

Automation of Sanitation Fleet

Why, how, how much...

Overview

- Current Operations
- Business Issue
- Why Automate?
- How to Automate?
- How much to Automate?

Current Operations

3 Waste Streams

Kitchen
Waste

Garbage

Recycling

Collected by
City Every
Week

Green Bin
(37 litre)

Collected
by City
once every
two weeks

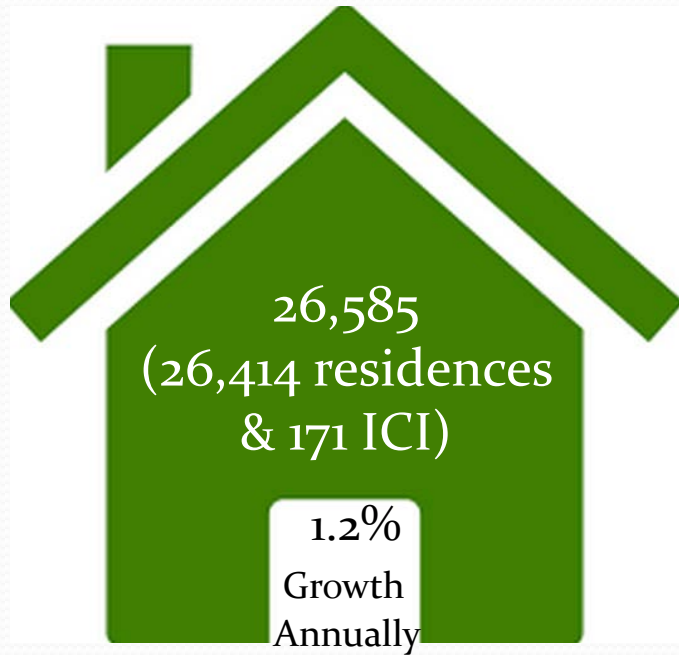
77 liter
container
(not
provided)

Collected by
contractor
every two
weeks
(alternating
with
garbage)

Yellow bag
(provided)
or clearly
marked
rigid
container



Current Operations



Current Operations

Fleet Problems

Status	Unit #	Make	Year of service	Scheduled Replacement year
Old "Surplus" Units	310	Shupak	1995	2010
	312	Shupak	1997	2012
To be replaced	313	Shupack	1997	2015
	314	Mac Labrie	1999	2014
Current fleet	315	Expeditor	2008	2023
	316	Expeditor	2008	2023
	430	Shupak- Split	2011	2026
	431	Shupak- Split	2012	2027
	432	Shupak- Split	2011	2026
	433	Shupak- Split	2012	2027

Current Operations- WSBC Orders

“...increased vulnerability to muscular skeletal injuries...”

- Workloads balanced
- Equipment modifications

	50					
	45					
	40			high risk		
	35					
Weight (lb)	30					
	25					
	20		moderate			
	15		risk			
	10					
	5	low risk				
	0					
		<1	1	2-3	4-5	6-7
		Frequency (per minute)				



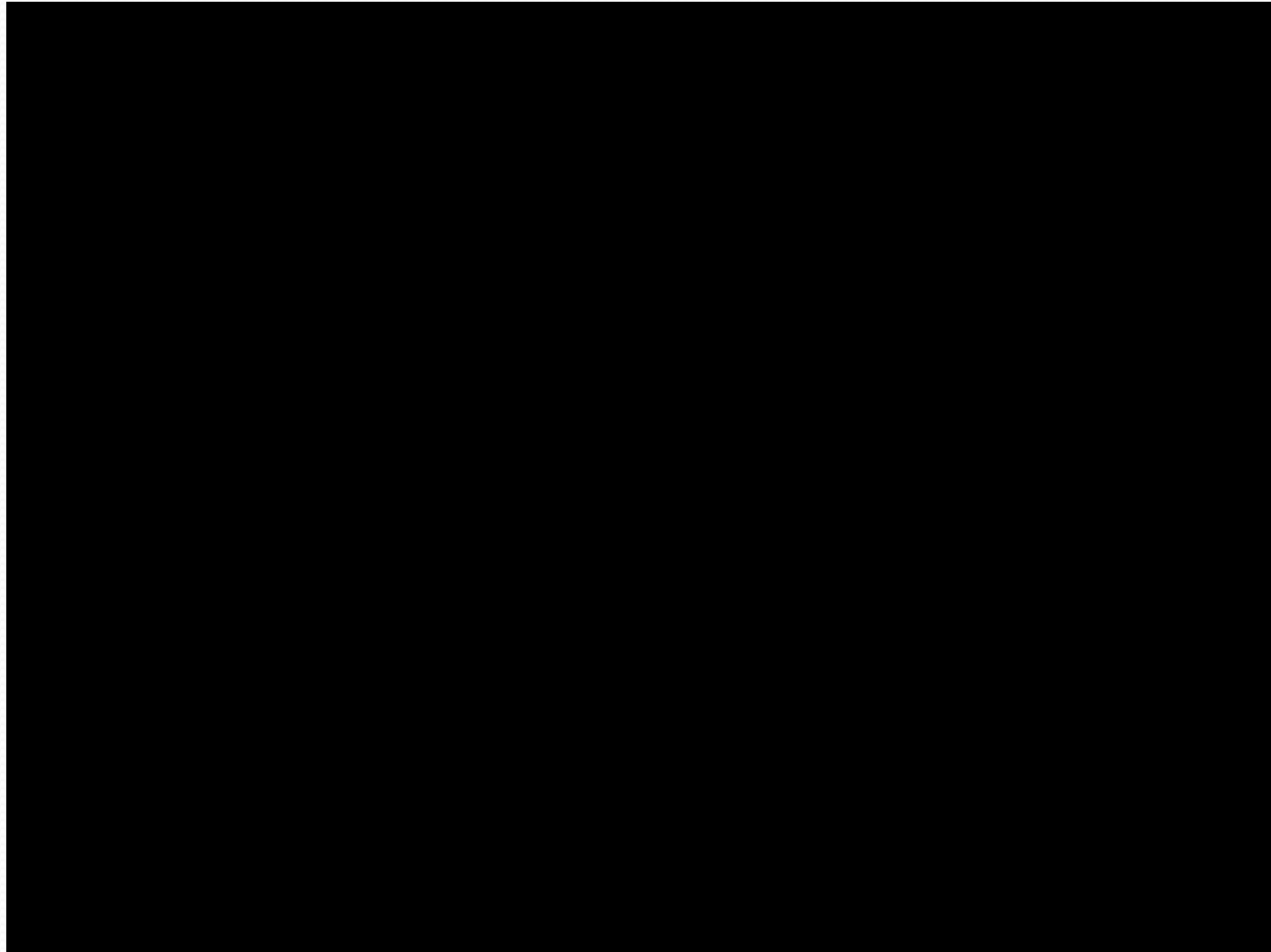
What is Manual Collection



Business Issue

1. Safety
2. Costs relating to recycling
3. Usability
4. Diversion is stagnant

What is Automation



Reason 1- Safety



6. Refuse and recyclable material collectors

The Job: Collect, compress and transport trash.

The Dangers: Heavy equipment, traffic, hazardous materials.

Fatality Rate*: 27.1

Total Fatalities in 2012**: 26

*Per 100,000 full-time equivalent workers.

**Based on 2012 preliminary data.

Reason 1- Safety

33
Injuries

Sprains
&
Strains

Staff

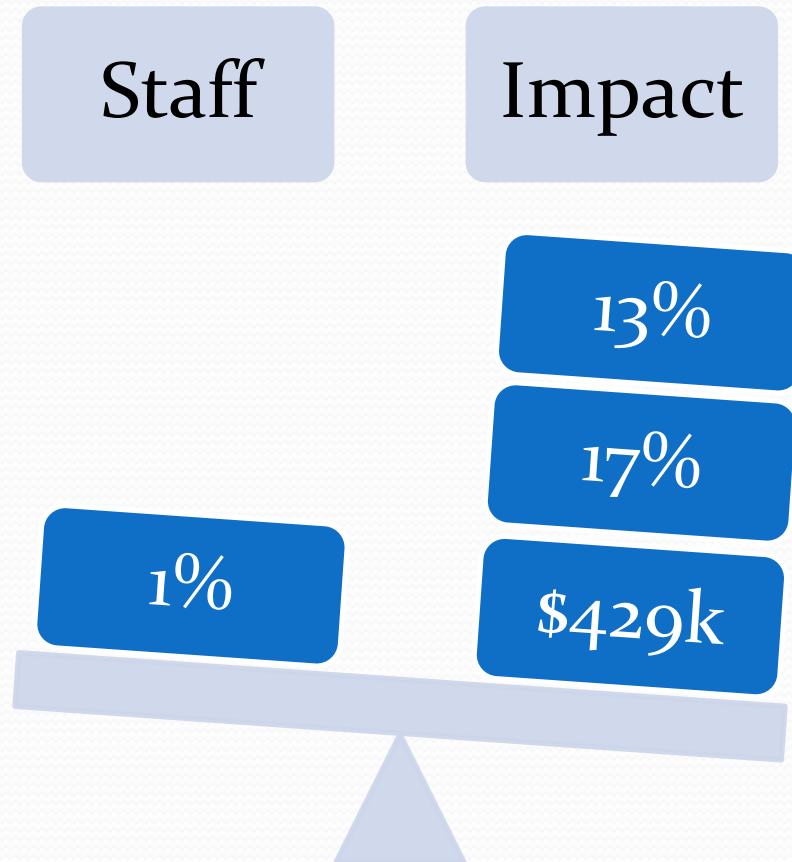
Impact

13%

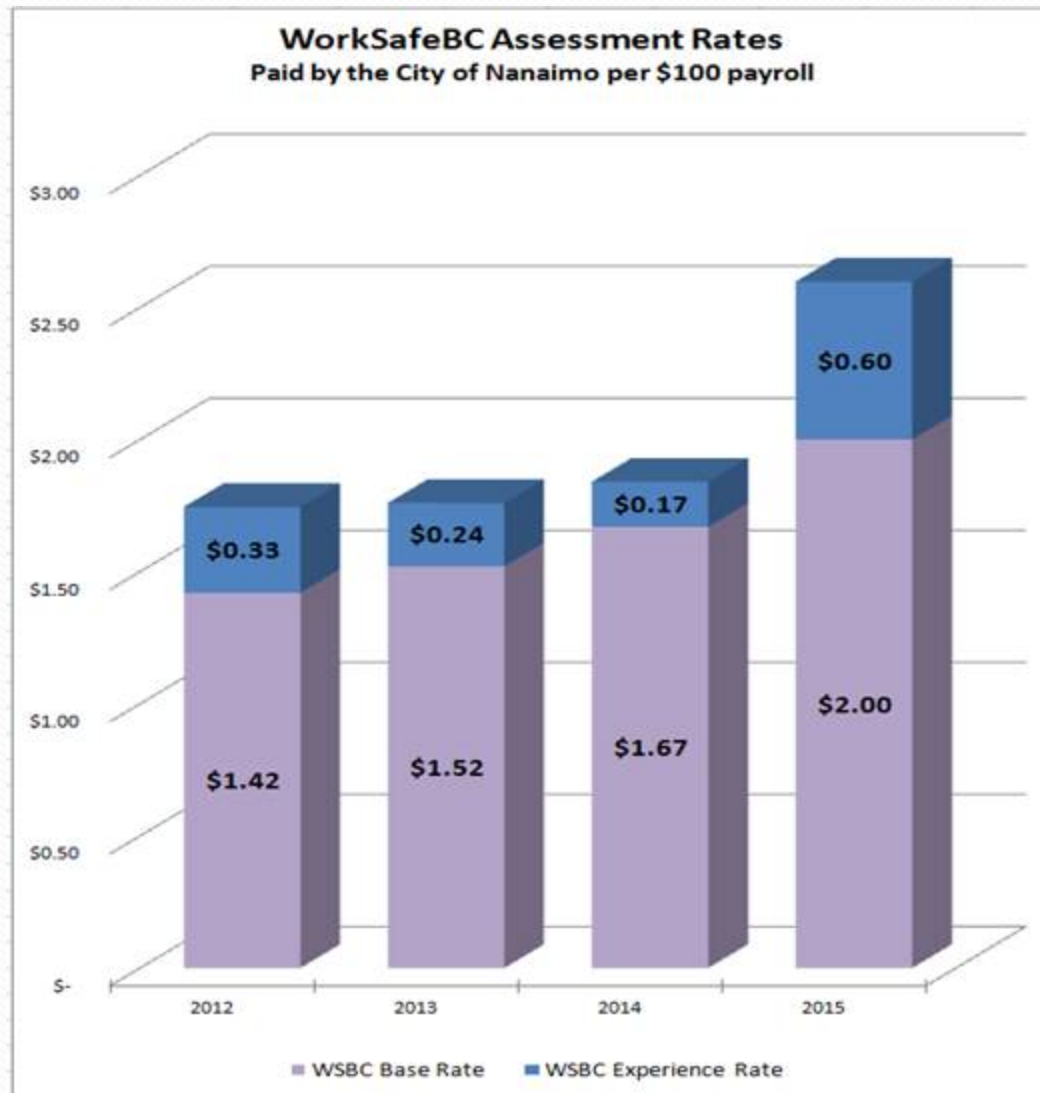
17%

\$429k

1%



Reason 1- Costs of Safety



Reason 2- Costs- Recycling Contract

\$660,000+ annually



Kitchen Waste
each week

Garbage/
Recycling
alternate weeks



Reason 3- Usability



Reason 4- Diversion



How to Automate

100% New fleet- 3 year implementation



8 New Automated Trucks

- 6 New full size trucks- two in 2015 & two each in 2016 & 2017
- 2 New small trucks- one each year in year two and three



Roll out over three years

- Full Automation achieved by 2018
- Recycling contract in house completely in 3 years
- Routes Automated Over 3 years

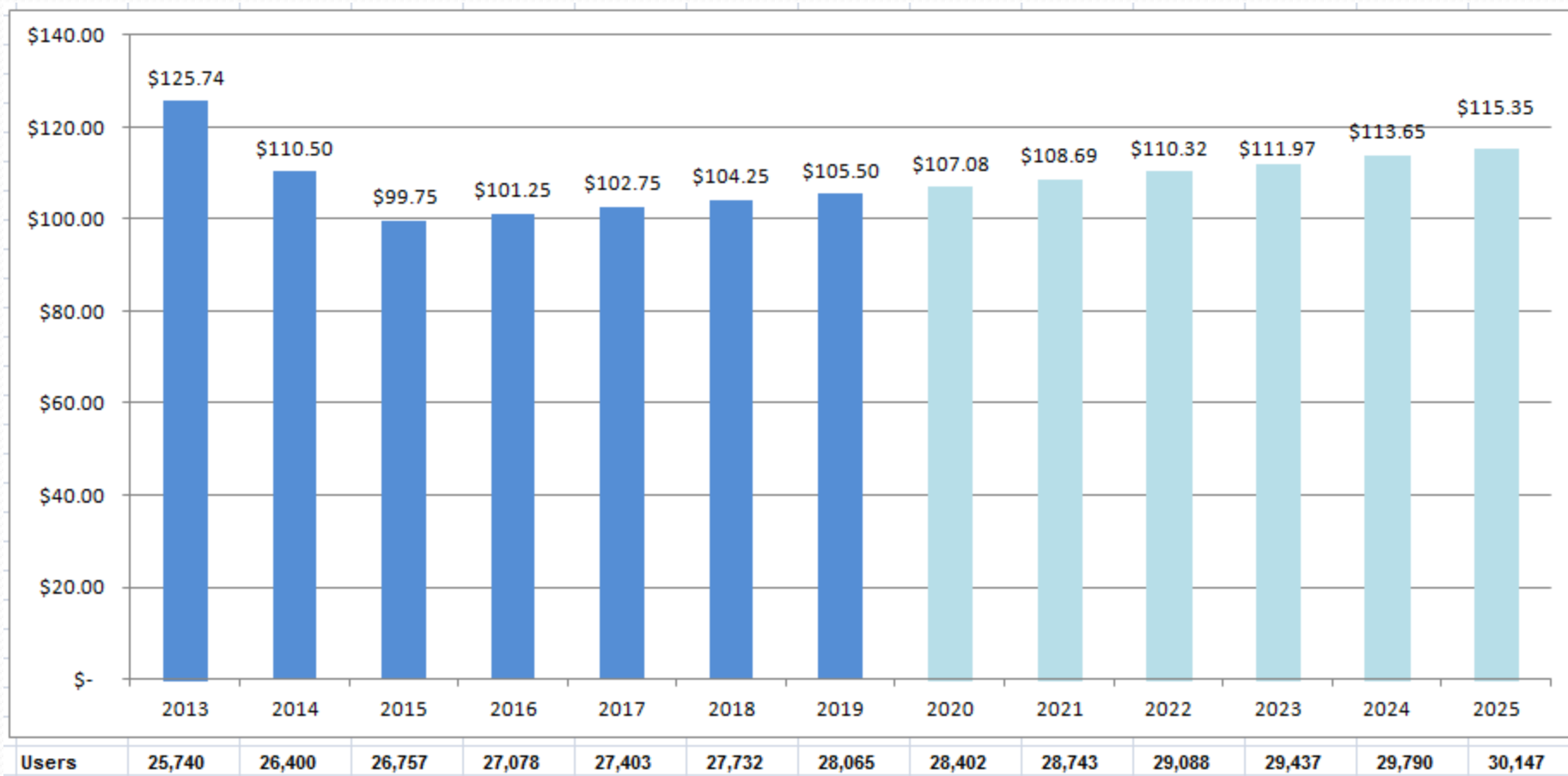


Fleet

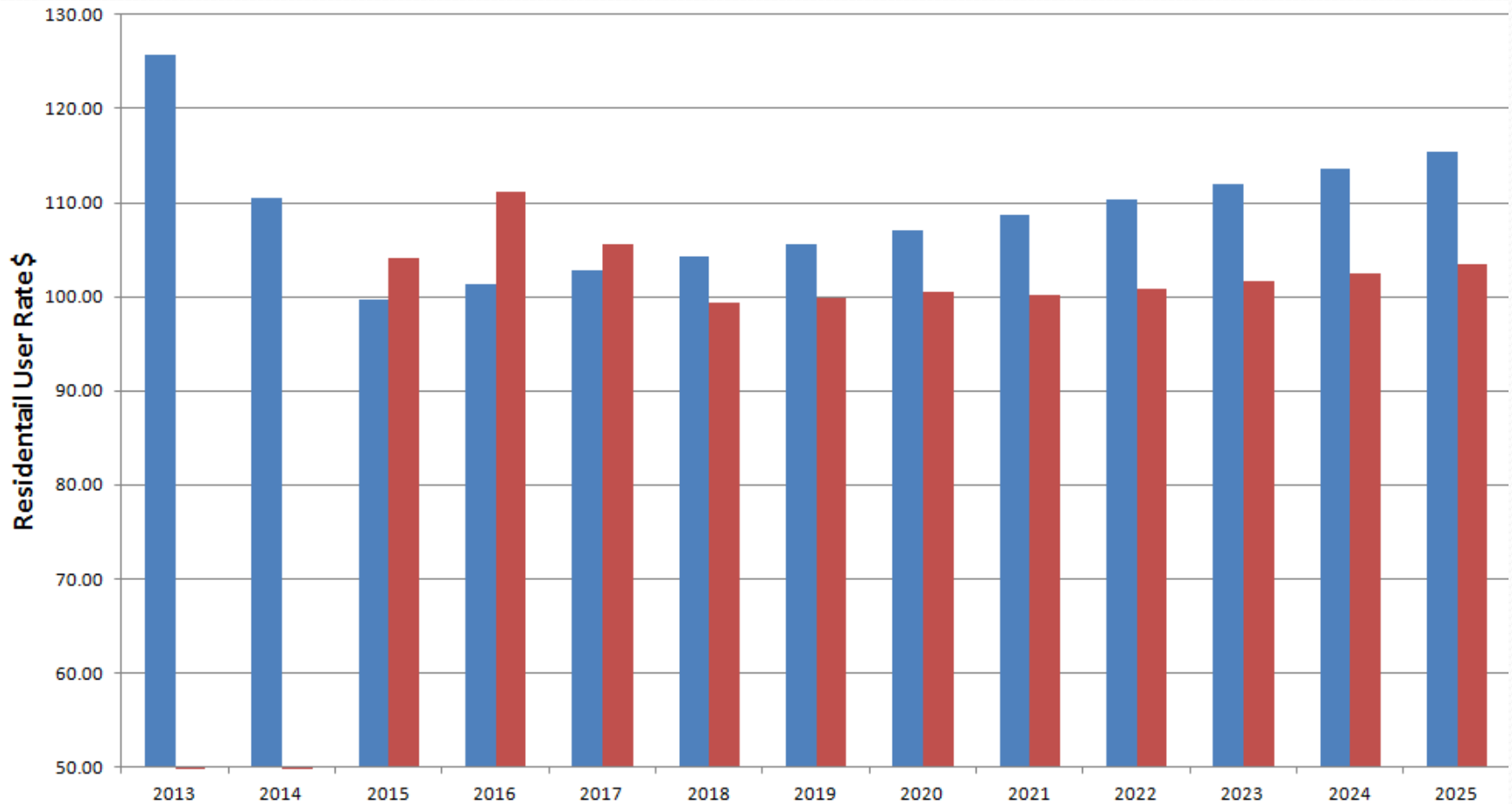
- 10 year estimated useful life
- \$400K for full size truck and \$241k for small truck
- Split packers sold off at \$80k starting year one

How much to Automate?

Residential User rate- Stay Manual



How much to automate?



Manual	125.74	110.50	99.75	101.25	102.75	104.25	105.50	107.08	108.69	110.32	111.97	113.65	115.36
Automation	-	-	104.11	111.19	105.66	99.37	99.80	100.55	100.10	100.90	101.72	102.55	103.39

Supplementary items



Automation

Yard And
Garden
Waste

Tiered User
Rates

CNG

Next steps

A few options...

1. Proceed to Automate the fleet as outlined
2. Replace 2 trucks with “Automation ready” trucks
3. Include in the Core Review as early as possible
4. Defer the purchase of new trucks until after the core review.



Questions