

# FOGO Webinar

15 May 2020

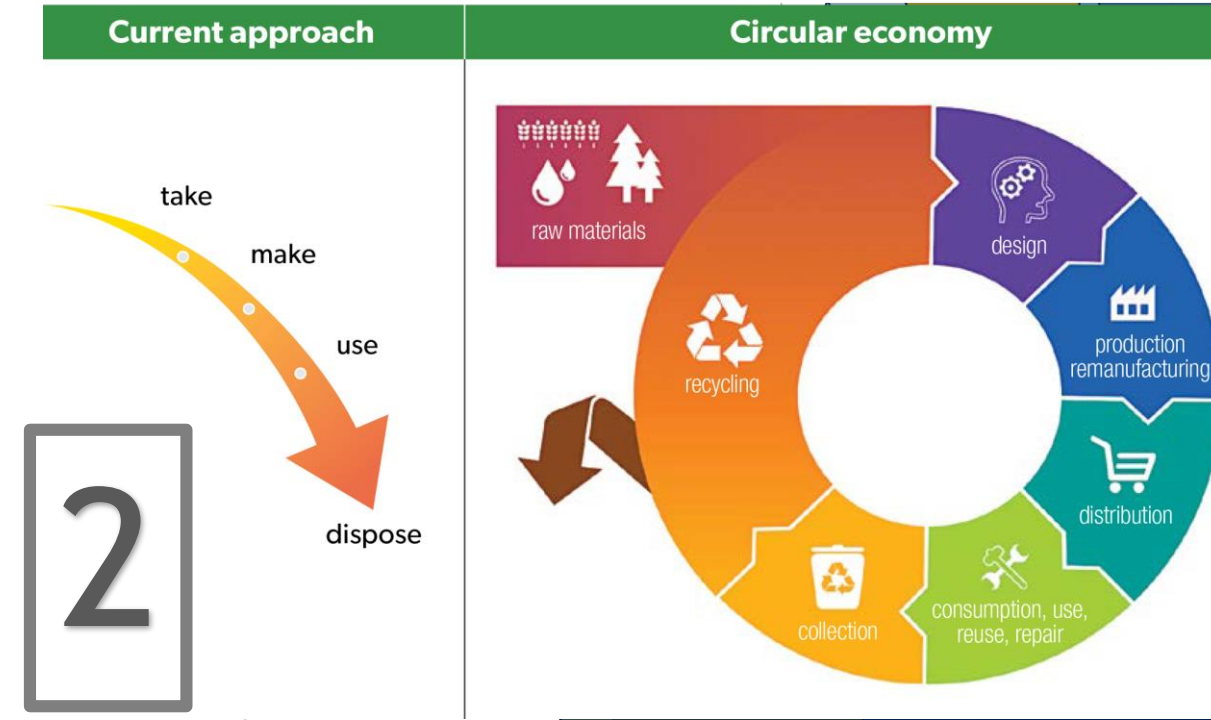
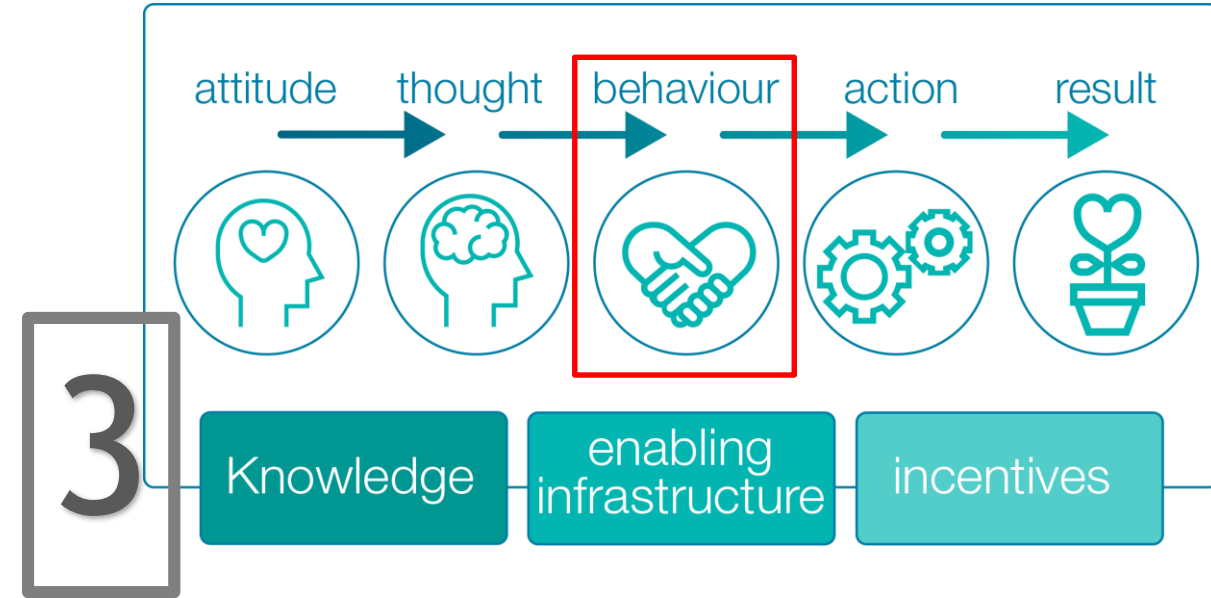
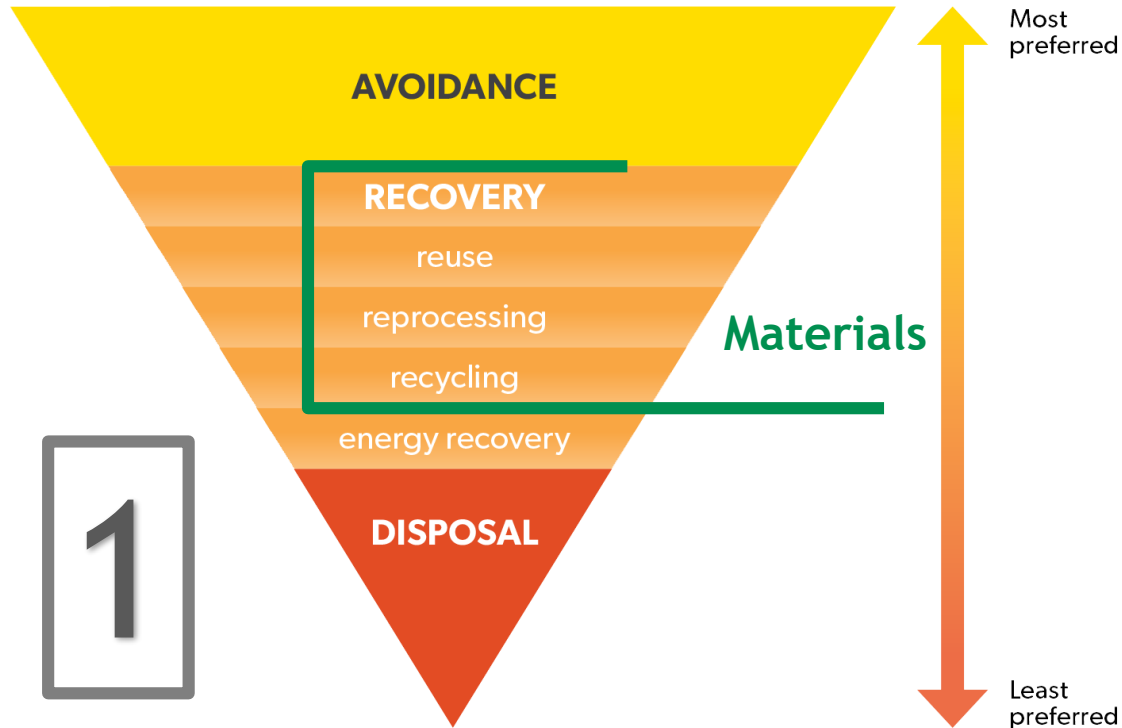
Marcus Geisler



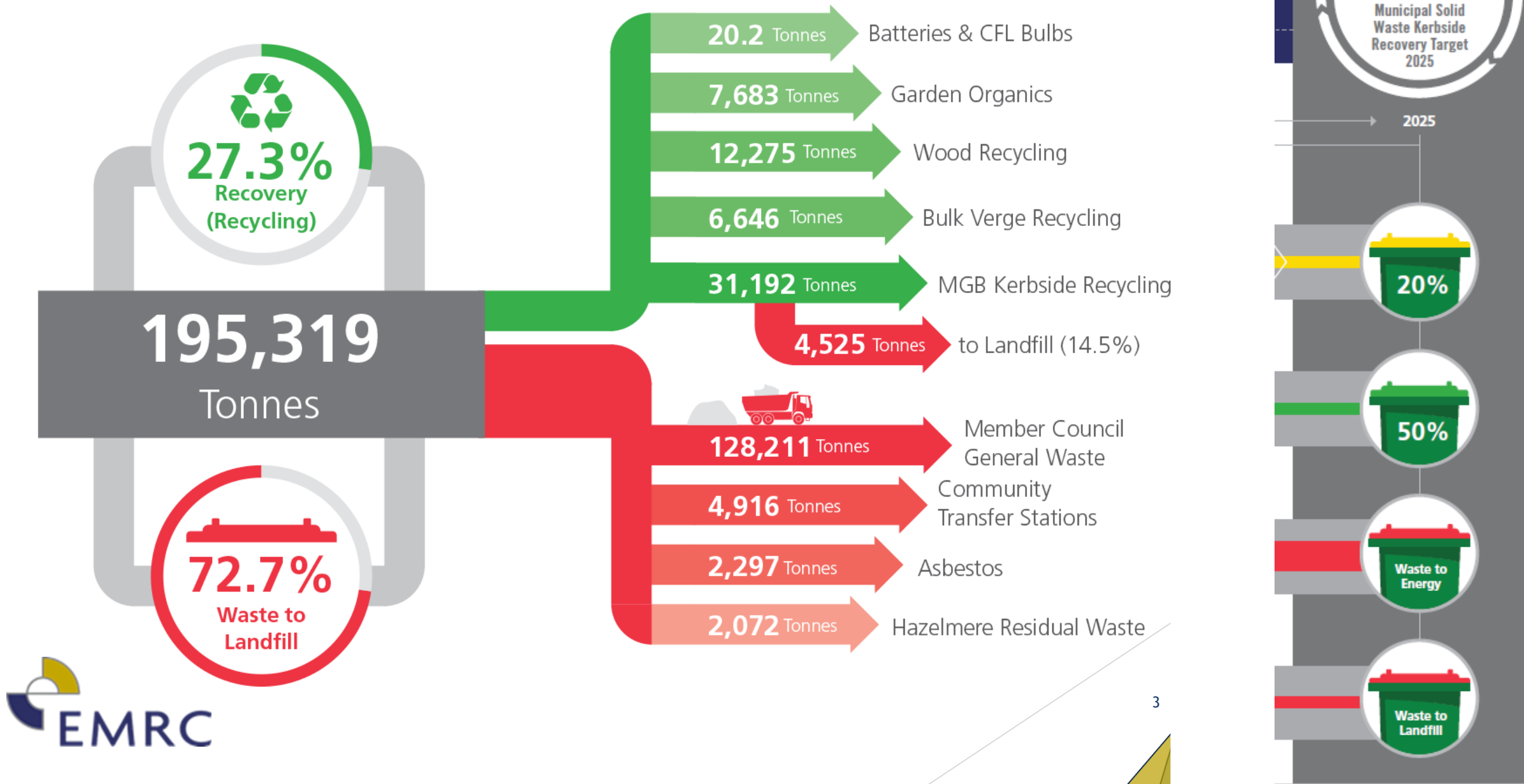
*A solid foundation for a bright future*



# WARR 2030 Guiding Concepts



# EMRC 2018/19 waste statistics



# EMRC KERBSIDE BIN

Kerbside bin collection is approx. 75% of waste generated in households (MSW)

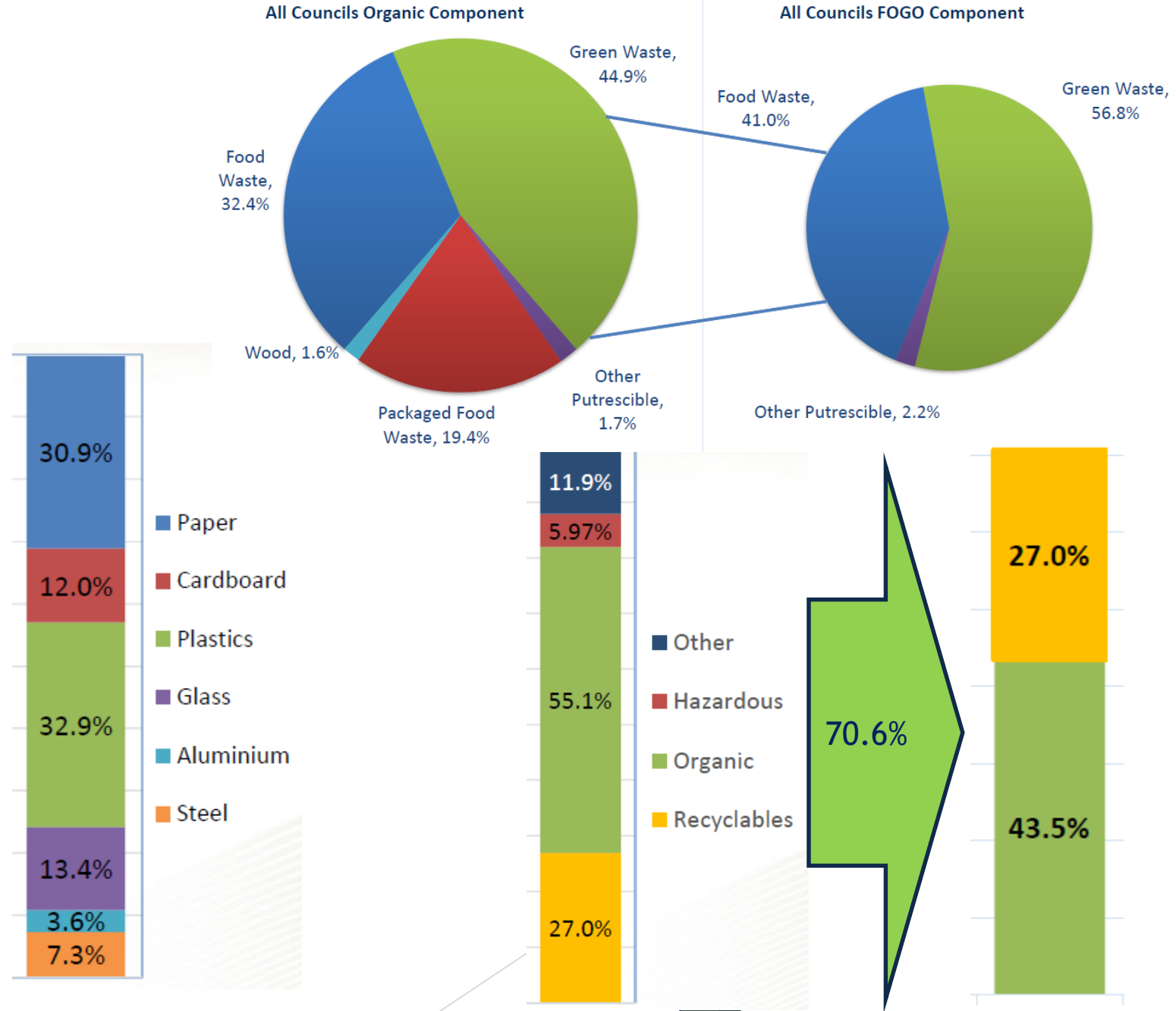
EMRC region 2019 bin audit:

- Waste generation average = 14.6 kg (*per household, per week*)
- Total organics 55.1%  
Food /Garden organics 43.5%
- Recyclables in General Waste Bin is 27%
- Theoretical Recovery Rate is 70.6%
- CDS count 5.2 eligible containers per week = 270 per annum



• Total Organics 55.1% All Councils

• Total FOGO 43.5% of Material Audited





## FOOD ORGANICS & GARDEN ORGANICS (FOGO) RECOVERY STRATEGY

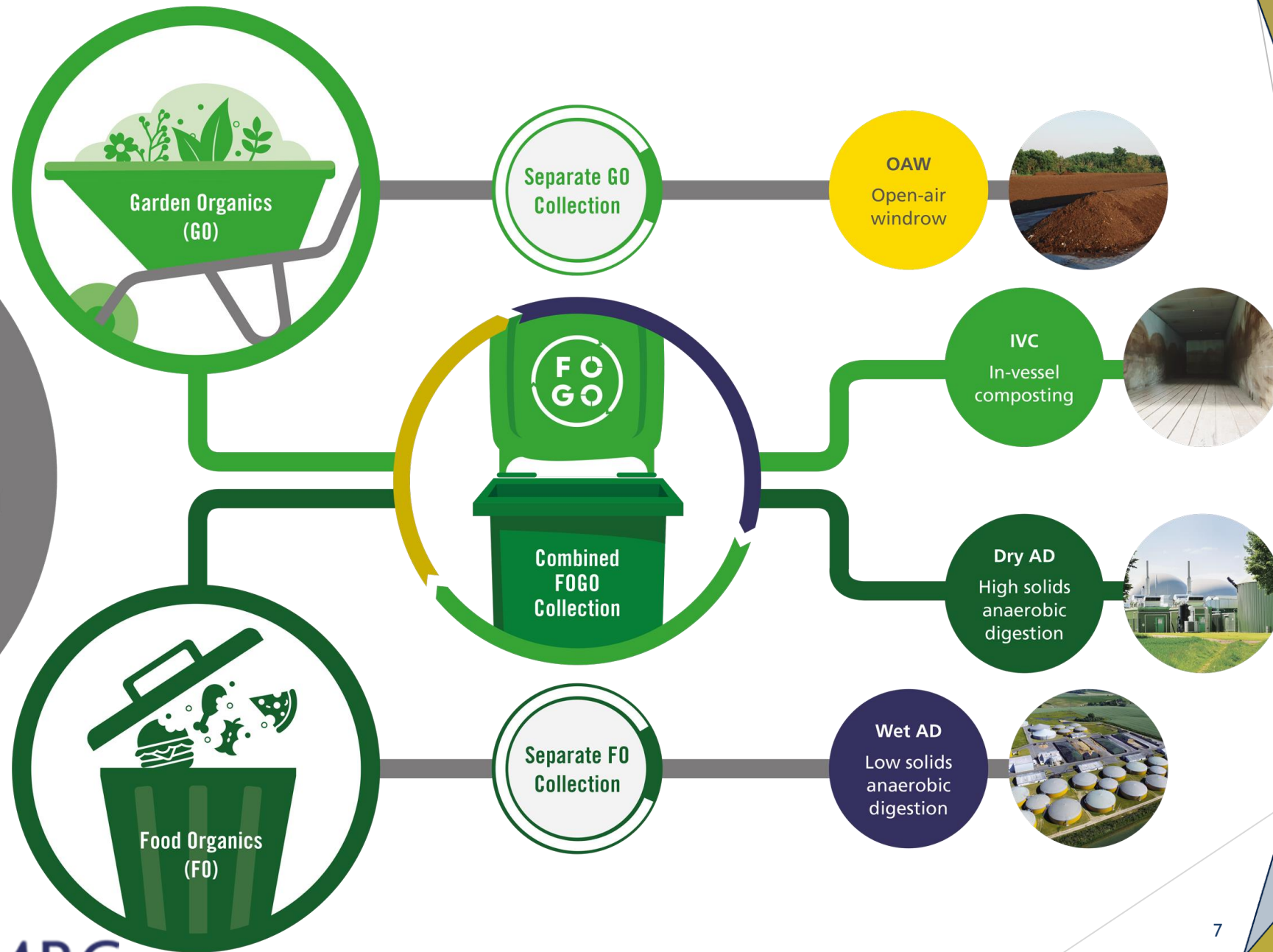


Advancing Perth's Eastern Region ➡





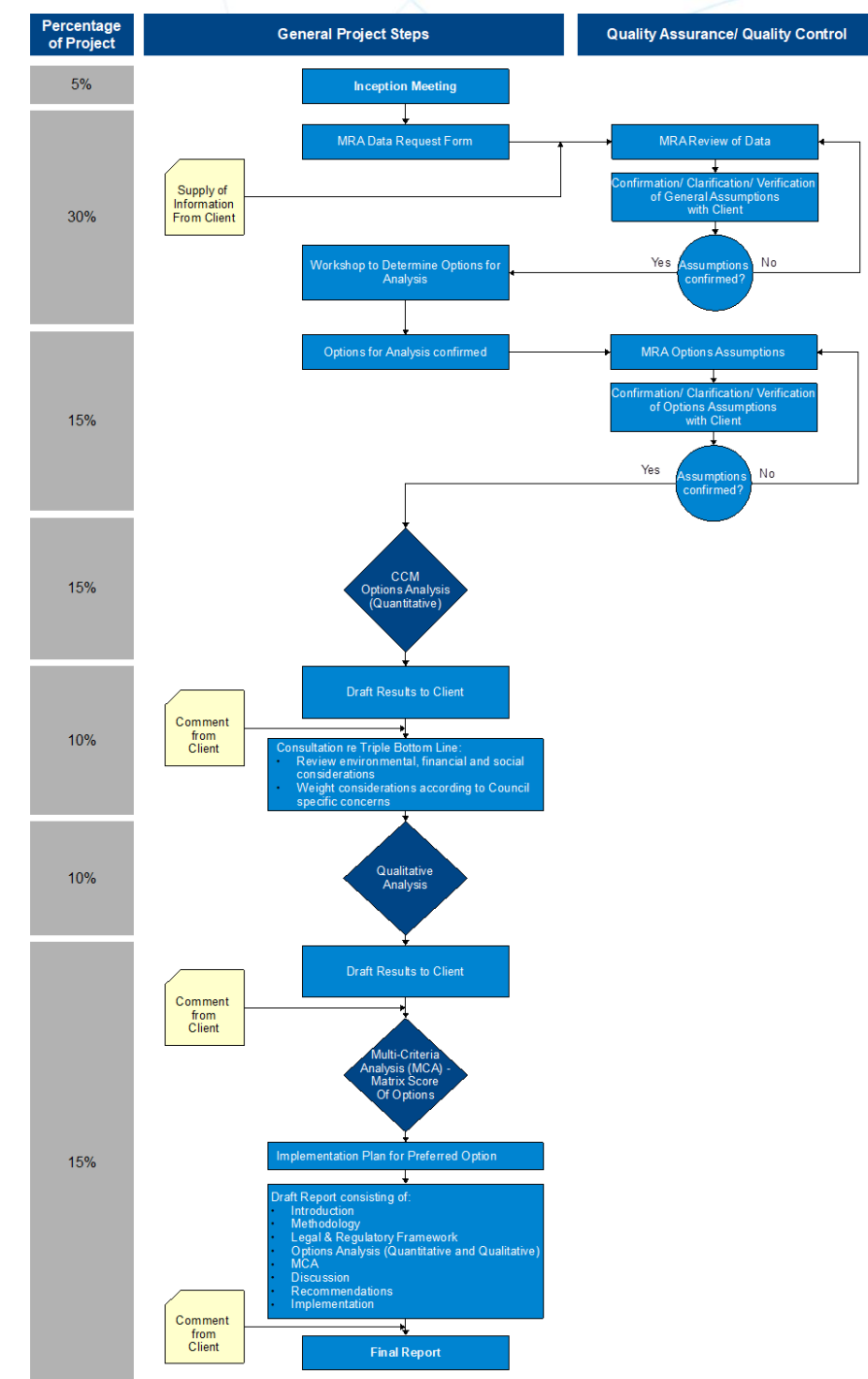
Industrial Scale Processes, Commercial Model and Costing



# Cost Benefit Analysis – Consolidated Cost Model (CCM)

The outputs of the CCM analysis are:

- Total system costs
  - Cost per household (\$/hhld/annum)
  - NPV (\$m) across a 7-year planning horizon
  - Cost per tonne (\$/t)
- Recovery rate (%)
- Greenhouse gas emissions (t CO<sub>2</sub>-e); and
- Vehicle kilometres travelled (km)



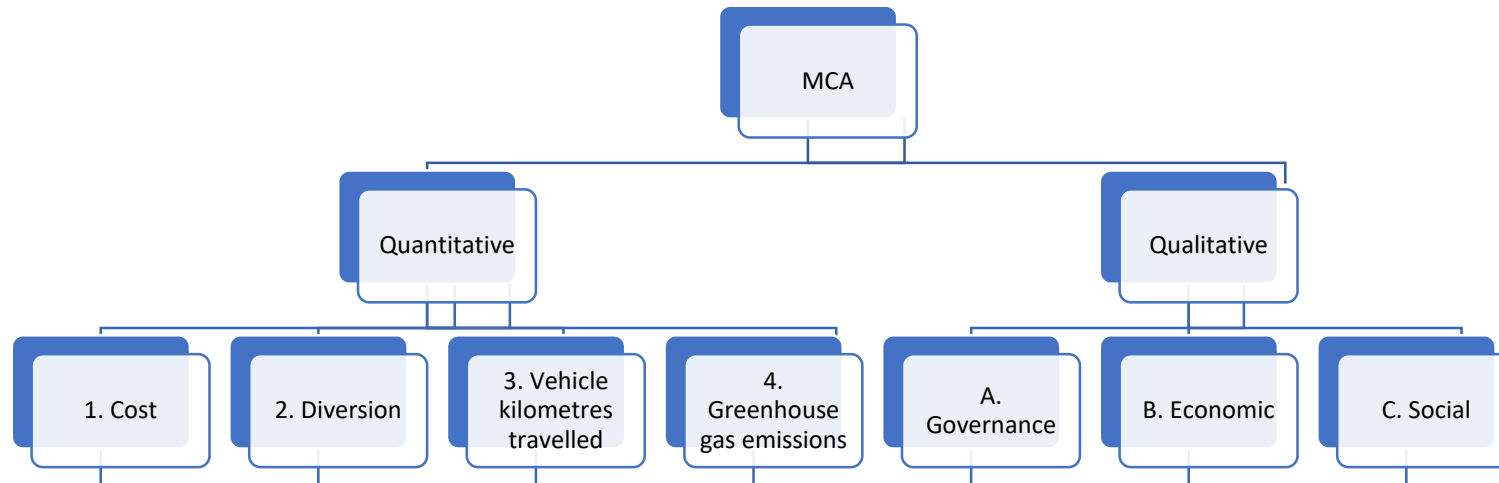


# Multicriteria Analysis

Ranks option based on an assessment of Council criteria and weightings

Combines :

- Quantitative assessment of options (CCM)
- Qualitative assessment of options (across the quadruple bottom line)

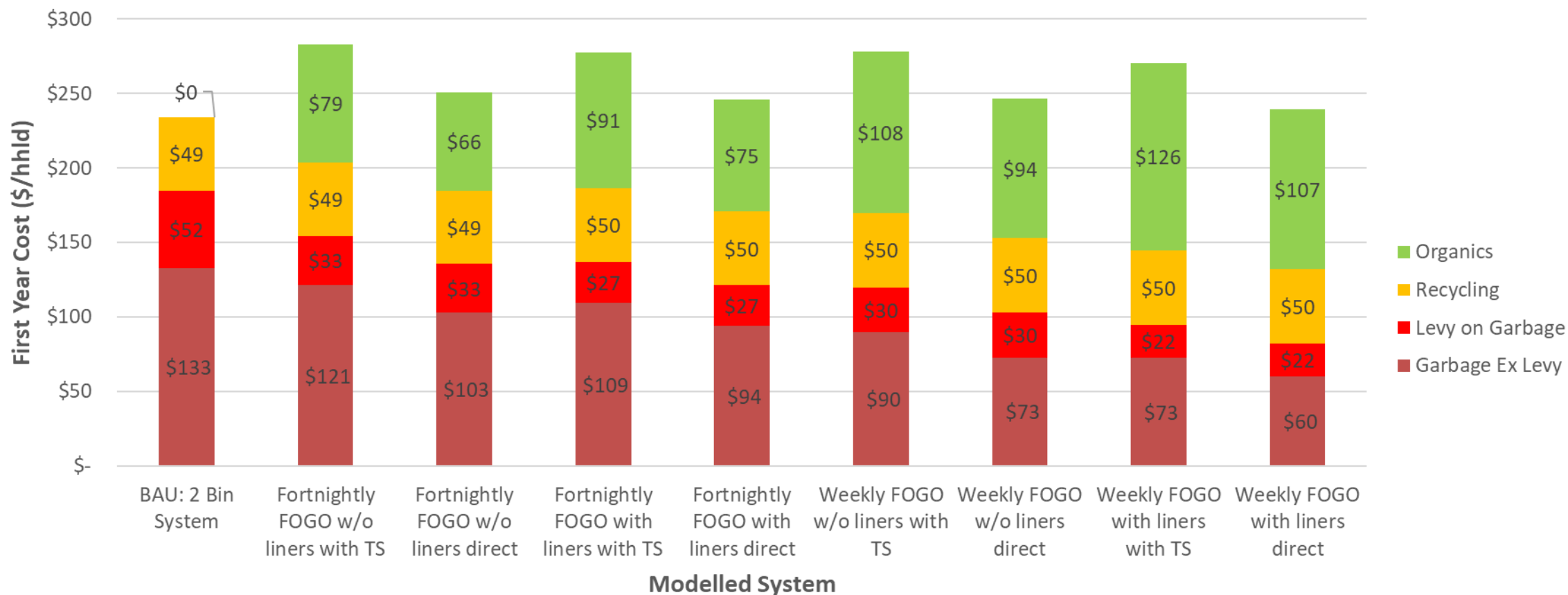


# List of Options Under Consideration for EMRC Councils

Option	Description	Household collection service	Caddies/Liners ?	Transfer Station for FOGO
1	Business As Usual (BAU)	Weekly Garbage 240L Fortnightly Recycling 240L (weekly for Bassendean) No kerbside organics service (except Bayswater with Fortnightly GO 240L)	Not applicable	Not applicable
2	Fortnight FOGO without Liners with Transfer station	Weekly Garbage 140L/240L Fortnightly Recycling 240L (weekly Bassendean) Universal Fortnightly FOGO 240L	Caddy liners <b>not</b> provided	Yes
3	Fortnight FOGO without Liners direct to facility		Caddy liners <b>not</b> provided	No
4	Fortnight FOGO with Liners with Transfer station		Caddy liners provided	Yes
5	Fortnight FOGO with Liners direct to facility		Caddy liners provided	No
6	Weekly FOGO without Liners with Transfer station		Caddy liners <b>not</b> provided	Yes
7	Weekly FOGO without Liners direct to facility	Fortnightly Garbage 140L/240L Fortnightly Recycling 240L (weekly Bassendean) Universal <u>Weekly FOGO 240L</u>	Caddy liners <b>not</b>	No
8	Weekly FOGO with Liners with Transfer station		<u>Caddy liners provided</u>	Yes
9	Weekly FOGO with Liners direct to facility		Caddy liners provided	No

# Average Costs per Household per Annum – Council X

## With EMRC SWC

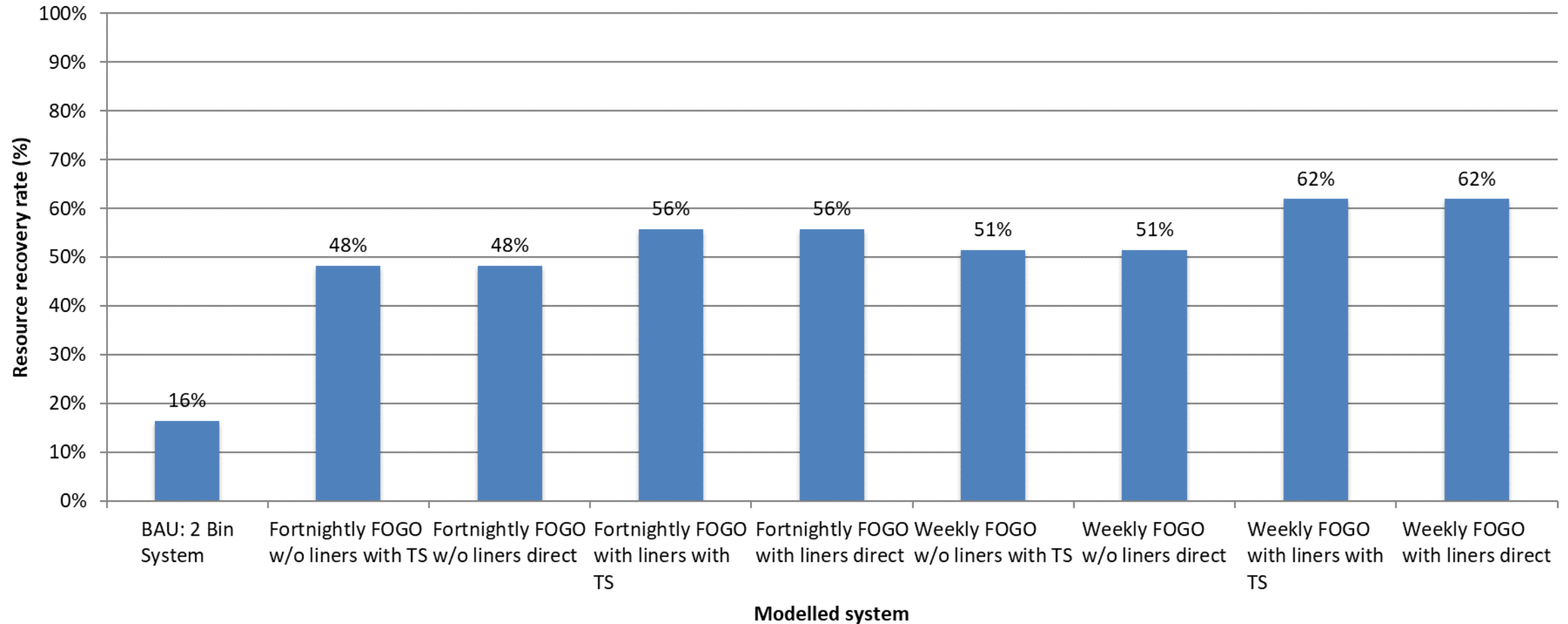


# CCM Analysis: Cost/HH/Year

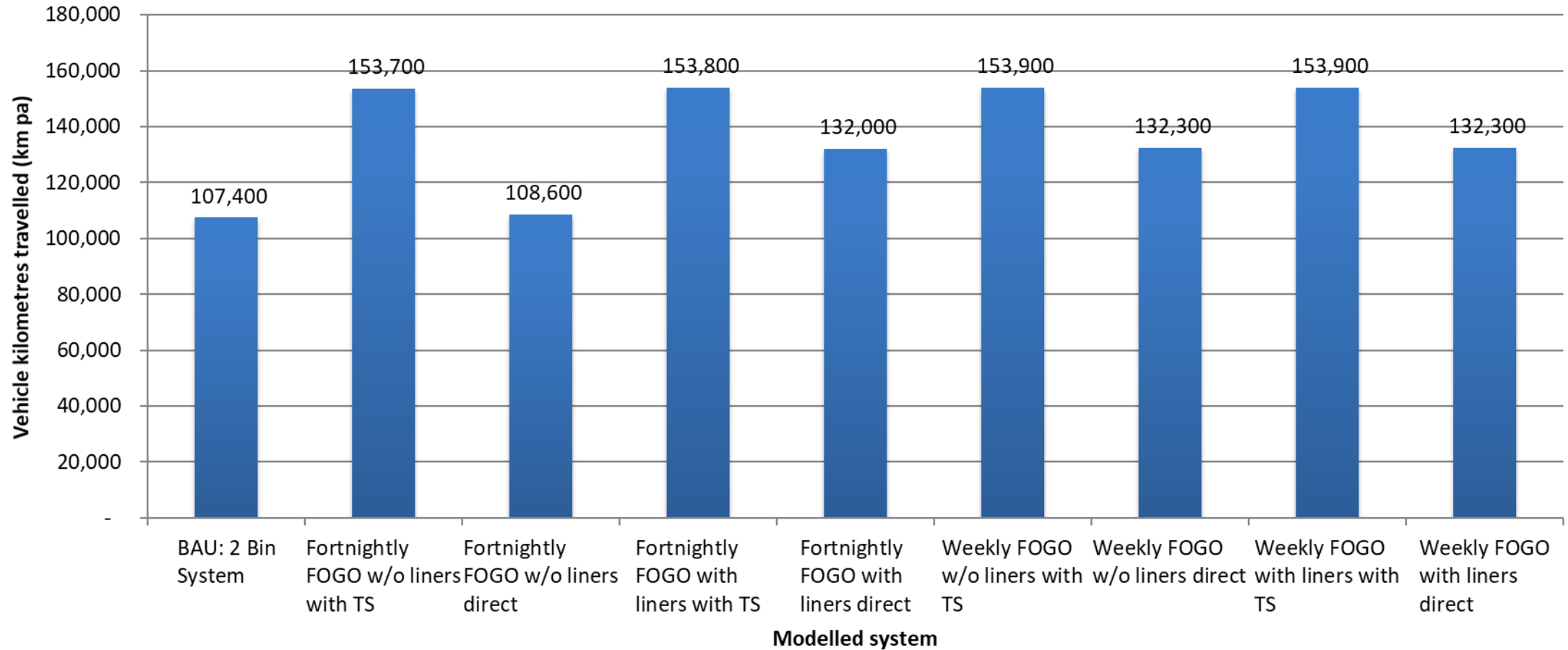
System Options	6 EMRC member councils					
	Cost/hh	Cost/hh	Cost/hh	Cost/hh	Cost/hh	Cost/hh
BAU: 2 Bin System (3 bin Bayswater)	\$183	\$205	\$172	\$200	\$190	\$182
Fortnightly FOGO w/o liners with TS	\$241	\$269	\$213	\$257	\$258	\$207
Fortnightly FOGO w/o liners direct	\$213	\$236	\$190	\$227	\$234	\$205
Fortnightly FOGO with liners with TS	\$239	\$267	\$210	\$253	\$257	\$209
Fortnightly FOGO with liners direct	\$211	\$235	\$188	\$223	\$233	\$203
Weekly FOGO w/o liners with TS	\$239	\$267	\$211	\$255	\$256	\$210
Weekly FOGO w/o liners direct	\$210	\$234	\$188	\$226	\$232	\$205
Weekly FOGO with liners with TS	\$237	\$265	\$207	\$250	\$255	\$212
Weekly FOGO with liners direct	\$209	\$232	\$185	\$221	\$231	\$203

**Note: Differential Cost  
\$13 to \$41 /HH/year**

# Resource Recovery Rates – Council Y

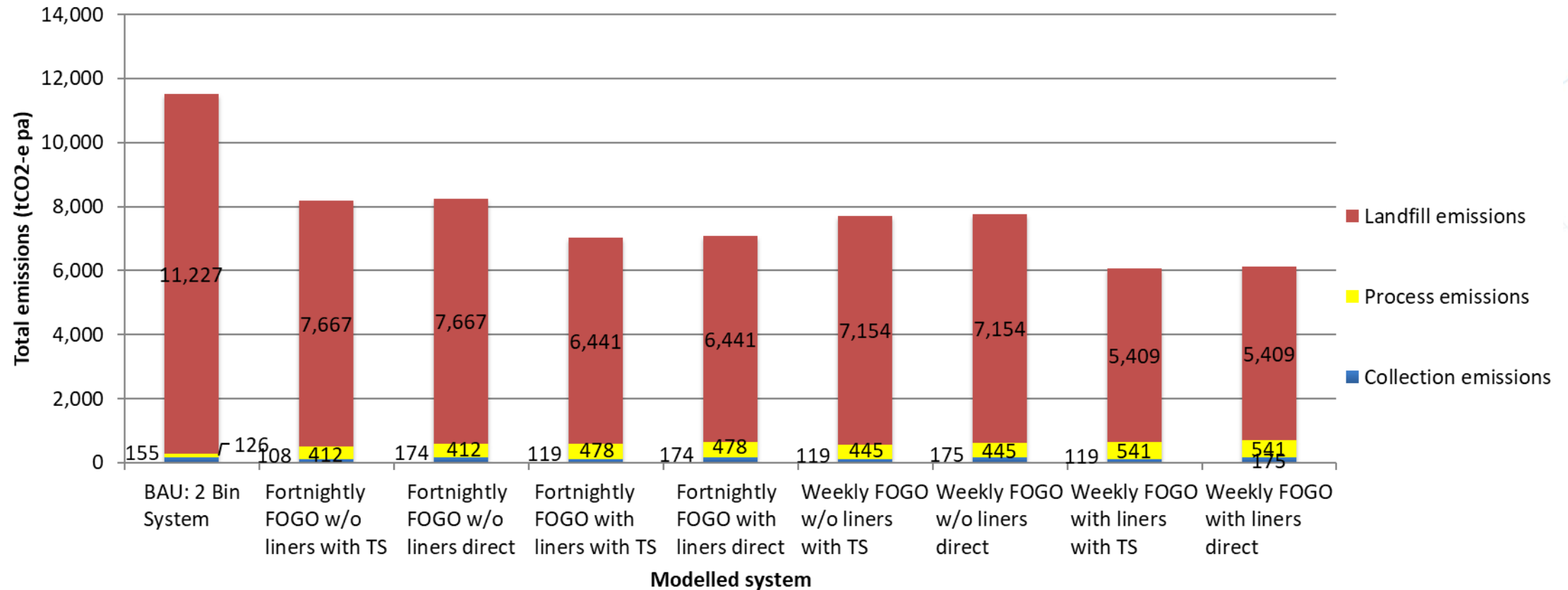


# Vehicle Km's per annum – Council Z

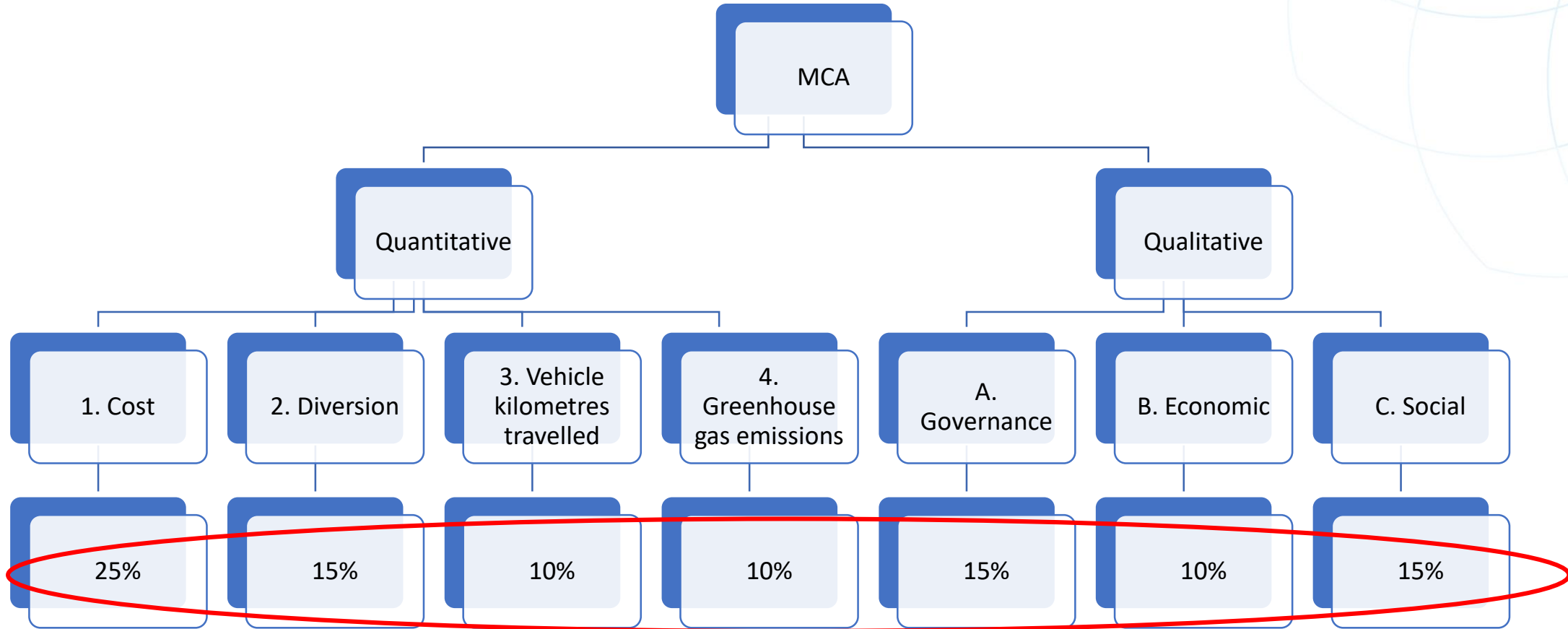




# CO<sub>2</sub> Emissions – Council Y



# Next steps: Multi Criteria Analysis (MCA)




**Criteria and Weights were established individually with each council**

**Note:** [redacted] added an additional qualitative criteria: "Broader Environmental"

# Multi Criteria Analysis: Regional Assessment Criteria & Weightings

	Quantitative				Qualitative			
	Total Net Present Value (\$m)	Diversion (%)	Annual Vehicle kilometres travelled	Annual Emissions (tCO2)	Policy Alignment	Broader economic benefits	Community accessibility	Broader Environmental
Regional Average	30%	20%	7%	13%	13%	7%	10%	0%

	Quantitative				Qualitative			
Council	Total Net Present Value (\$m)	Diversion (%)	Annual Vehicle kilometres travelled	Annual Emissions (tCO2)	Policy Alignment	Broader economic benefits	Community accessibility	Broader Environmental
	35%	20%	5%	20%	15%		5%	
	25%	15%	10%	10%	15%	10%	15%	
	50%	30%		20%				
	25%	15%	10%	10%	15%	10%	15%	
	30%	20%	5%	10%	20%	5%	10%	
	20%	15%	10%	10%	15%	10%	10%	10%

# Multi Criteria Analysis: All EMRC Councils

System Options	6 EMRC member councils					
BAU: 2 Bin System	9	9	9	9	9	9
Fortnightly FOGO w/o liners with TS	8	8	8	8	8	7
Fortnightly FOGO w/o liners direct	7	6	7	7	6	7
Fortnightly FOGO with liners with TS	4	4	4	4	4	3
Fortnightly FOGO with liners direct	2	2	2	2	2	3
Wkly Garbage and Wkly FOGO (Liners) with TS	6	6	6	6	6	6
Wkly Garbage and Wkly FOGO (Liners) direct	5	5	5	4	5	5
Weekly FOGO with liners with TS	3	3	3	3	3	2
Weekly FOGO with liners direct	1	1	1	1	1	1

# Thank you

*EMRC officers are available  
to assist with your  
Consolidated Cost Model*

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