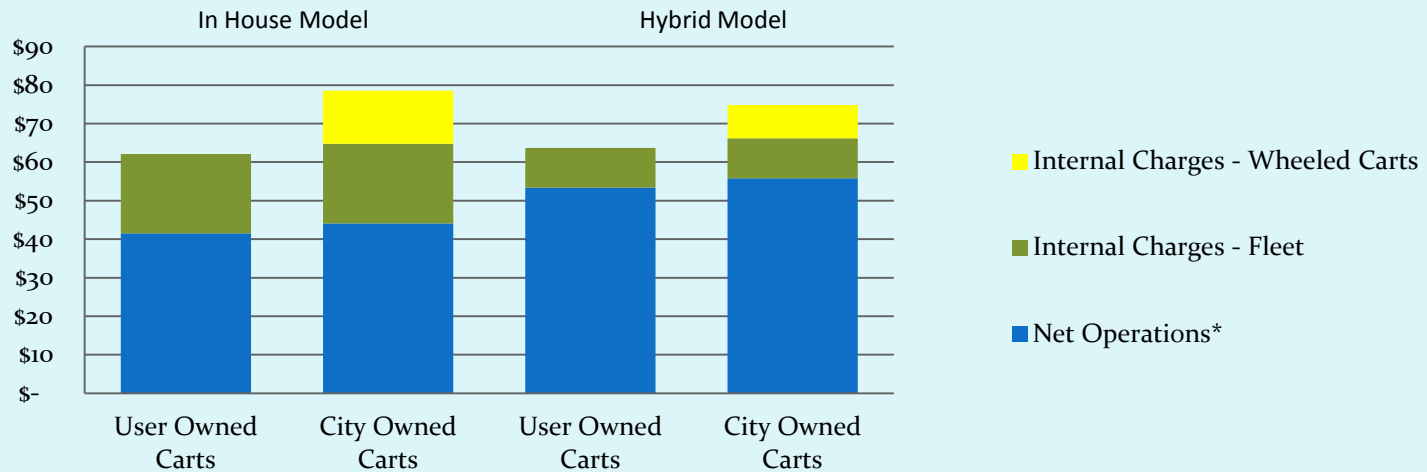
# Impact on User Fees – Years 6 -10



	In House Model		Hybrid Model	
	User Owned Carts	City Owned Carts	User Owned Carts	City Owned Carts
Estimated # of Users	29,921	29,921	29,921	29,921
Net Operations*	\$ 43	\$ 46	\$ 56	\$ 58
Internal Charges - Fleet	\$ 28	\$ 28	\$ 11	\$ 11
Internal Charges - Wheeled Carts	\$ -	\$ 29	\$ -	\$ 18
<b>User Fee</b>	<b>\$ 71</b>	<b>\$ 102</b>	<b>\$ 66</b>	<b>\$ 87</b>

\*Includes cost of cart repairs and additional carts for growth in City Owned Carts model

# Impact on User Fees – Future Years



	In House Model		Hybrid Model	
	User Owned Carts	City Owned Carts	User Owned Carts	City Owned Carts
Estimated # of Users	31,140	31,140	31,140	31,140
Net Operations*	\$ 41	\$ 44	\$ 53	\$ 56
Internal Charges - Fleet	\$ 21	\$ 21	\$ 10	\$ 10
Internal Charges - Wheeled Carts	\$ -	\$ 14	\$ -	\$ 9
<b>User Fee</b>	<b>\$ 62</b>	<b>\$ 79</b>	<b>\$ 64</b>	<b>\$ 75</b>

\*Includes cost of cart repairs and additional carts for growth in City Owned Carts model

# Funding Strategy



# Funding Strategy

- Investment Required
- Funding Sources
- MFA Equipment Financing Program

# Investment Required

2 automated trucks already purchased, delivered in August, funded from Equipment Replacement Reserve

	In House Model	Hybrid Model
Total # of Trucks Required	8	4
Current Investment in 2 Automated Trucks \$	\$ 880,130	\$ 880,130
Additional Investment in Trucks Required \$	\$ 2,242,628	\$ 681,249
Total Investment in Trucks \$	\$ 3,122,758	\$ 1,561,379
# of Carts Required	72,000	48,000
Investment in Carts \$	\$ 4,300,000	\$ 2,700,000
Total Additional Investment Required \$	\$ 6,542,628	\$ 3,381,249
Total Investment \$	\$ 7,422,758	\$ 4,261,379

# Funding Sources

	In House Model	Hybrid Model
Equipment Replacement Reserve	\$ 1,330,130	\$ 1,330,130
MFA (5 year borrowing)	\$ 6,092,628	\$ 2,931,249
Total	\$ 7,422,758	\$ 4,261,379

Short term borrowing (5 years or less) requires Council resolution.  
Long term borrowing (greater than 5 years) requires a referendum.

# Borrowing

- Findings of the CSR included 'The City has significant capacity to issue more debt for current and future use'
- Municipal Finance Authority (MFA) Equipment Financing Program
  - Short term borrowing - 5 year term
  - Requires Council resolution
  - Variable interest rate, current interest rate is 1.38%

# Strategies used to minimize financial impact on users

- Provide five year payment plan for current users
- Use averaging for debt repayment and contribution to Equipment Replacement Reserve and new Cart Replacement Reserve
  - First five years - debt repayment costs, lower contributions to Equipment Replacement Reserve and new Cart Replacement Reserve
  - Years six to ten - higher contribution to Equipment Replacement Reserve and new Cart Replacement Reserve

# Implementation Strategy

# Implementation Strategy:

## In house Option

All routes Automated by Spring 2018

- Order carts November 2016 (delivered in two phases, hold price)
- Order six more trucks May 2017
- Two phase roll out:
  - Phase 1- March 2017, 1/3 of City
    - Carts delivered Feb 2017
    - Collections commence March 2017
  - Phase 2- March 2018, 2/3 of City
    - Carts delivered Feb 2018
    - Collections commence March 2018

# Implementation Strategy: Hybrid Option

All routes Automated by Summer 2017

- Order two more trucks Sept 2016
- Order carts November 2016 (delivered in one phase)
- One phase roll out:
  - Single phase – June 2017, whole City
    - Carts delivered May 2017
    - Collections commence June 2017



# Next Steps

# Council Direction

- Automated or Hybrid Business Model
- User or City owned carts
- Confirm funding strategy