

# Waste Management Master Plan Unified Waste Utility

10 September 2018

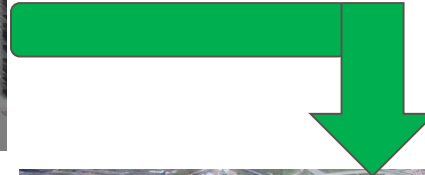




City of  
Saskatoon



# WHY







City of  
Saskatoon



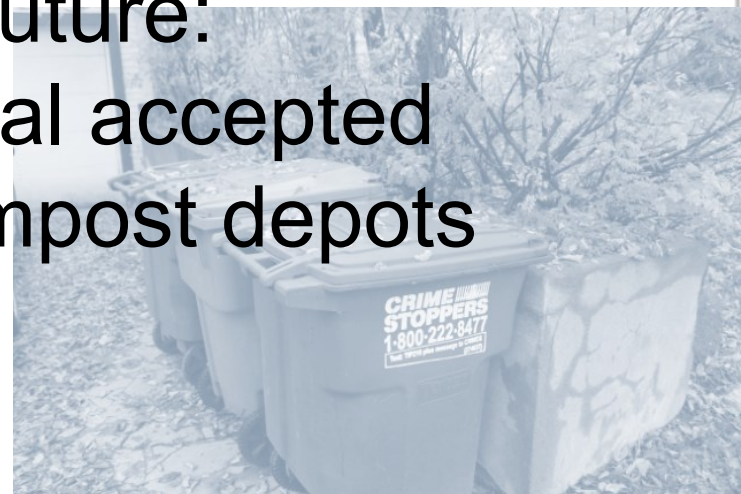
# WHY





# FRAME

- What is to be decided:
  - The Future Level of Service for Waste
  - The Method for Funding that Level of Service
- What is decided in the future:
  - List of organic material accepted
  - Future funding of compost depots
  - Multifamily sector







# PROCESS

- Comparative rates are provided
- Many other combinations of service levels
- Recommendation: values assessment





# VALUES

## Environmental

- Landfill life
- Waste diversion
- Climate change impact
- Soil and water quality impacts

## Financial

- Life cycle costs
- Generational rate equity
- Impact to capital, operating, and reserve budgets

## Social

- Employee and public safety
- Regulatory compliance
- Public image
- Convenience of services
- Regionalization
- Ability to Pay





# ALTERNATIVES

## Waste

- Weekly Collection
- Bi-Weekly Collection
- Seasonal Weekly
- Three Bin Sizes
- Three Costs



## Recycling

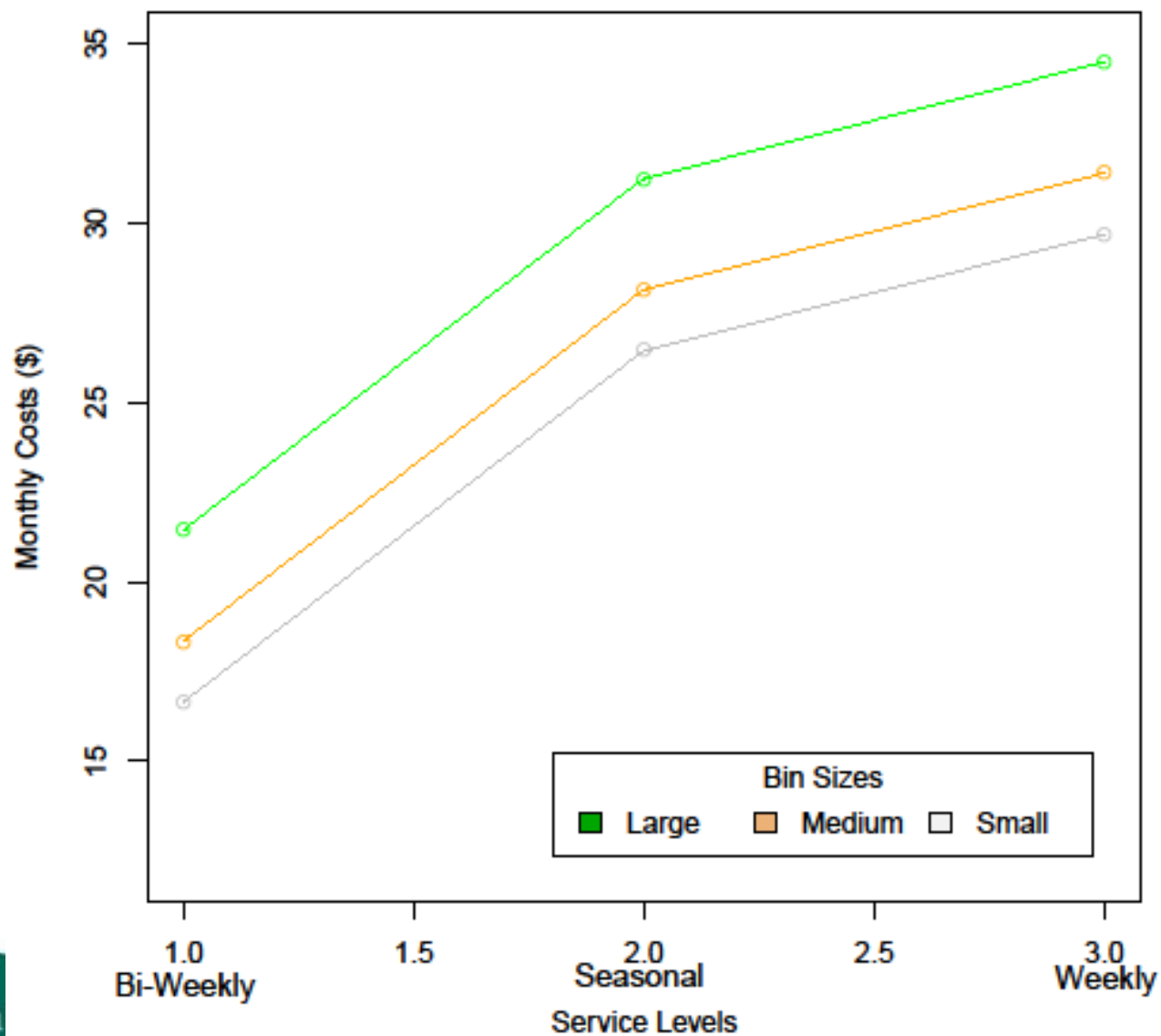
- No Change recommended

## Organics

- Weekly Collection
- Bi-Weekly Collection
- Seasonal Weekly
- Three Bin Sizes
- One Cost



### Bin Size Costs Both Services







# REASONING & RECOMMENDATION

Applying the values to the options:

- Bi-weekly (Option 1): lead the other options on social, economic, and environmental values.
- Bi-Weekly: lowest capital cost, shortest implementation time and provides more flexibility to be changed in the future.



# REASONING & RECOMMENDATION

A Utility is recommended:

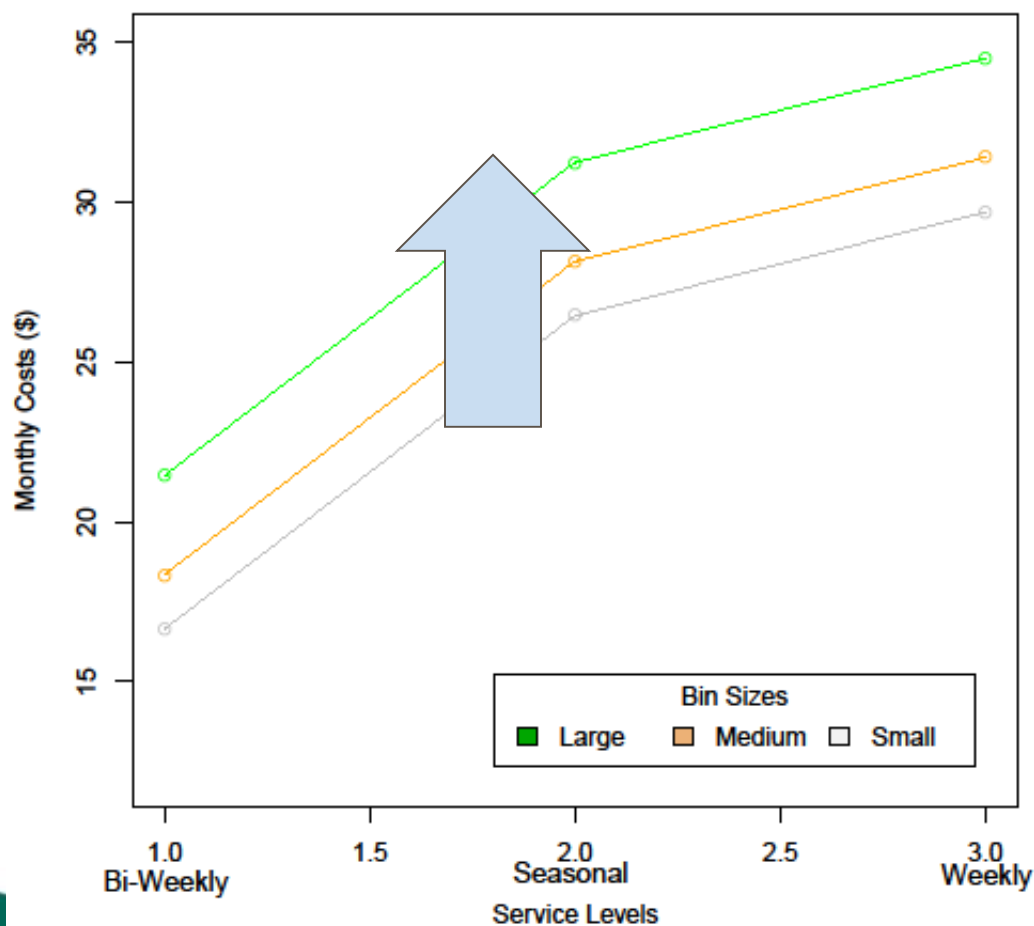
- Individual control of cost
- Individual benefit
- Encourages diversion
- Diversion behaviour controls rates
- Resolves the financial un-sustainable business model



# RATE PHILOSOPHY

## Option 1

Bin Size Costs Both Services

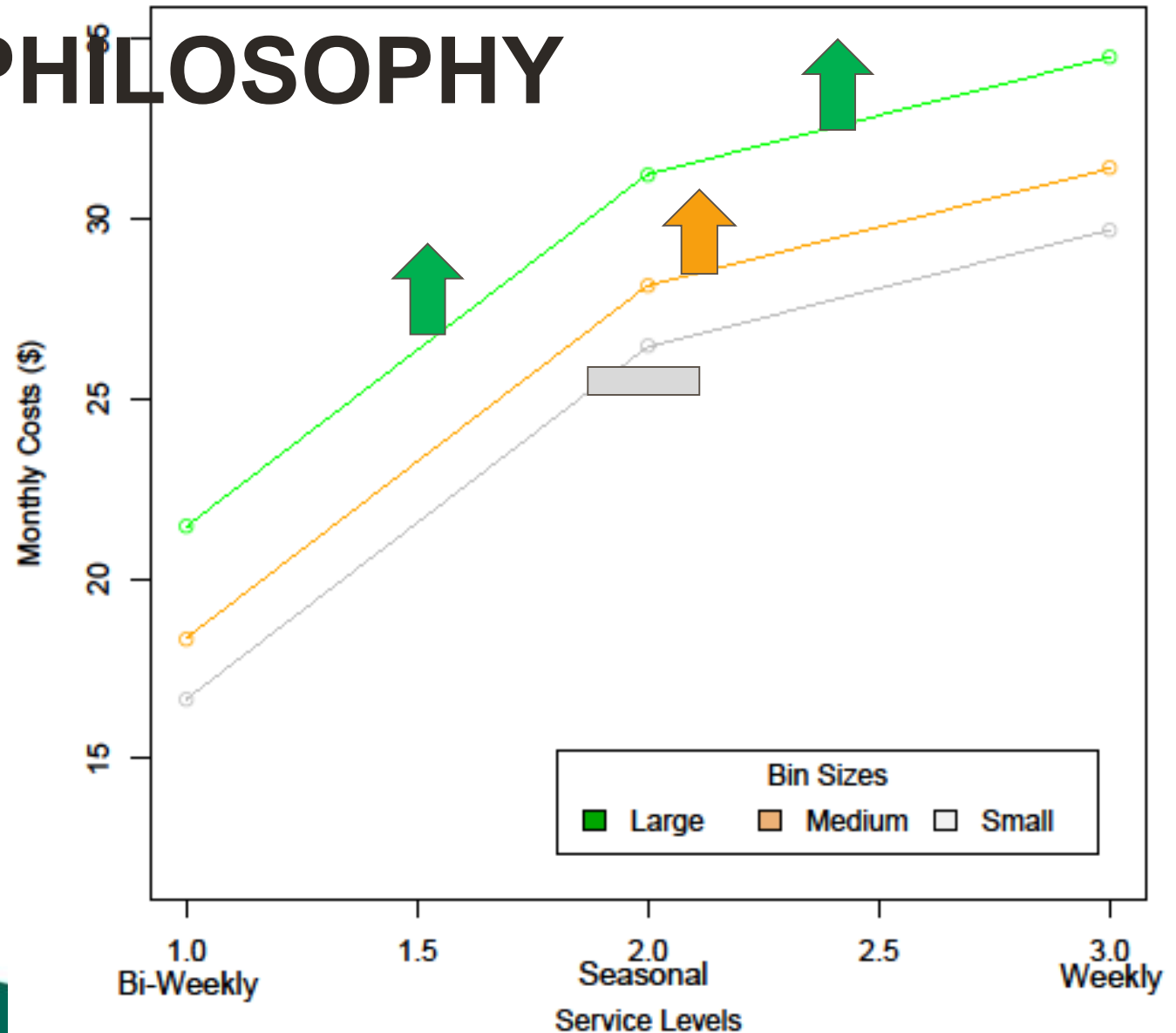




## Bin Size Costs Both Services

# RATE PHILOSOPHY

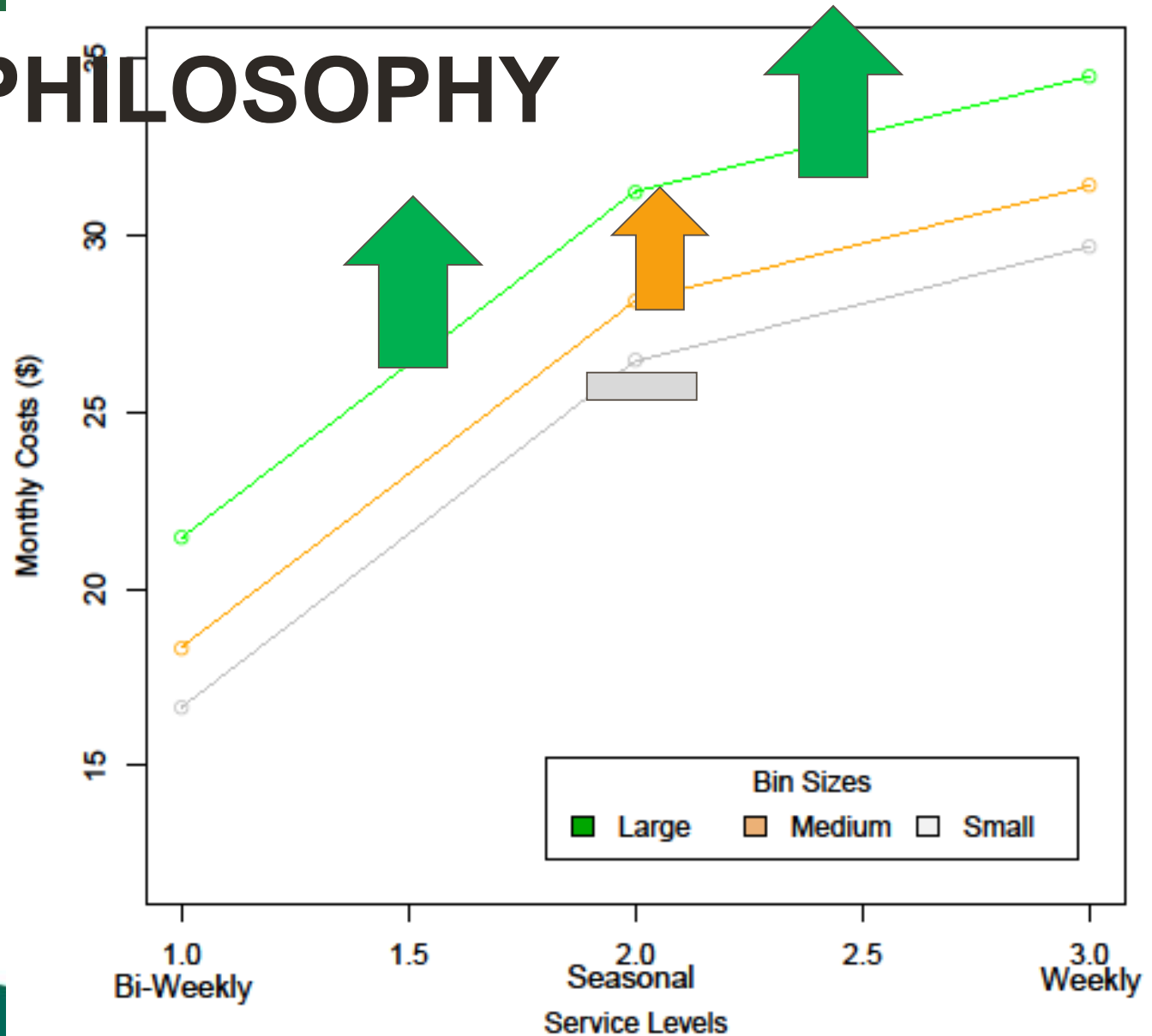
Option 2



## Bin Size Costs Both Services

# RATE PHILOSOPHY

Option 3





# NEXT STEPS

- More detailed service decisions on organics at the award of the processing RFP
- More detailed budgeting by administration to finalize rates once a philosophy and level of service is known
- Public notice for borrowing
- Commencement of implementation





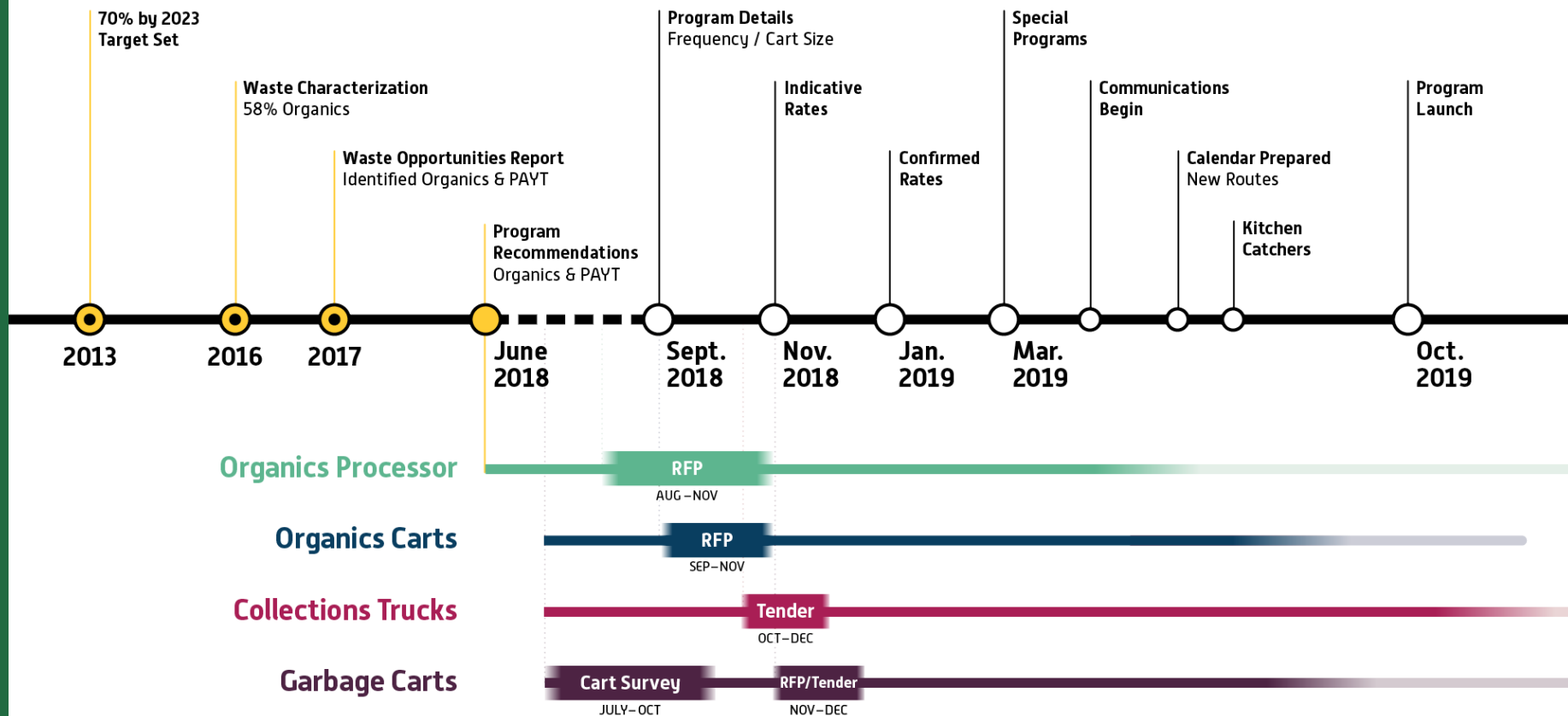
# DO NOTHING?

- 40 years vs. 63 years
- Funded vs. Unfunded Replacement
- 12,000 vs. 25,000 organics tonnes diverted
- 0 additional vs. 11,000 tonnes CO<sub>2</sub>e reduced
- 23 million vs. 18 million annually





# NEXT STEPS





# FUTURE (2020)

- Three carts at single family homes
- Bi-weekly collection organics
- Bi-weekly collection waste
- Single charge on utility bills
- Indicative mill rate reduction





# QUESTIONS?



# Analytics 1

DateKey

01/01/2017 31/12/2017

Specific Mass of Garbage

120

Collections Population

1869843

Collections Sample

1666760

Collections Sample

89.14%

Avg. Collections per Trip

293

St. Dev. Collections per Trip

107

Landfill Tonnage Pop.

46,079

Landfill Tonnage Sample

40,272

Tonnage Sample

87.40%

Avg. Mass per Tip (kg)

25.23

St. Dev. Mass per Tip

7.35

Average Volume per Tip (L/tip)

210.25

St. Dev. Vol/Tip

61.24

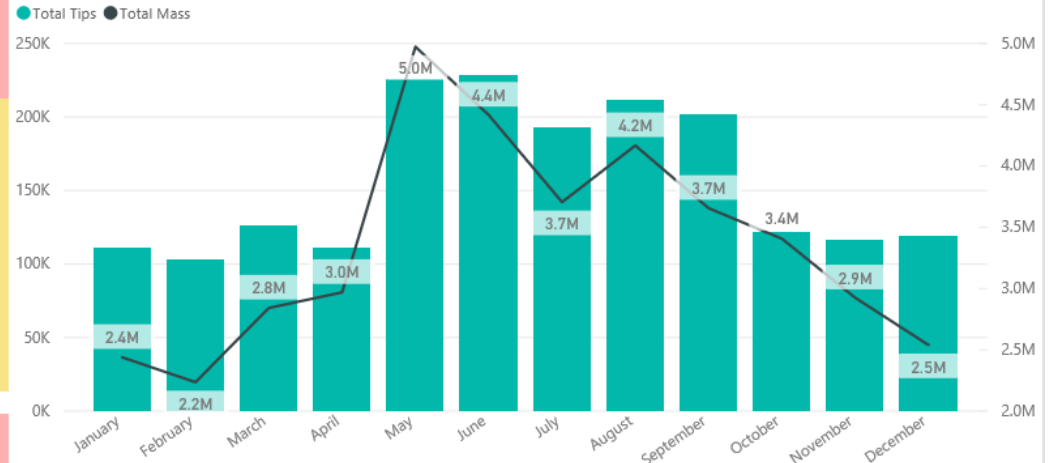
Current Container Utilization

58.4%

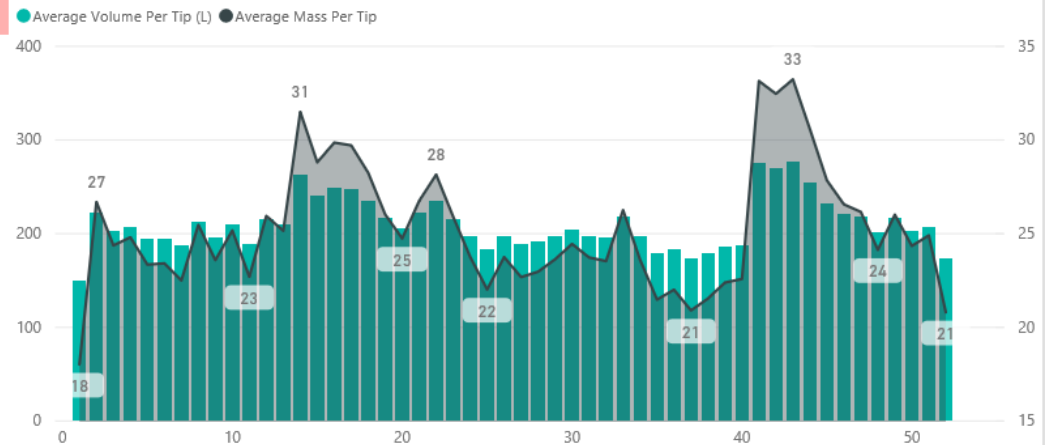
Population

70100

Total Tips and Total Mass by Month



Average Volume Per Tip (L) and Average Mass Per Tip by Week of Year



3.67

99 Percent Co...

2.79

95 Percent Co...

Small Bin Size (L)

180

Medium Bin Size (L)

240

Large Bin Size (L)

360

31.21%

Probability Tip ...

21876

Number of Cu...

37.59%

Probability Tip ...

26348

Number of Cu...

31.21%

Probability Tip ...

21876

Number of Cu...

# Analytics 2

DateKey

01/01/2017 31/12/2017

Specific Mass of Garbage

110

Average Volume per Tip (L/tip)

216.29

St. Dev. Vol/Tip

43.63

Current Container Utilization

60.1%

Collections Population

450393

Collections Sample

421556

Collections Sample

93.60%

Avg. Collections per Trip

273

St. Dev. Collections per Trip

88

Landfill Tonnage Pop.

10,962

Landfill Tonnage Sample

9,815

Tonnage Sample

89.54%

Avg. Mass per Tip (kg)

23.79

St. Dev. Mass per Tip

4.80

71668

Number of Collection Points

Small Bin Size (L)

180

99 Percent Co...

Medium Bin Size (L)

240

4.40

95 Percent Co...

Large Bin Size (L)

360

20.28% 14531

Probability Tip ... Number of Cu...

50.39% 36110

Probability Tip ... Number of Cu...

29.29% 20991

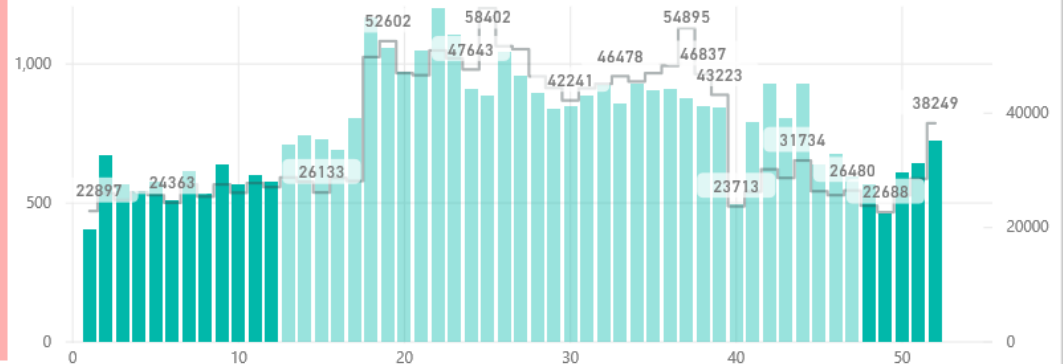
Probability Tip ... Number of Cu...

99.95%

Probability Check...

Total Mass, Total Tips and First MonthName by Week of Year

● Total Mass ● Total Tips



Total Mass, Max Mass Per Tip (kg), Upper StDev Mass per Tip, Average Mass Per Tip, Lower StDev Mass per Tip, Min Mass Per Tip (kg) a...

● Total Mass ● Max Mass Per Tip (kg) ● Upper StDev Mass per Tip ● Average Mass Per Tip ● Lower StDev Mass per Tip ● Min Mass Per Tip (kg)

