MINUTES

CERTIFICATION OF CONFIRMATION OF WASTE ADVISORY COMMITTEE MINUTES

5 September 2019

I, Cr Steve Wolff, hereby certify that the minutes from the Waste Advisory Committee Meeting held on 5 September 2019 pages (1) to (76) were confirmed at a Committee meeting held on 21 November 2019

Signature

Cr Steve Wolff
Person presiding at Meeting

WASTE ADVISORY COMMITTEE

MINUTES

5 September 2019

(REF: D2019/12656)

A meeting of the Waste Advisory Committee was held at the EMRC Administration Office, 1st Floor, 226 Great Eastern Highway, BELMONT WA 6104 on **Thursday, 5 September 2019.** The meeting commenced at **5:04pm**.

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1 DECLARATION OF OPENING AND ANNOUNCEMENT OF VISITORS

The Chairman opened the meeting at 5:00pm and acknowledged the traditional custodians of the land on which the meeting was held and paid respects to the elders past, present and future.

The Chairman welcomed Mr Phillip Adams from Town of Bassendean to his first WAC meeting and Mr Greg Mohen from Kott Gunning Lawyers.

2 ATTENDANCE, APOLOGIES AND LEAVE OF ABSENCE (PREVIOUSLY APPROVED)

Committee Members

Cr Steve Wolff (**Chairman**)	EMRC Member	City of Belmont
Cr Jai Wilson (Deputising for Cr Mykytiuk)	EMRC Member	Town of Bassendean
Cr Barry McKenna	EMRC Member	City of Bayswater
Cr Geoff Stallard (Deputising for Cr O'Connor)	EMRC Member	City of Kalamunda
Cr David Lavell	EMRC Member	Shire of Mundaring
Cr David McDonnell	EMRC Member	City of Swan
Mr Phillip Adams	Acting Executive Manager Infrastructure	Town of Bassendean
Mr Doug Pearson	Director Works and Infrastructure	City of Bayswater
Mr Steve Morrison	Acting Director Infrastructure Services	City of Belmont
Mr Chris Thompson (Deputising for Mr Jackson)	Manager Asset & Waste Operations	City of Kalamunda
Mr Liam Noonan (Deputising for Mr Purdy)	Manager Design Services	Shire of Mundaring
Mr Jim Coten	Executive Manager Operations	City of Swan
Mr Marcus Geisler	Chief Executive Officer	EMRC

Leave of Absence Previously Approved

Cr Mykytiuk (from 02/09/2019 to 06/10/2019 inclusive)
Cr O'Connor (from 22/08/2019 to 24/09/2019 inclusive)

Apologies

Mr Brett Jackson	Director Asset Services	City of Kalamunda
Mr Shane Purdy	Director Infrastructure Services	Shire of Mundaring

EMRC Officers

Mr Stephen Fitzpatrick	Director Waste Services
Mr Hua Jer Liew	Director Corporate Services
Mrs Wendy Harris	Director Regional Services
Mr Stephen Conway	Manager Engineering & Waste Services
Mr Dave Beresford	Manager Resource Recovery
Ms Joanne Gray	Waste Education Officer
Ms Annette Rakich	Administration Support Officer (Minutes)

Observer(s)

Cr John Daw (from 5:10pm)	EMRC Member	Shire of Mundaring
Cr Doug Jeans	EMRC Deputy Member	Shire of Mundaring
Mr Roger Harispersad	Coordinator Waste and Fleet	Shire of Mundaring

Visitor(s)

Mr Greg Mohen	Partner	Kott Gunning Lawyers

3 DISCLOSURE OF INTERESTS

Nil

4 ANNOUNCEMENTS BY THE CHAIRMAN OR PRESIDING MEMBER WITHOUT DISCUSSION

4.1 CHANGE TO ORDER OF BUSINESS

The Chairman advised there would be a change to the Order of Business, Confidential Items 14.1 Hazelmere Wood Waste to Energy Plant Update and Item 14.2 Resource Recovery Facility Update would be dealt with after this point to make the most efficient use of Mr Mohen's time.

Confidential items 14.1 Hazelmere Wood Waste To Energy Plant Update and 14.2 Resource Recovery Facility Update were dealt with at this point of the meeting prior to Item 5.

5 PETITIONS, DEPUTATIONS AND PRESENTATIONS

RECOMMENDATION (Closing meeting to the public)

That the meeting be closed to members of the public in accordance with Section 5.23 (2)(c) of the *Local Government Act 1995* for the purpose of dealing with matters of a confidential nature.

WAC RESOLUTION

MOVED CR MCDONNELL SECONDED CR COTEN

THAT WITH THE EXCEPTION OF THE CEO, DIRECTOR WASTE SERVICES, DIRECTOR CORPORATE SERVICES, DIRECTOR REGIONAL SERVICES, MANAGER RESOURCE RECOVERY, MANAGER ENGINEERING AND WASTE OPERATIONS, MR MOHEN AND ADMINISTRATION OFFICER WASTE SERVICES, THE MEETING BE CLOSED TO MEMBERS OF THE PUBLIC IN ACCORDANCE WITH SECTION 5.23 (2) OF THE *LOCAL GOVERNMENT ACT 1995* FOR THE PURPOSE OF DEALING WITH MATTERS OF A CONFIDENTIAL NATURE.

CARRIED UNANIMOUSLY

The doors of the meeting were closed at 5:39pm and members of the public departed the Council Chambers.

The Chief Executive Officer, Director Corporate Services, Director Waste Services, Director Regional Services, Manager Resource Recovery, Manager Engineering and Waste Operations, Mr Mohen, and Administration Officer Waste Services remained in the Council Chambers.

5.1 HAZELMERE WASTE TRANSFER STATION UPDATE (CONFIDENTIAL)

The Director Waste Services provided a brief update on the Hazelmere Waste Transfer Station. The Director Waste Services responded to questions from members.

The doors of the meeting were re-opened at 5:56pm.

Item 5 continued

RECOMMENDATION [Meeting re-opened to the public]

That the meeting be re-opened, the members of the public be invited to return to the meeting and the recommendations passed behind closed doors be recorded.

WAC RESOLUTION

MOVED CR MCDONNELL SECONDED CR COTEN

THAT THE MEETING BE RE-OPENED, THE MEMBERS OF THE PUBLIC BE INVITED TO RETURN TO THE MEETING AND THE RECOMMENDATIONS PASSED BEHIND CLOSED DOORS BE RECORDED.

CARRIED UNANIMOUSLY

The doors of the meeting were re-opened at 5:56pm and members of the public returned to the Council Chambers.

6 CONFIRMATION OF MINUTES OF PREVIOUS MEETINGS

6.1 MINUTES OF THE WASTE ADVISORY COMMITTEE MEETING HELD ON 8 AUGUST 2019

That the Minutes of the Waste Advisory Committee meeting held on 8 August 2019 which have been distributed, be confirmed.

WAC RESOLUTION(S)

MOVED CR MCDONNELL SECONDED CR LAVELL

THAT THE MINUTES OF THE WASTE ADVISORY COMMITTEE MEETING HELD ON 8 AUGUST 2019 WHICH HAVE BEEN DISTRIBUTED, BE CONFIRMED.

CARRIED UNANIMOUSLY

7 QUESTIONS BY MEMBERS OF WHICH DUE NOTICE HAS BEEN GIVEN

Nil

8 QUESTIONS BY MEMBERS WITHOUT NOTICE

Nil

9 ANNOUNCEMENT OF CONFIDENTIAL MATTERS FOR WHICH MEETINGS MAY BE CLOSED TO THE PUBLIC

NOTE: Section 5.23(2) of the *Local Government Act 1995*, details a number of matters upon which Council may discuss and make decisions without members of the public being present. These matters include: matters affecting employees; personal affairs of any person; contractual matters; legal advice; commercial-in-confidence matters; security matters; among others.

The following report items are covered in Section 14 of this agenda.

9.1 HAZELMERE WOOD WASTE TO ENERGY PLANT UPDATE
9.2 RESOURCE RECOVERY FACILITY UPDATE

10 BUSINESS NOT DEALT WITH FROM A PREVIOUS MEETING

Nil

11 REPORTS OF EMPLOYEES

11.1 TENDER RFT2019-002 MOBILE AERATED FLOOR SYSTEM

REFERENCE: D2019/12658

PURPOSE OF REPORT

The purpose of this report is to advise Council of the results of Tender RFT2019-002 to procure a Mobile Aerated Floor System and recommend acceptance of the tender from Spartel Pty Ltd.

KEY POINTS AND RECOMMENDATION(S)

- A tender for the design, supply, install and maintain of a Mobile Aerated Floor System (MAFS) was issued on 13 July 2019.
- Tenders closed on 31 July 2019 with two (2) submissions being received.
- The tender called for the design, supply, installation and maintenance of a MAFS complete with spare parts required to process up to 10,000 tonnes per annum of Food Organics and Garden Organics (FOGO) waste in conjunction with the trial of FOGO processing.
- The MAFS will be located on the green waste processing pad at the Red Hill Waste Management Facility.
- A licence amendment for the Red Hill site is being progressed with the Department of Water and Environment Regulation (DWER) for the FOGO trial.

Recommendation(s)

That:

1. Council award Tender RFT2019-002 – Design, Supply, Install and Maintain a Mobile Aerated Floor System to Spartel Pty Ltd for $534,400.00 (ex GST) based on their tender for the MAFS as per the attached schedule including rates for the maintenance and estimated spare parts costs over a five (5) year period.
2. The CEO be authorised on behalf of the EMRC to enter into a contract with Spartel Pty Ltd in accordance with their submitted tender, subject to any minor variations that may be agreed on between the CEO and Spartel Pty Ltd.
3. Council authorise a 10% contingency based on the tendered price for any contract variations that may arise for Tender RFT2019-002.

SOURCE OF REPORT

Director Waste Services

BACKGROUND

At the 21 March 2019 meeting of Council it was resolved:

"*THAT*:

1. THE EMRC BEGIN THE PROCESS OF DEVELOPING A LONG-TERM FOOD ORGANIC & GARDEN ORGANIC (FOGO) STRATEGY INCLUDING, IF REQUIRED, SEEKING EXPRESSIONS OF INTEREST FOR THE APPROPRIATE TECHNOLOGY TO IMPLEMENT LONG-TERM FOGO PROCESSING SOLUTIONS TO CATER FOR ALL MEMBER COUNCIL WASTE STREAMS.

Item 11.1 continued

2. *IN THE INTERIM, THE EMRC PROCEEDS WITH THE PROCUREMENT PROCESS AND LICENCE APPROVAL FOR THE ADDITION OF A TRIAL MOBILE AERATOR FLOOR (MAF) COMPOSTING SYSTEM FOR THE PROCESSING OF UP TO10,000 TPA OF FOGO WASTE AT THE RED HILL WASTE MANAGEMENT FACILITY.*
3. *APPROVES THE EXPENDITURE OF UP TO $400,000 EX GST FOR THE PURCHASE AND INSTALLATION OF A SUITABLE MAF SYSTEM, INCLUDING HARDSTAND INSTALLATION AND THAT THE FUNDS BE ALLOCATED FROM THE SECONDARY WASTE RESERVE.*
4. *NOTES THAT INTERIM ARRANGEMENTS ARE AVAILABLE WITH SEVERAL THIRD PARTY PROCESSORS OF FOGO WASTE IF THE INSTALLATION OF A PROCESSING FACILITY OR THE LICENCE APPROVAL IS DELAYED FOR WHATEVER REASON BEYOND PLANNED START DATES FOR FOGO COLLECTIONS BY MEMBER COUNCILS.*
5. *ADVISE THE TOWN OF BASSENDEAN AND THE CITY OF BAYSWATER OF THE COUNCIL RESOLUTION AND AUTHORISE THE CEO TO ENTER INTO NEGOTIATIONS WITH THESE MEMBER COUNCILS FOR A SUITABLE PROCESSING ARRANGEMENT.*
6. *SEEK FUNDING SUPPORT FROM THE WASTE AUTHORITY FOR THE FOGO TRIAL AT THE RED HILL WASTE MANAGEMENT FACILITY.*
7. *THAT THE EMRC EXPLORE ALL MARKETING OPPORTUNITIES FOR THE COMPOST PRODUCT DURING THE FOGO TRIAL PERIOD."*

It is intended to award a contract for the design, supply, installation and maintain of a Mobile Aerated Floor System (MAFS) with the maintenance services and spare parts to cover a three (3) year period with an option of two, one (1) year extensions at the discretion of the EMRC.

REPORT

Tender RFT2019-002 for the design, supply, install and maintain of a Mobile Aerated Floor System (MAFS) was issued on 13 July 2019.

Tenders closed on 31 July 2019 and submissions were received from:

a) Spartel Pty Ltd; and
b) WA Composts Pty Ltd as trustee for the Bios Unit Trust t/a C-Wise.

A detailed bill of quantities was submitted by each tenderer under five (5) main tasks:

- Design and supply of MAFS;
- Installation of MAFS on site;
- Commissioning;
- Maintenance; and
- Recommended spare parts.

The contract term is three (3) years with two (2) optional one (1) year extensions exercisable at the absolute discretion of the EMRC for the maintenance of the MAFS and supply of spares.

Item 11.1 continued

An evaluation panel of EMRC officers assessed the submissions on the following criteria:

Description of Qualitative Criteria		Weighting
(a)	Previous experience in the design, supply, install and maintenance of mobile aerated floor system.	25%
(b)	Technical compliance with the Specification and technology offered to meet Principal's requirements for the mobile aerated floor system	25%
(c)	Methodology in project execution and demonstrated understanding of Principal's requirements	10%
(d)	Safety Management Performance and Process	5%
(e)	Environmental Management System and Process	5%
Total Weighting		**70%**

The price evaluation was weighted at 30%. After combining the weighted scores for both the qualitative criteria and price, Spartel Pty Ltd represented the highest rated overall assessment and provides the best value for money.

The implementation period for the supply, installation and commissioning of the MAFS is estimated to be up to six (6) months.

A contingency allowance of 10% of the contract sum is recommended to allow for any unforeseen circumstances that may arise during the contract works.

A licence amendment has been requested from DWER to conduct the trial composting of FOGO waste in the green waste processing area. DWER have flagged odour management as a high risk which may need additional funding going forward if the operational management controls are inadequate to manage odours to an acceptable level.

STRATEGIC/POLICY IMPLICATIONS

Key Result Area 1 – Environmental Sustainability

1.1 To provide sustainable waste disposal operations

1.2 To improve regional waste management

FINANCIAL IMPLICATIONS

The Council resolution of 21 March 2019 approved funding of $400,000 (ex GST) allocated from the Secondary Waste Reserve. Since this time with the development of the budget for 2019/2020, an amount of $600,000 was allowed for in the adopted 2019/2020 Annual Budget which covers the cost of this tender.

SUSTAINABILITY IMPLICATIONS

The FOGO trial is part of the long-term strategy of the EMRC to be ready for the implementation of FOGO collections from the member Councils over the next few years.

Item 11.1 continued

MEMBER COUNCIL IMPLICATIONS

Member Council	Implication Details
Town of Bassendean	Nil
City of Bayswater	
City of Belmont	
City of Kalamunda	
Shire of Mundaring	
City of Swan	

ATTACHMENT(S)

Tender RFT2019-002 Schedule of Rates (Ref: D2019/13315)

VOTING REQUIREMENT

Simple Majority

RECOMMENDATION(S)

That:

1. Council award Tender RFT2019-002 – Design, Supply, Install and Maintain a Mobile Aerated Floor System to Spartel Pty Ltd for $534,400.00 (ex GST) based on their tender for the MAFS as per the attached schedule including rates for the maintenance and estimated spare parts costs over a five (5) year period.
2. The CEO be authorised on behalf of the EMRC to enter into a contract with Spartel Pty Ltd in accordance with their submitted tender, subject to any minor variations that may be agreed on between the CEO and Spartel Pty Ltd.
3. Council authorise a 10% contingency based on the tendered price for any contract variations that may arise for Tender RFT2019-002.

The Director Waste Services provided a brief overview and discussion ensued.

WAC RECOMMENDATION(S)

MOVED CR MCDONNELL SECONDED CR STALLARD

That:

1. Council award Tender RFT2019-002 – Design, Supply, Install and Maintain a Mobile Aerated Floor System to Spartel Pty Ltd for $534,400.00 (ex GST) based on their tender for the MAFS as per the attached schedule including rates for the maintenance and estimated spare parts costs over a five (5) year period.
2. The CEO be authorised on behalf of the EMRC to enter into a contract with Spartel Pty Ltd in accordance with their submitted tender, subject to any minor variations that may be agreed on between the CEO and Spartel Pty Ltd.
3. Council authorise a 10% contingency based on the tendered price for any contract variations that may arise for Tender RFT2019-002

CARRIED UNANIMOUSLY

Item 11.1 continued

COUNCIL RESOLUTION(S)

MOVED CR SECONDED CR

Schedule of Rates - Spartel Pty Ltd

MAFS			Spartel	
DESCRIPTION	**UNIT**	**QUANTITY**	**PRICE (ex GST)**	**TOTAL PRICE (ex GST)**
Design and supply MAFS	Lot	1	$ 350,000.00	$ 350,000.00
Installation of MAFS on Site	Lot	1	$ 35,000.00	$ 35,000.00
Commissioning	Lot	1	$ 15,000.00	$ 15,000.00
Maintenance services	Quarterly	20	$ 1,025.00	$ 20,500.00
Recommended Spares	Lot	1	$ 113,900.00	$ 113,900.00
Total Cost				**$ 534,400.00**

Spartel Spares

Description	Quantity	Unit Price	Total Price
Forced Aeration Power Plant (FAPP) Complete MAF system to ensure peak FOGO processing capability.	1	$ 95,000.00	$ 95,000.00
Aero Pipes	4	$ 1,500.00	$ 6,000.00
Air Supply Flex	1	$ 1,800.00	$ 1,800.00
SS WTRANS T Probes 1m (centre	3	$ 1,800.00	$ 5,400.00
SS WTRANS T Probes 2m (botton	3	$ 1,900.00	$ 5,700.00
Total			$ 113,900.00

11.2 WASTE MANAGEMENT COMMUNITY REFERENCE GROUP MEMBERSHIP RECRUITMENT

REFERENCE: D2019/12670

PURPOSE OF REPORT

The purpose of this report is to seek Council endorsement for additional members for the Waste Management Community Reference Group (WMCRG).

KEY POINTS AND RECOMMENDATION(S)

- The current membership of the WMCRG is standing at eight (8) members.
- Expressions of interest were sought from the community for additional members.
- There were eight (8) applications received by the close off date and seven (7) of these are recommended for acceptance.
- This will take the membership of the WMCRG to the recommended maximum of fifteen (15) members and provide representation from all member Councils.

Recommendation(s)

That Council endorse the nominations of the following community members for a two (2) year term expiring on 31 August 2021:

- Ms Gina Ogilvie;
- Mr Nick Sibbel;
- Ms Kristy Walden;
- Ms Robyn Walsh;
- Ms Jodi Gardener;
- Ms Belinda Henderson; and
- Mr Alan Wicks.

SOURCE OF REPORT

Director Waste Services

BACKGROUND

The WMCRG was formed in 2002 with membership drawn from the member Council areas.

The WMCRG purpose as detailed in the Terms of Reference is to:

a. Provide ongoing input and feedback to Council through the Waste Advisory Committee (WAC) formerly the Resource Recovery Committee (RRC) on the Community Waste Education Program;

b. Assist the EMRC with the development of further educational (i.e. communicative, participatory, consultative) requirements for the Community Waste Education Program, by identifying the information needs of different groups in the community;

c. Provide feedback on the development of key performance indicators for the ongoing monitoring of the Community Waste Education Program;

d. Assess the social, environmental, economic and technical issues associated with proposed resource recovery technologies and report to the WAC;

Item 11.2 continued

e. Provide advice and recommendations to Council, through the WAC, on issues associated with resource recovery technologies including site selection and technology selection; and

f. Work with the environmental, social and economic sectors in an inclusive manner to achieve balanced outcomes for future waste management in the region.

At the 20 June 2019 meeting of Council it was resolved:

THAT COUNCIL:

1. *WRITE TO MS RUTH KENDALL THE DEPUTY CHAIRMAN ACKNOWLEDGING HER SERVICE ON THE WMCRG SINCE ITS INCEPTION.*
2. *ENDORSE THE RENOMINATION OF THE FOLLOWING WMCRG MEMBERS FOR A TWO (2) YEAR TERM EXPIRING ON 31 AUGUST 2021 AND ACKNOWLEDGE THEIR CONTINUING SUPPORT.*
    - *MS DIANNE KATSCHERIAN (CHAIRMAN);*
    - *MR ANTHONY FOWLER;*
    - *MS BELINDA HAMILTON;*
    - *MS CARMEL LUCK;*
    - *MR EDWIN DELL;*
    - *MR MALCOLM BARKER;*
    - *MR MARK SIMPSON; AND*
    - *MR RAY LEWIS.*
3. *ACCEPT THE AMENDED TERMS OF REFERENCE AND ROLES OF MEMBERS AND OFFICERS FORMING (ATTACHMENT 2) TO THIS REPORT.*
4. *ADVERTISE FOR EXPRESSIONS OF INTEREST FOR ADDITIONAL MEMBERSHIP IN THE WMCRG.*

REPORT

In order to increase the representation of the WMCRG across all six member Councils, expressions of interest were sought from the community via the EMRC's Earth Carers network and with assistance from the member Councils, Waste and Sustainability officers. Nominations closed on Friday, 16 August 2019.

There were eight (8) applications received by the close off date and seven (7) of these are recommended for acceptance. The existing and proposed new members are shown in the table below. With the addition of these new members this will take the membership of the WMCRG to the recommended fifteen (15) members and provide representation from all member Councils. The Cities of Bayswater and Kalamunda are slightly over represented but this is due to historical factors and the nominations received.

Item 11.2 continued

Council	Current Members	Proposed New Members	Totals
Bassendean	Nil	Gina Ogilvie	1
Bayswater	Carmel Luck	Nick Sibbel Kristy Walden Robyn Walsh	4
Belmont	Nil	Jodi Gardiner	1
Kalamunda	Anthony Fowler Mark Simpson Belinda Hamilton	Belinda Henderson	4
Mundaring	Edwin Dell Dianne Katscherian		2
Swan	Malcolm Barker Ray Lewis	Alan Wicks	3
Total	**8**	**7**	**15**

The proposed new members were selected based on their interest in waste management and waste education as well as their connection with other community groups.

STRATEGIC/POLICY IMPLICATIONS

Key Result Area 1 – Environmental Sustainability

1.3 To provide resource recovery and recycling solutions in partnership with member Councils

FINANCIAL IMPLICATIONS

Nil

SUSTAINABILITY IMPLICATIONS

The Resource Recovery Facility and/or Resource Recovery Park will contribute toward minimising the environmental impact of waste by facilitating the sustainable use and development of resources.

MEMBER COUNCIL IMPLICATIONS

Member Council	Implication Details
Town of Bassendean City of Bayswater City of Belmont City of Kalamunda Shire of Mundaring City of Swan	Nil

Item 11.2 continued

ATTACHMENT(S)

Nil

VOTING REQUIREMENT

Simple Majority

RECOMMENDATION(S)

That Council endorse the nominations of the following community members for a two (2) year term expiring on 31 August 2021:

- Ms Gina Ogilvie;
- Mr Nick Sibbel;
- Ms Kristy Walden;
- Ms Robyn Walsh;
- Ms Jodi Gardener;
- Ms Belinda Henderson; and
- Mr Alan Wicks.

Discussion ensued

The Director Waste Services advised that eight (8) applications had been received with seven (7) positions available. All the applications were of a high calibre but due to the terms of reference limiting the number of members, only seven candidates are put up for endorsement.

WAC RECOMMENDATION(S)

MOVED CR MCDONNELL SECONDED CR STALLARD

That Council endorse the nominations of the following community members for a two (2) year term expiring on 31 August 2021:

- Ms Gina Ogilvie;
- Mr Nick Sibbel;
- Ms Kristy Walden;
- Ms Robyn Walsh;
- Ms Jodi Gardener;
- Ms Belinda Henderson; and
- Mr Alan Wicks.

CARRIED UNANIMOUSLY

COUNCIL RESOLUTION(S)

MOVED CR SECONDED CR

11.3 FOGO STUDY TOUR – AUGUST 2019

REFERENCE: D2019/12674

PURPOSE OF REPORT

The purpose of this report is to advise Council on the outcomes of a visit to food organics and garden organics (FOGO) processing and composting facilities in the eastern states in August 2019.

KEY POINTS AND RECOMMENDATION(S)

- A delegation of five (5) EMRC Councillors, five (5) WAC officers and four (4) EMRC staff visited FOGO processing facilities in NSW and Victoria during the week of 12 – 16 August 2019.
- Nine (9) organics processing facilities and one (1) waste plastic processing facility were visited during the week.
- The information gained from the visit will be used to help guide the development of FOGO processing and the associated issues of community education and market development at the EMRC's Red Hill Waste Management Facility.

Recommendation(s)

That:

1. The report be received.
2. The findings of the FOGO study tour be used to inform the future development of a long term FOGO strategy at the Red Hill Waste Management Facility.

SOURCE OF REPORT

Director Waste Services

BACKGROUND

Visits to local, eastern states and overseas resource recovery facilities have been undertaken since 2000 as part of the research into alternative waste treatment for municipal waste to inform councillors and guide decision making for the Resource Recovery Facility and the development of the Resource Recovery Park.

A visit to eastern states resource recovery facilities was last conducted in October 2012 and involved a group of EMRC councillors and officers (Ref: DMDOC/171083). This visit covered resource recovery facilities in Adelaide, Melbourne and Canberra.

At its 20 June 2019 meeting, it was resolved:

"THAT:

1. *COUNCIL APPROVE A STUDY TOUR TO EASTERN STATES FOOD ORGANICS AND GARDEN ORGANICS (FOGO) PROCESSING AND COMPOSTING FACILITIES IN AUGUST 2019, DETAILS AND TIMING OF WHICH ARE STILL TO BE CONFIRMED. THE STUDY TOUR DELEGATION TO COMPRISE OF RELEVANT EMRC OFFICERS AND NOMINATED WASTE ADVISORY COMMITTEE MEMBERS, SUBJECT TO THEIR AVAILABILITY.*
2. *WASTE ADVISORY COMMITTEE COUNCILLOR(S) POWELL, MCKENNA, LAVELL, MCDONNELL OR DELEGATE BE AUTHORISED TO ATTEND THE STUDY TOUR OF FACILITIES.*
3. *WASTE ADVISORY COMMITTEE OFFICER(S) DOUG PEARSON, DIRECTOR WORKS AND INFRASTRUCTURE, CITY OF BAYSWATER; STEVE MORRISON, MANAGER WORKS, CITY OF BELMONT; CHRIS THOMPSON, MANAGER ASSET & WASTE OPERATIONS, CITY OF KALAMUNDA; ROGER HARIPERSAD, REGIONAL WASTE COLLECTION SERVICE (RWCS)*

Item 11.3 continued

STEERING GROUP, SHIRE OF MUNDARING; COLIN PUMPHREY, MANAGER FLEET & WASTE SERVICES, CITY OF SWAN OR DELEGATE BE AUTHORISED TO ATTEND."

REPORT

The EMRC delegation successfully completed the approved FOGO Study Tour between 12 and 16 August 2019. Delegates included:

- EMRC Chairman, Cr David McDonnell;
- WAC councillors Janet Powell, Barry McKenna, Doug Jeans and Adam Kovalevs;
- WAC officers Doug Pearson, Steve Morrison, Chris Thompson, Roger Haripersad and Colin Pumphrey, and;
- EMRC officers Marcus Geisler, Hua Jer Liew, Stephen Conway and Annette Rakich.

The EMRC's Director Waste Services was unable to attend the tour.

The EMRC was unable to organise a visit to an example of a Container Deposit Scheme (CDS) collection facility in NSW or QLD to inform decision making about the EMRC and the member Council's involvement in the upcoming CDS scheme in WA. A visit of CDS processing facilities is being arranged through WA Return Recycle Renew Ltd (WARRRL), the scheme coordinator for September 2019 and the EMRC will participate.

The following interstate locations and facilities were visited:

	Facility Visited	Facility Details
New South Wales	ANL Badgery's Creek (coordinated by Penrith City Council staff)	Horticultural Products Production Facility licensed to process 150,000 tonnes per annum of organics, including forest residues, woodwaste and greenwaste. Uses ANL's Aerosorb engineered composting system.
	Awaba Waste Management Facility Lake Macquarie	Organics processing facility operated by Remondis to process 44,000 tpa of FOGO waste into compost and soil amendment products using hybrid model of tunnels and MAF system.
	Cairncross Waste Management Facility Port Macquarie	Organic Resource Recovery Facility – tunnel composting of FOGO waste/greenwaste/biosolids (24,000tpa) operated by Remondis. Also a MRF and a landfill.
	Coffs Coast Resource Recovery Park Coffs Harbour	MRF for the processing of recyclables operated by Handbin Waste Services. Alternative Waste Treatment facility which processes organics and mixed waste and is operated by Biomass Solutions using a tunnel system with mechanical turners, 50,000 tpa.
Victoria	Sacyr Dandenong Facility Dandenong South	New $65 million industrial composting facility for processing 120,000 tpa of green and food waste into useful compost. Involves pretreatment, shredding, tunnel composting and screening of the final product and advanced odour control.
	Melbourne Zoo, Parkville	HotRot composting facility using animal waste and bedding.
	Advanced Circular Polymers, Somerton	Processing of contaminated mixed plastics into plastic flake.
	Rewaste, Wollert	Anaerobic digestion of commercial food waste and biosolids.
	Veolia Organics Facility, Bulla	Produces 80,000 tonnes per annum of compost and mulches from greenwaste and FOGO waste in aerated covered tunnels.

Item 11.3 continued

The key findings of the FOGO study tour were as follows:

1. The selection of technology, scale of the plant is dependent on the economies of scale based on the availability and commitment of feedstock (FOGO Waste). The bigger the commitment, the greater the options and the lower the cost of the FOGO treatment per volume of waste.
2. Odour control in the facilities is well managed especially those that do not use bio solids in the FOGO treatment process.
3. The importance of waste education cannot be underestimated to make the FOGO process a success, especially to reduce the level of contamination by consistent messaging and increasing the levels of community engagement.
4. The demographics of the FOGO residents have a direct impact on the contamination levels, particularly transients (tourists or short term rentals) and high density living (apartments etc), both of which are difficult for community engagement and reinforcement.
5. Plastic bags contribute to the visual assessment of contamination but due to their light weight do not contribute significantly to the contamination levels quoted, thus remaining a problem for a clean finished compost product for sale.
6. Compostable bin caddy liners can't be easily differentiated from non-compostable bin caddy liners and the preference is for no caddy liners.
7. Participating councils in the FOGO journey should take greater ownership of the waste stream by not only focusing on the gate fee of FOGO waste disposal but also taking greater ownership with stake in the sales of the end products.
8. Container Deposit Schemes are highlighted by various operators as a critical missing element in reducing contamination at the source for FOGO waste.
9. As it is a long term facility, cater for 10% overdesign and factor in population growth (Sacyr was 100,000 tonnes committed but designed for 120,000).
10. Depending on the end market, the maturation time can be shortened, thus the throughput increased with the same front end.
11. Contamination management at the receival end is preferred, with a picking cabin preferred over floor pickers (Occupational Health and Safety - OHS).

STRATEGIC/POLICY IMPLICATIONS

Key Result Area 1 – Environmental Sustainability

1.3 To provide resource recovery and recycling solutions in partnership with member Councils

FINANCIAL IMPLICATIONS

Funds are budgeted in the 2019/2020 budgets to Undertake Resource Recovery Project Study Tour ($14,000) for the purpose of visits to Resource Recovery Facilities.

SUSTAINABILITY IMPLICATIONS

The implementation of FOGO processing at the Red Hill Waste Management Facility is a key part of the Waste Authority's State Waste Strategy.

Item 11.3 continued

MEMBER COUNCIL IMPLICATIONS

Member Council	Implication Details
Town of Bassendean	Nil
City of Bayswater	
City of Belmont	
City of Kalamunda	
Shire of Mundaring	
City of Swan	

ATTACHMENT(S)

FOGO Study Tour 12 – 16 August 2019 – Delegates Report (Ref: D2019/13037)

VOTING REQUIREMENT

Simple Majority

RECOMMENDATION(S)

That:

1. The report be received.
2. The findings of the FOGO study tour be used to inform the future development of a long term FOGO strategy at the Red Hill Waste Management Facility.

Presentation

The Manager Engineering and Waste Operations provided an informative presentation of the nine (9) facilities visited during the Study Tour, highlighting the key technology design layout and feedstock used at each of the sites.

WAC RECOMMENDATION(S)

MOVED CR MCDONNELL SECONDED CR STALLARD

That:

1. The report be received.
2. The findings of the FOGO study tour be used to inform the future development of a long term FOGO strategy at the Red Hill Waste Management Facility.

CARRIED UNANIMOUSLY

COUNCIL RESOLUTION(S)

MOVED CR SECONDED CR

FOGO Study Tour

12 – 16 August 2019

Delegations Report

Prepared by Stephen Conway, Manager Engineering and Waste Operations
Waste Advisory Committee (WAC)
September 2019

DOCUMENT CONTROL

Version	Description	Date	Author	Reviewer
A	Resource Recovery Study Tour 12-16 August 2019	22/08/2019	S Conway	S Fitzpatrick

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1 Waste Facilities

1.1 Australian Native Landscapes Pty Ltd (ANL) Composting Facility, Badgery's Creek, NSW

Australian Native Landscaping Pty Ltd (ANL) is a privately-owned horticultural product manufacturer. The main facility is in Badgery's Creek and comprises a 75-acre site (Figure 01), along with this facility there are seven satellite open windrow composting facilities ranging between 200-300km from the main facility.

The owner/operators of the site have a preference for the open window method of composting and have applied that method within their business model for over 30 years. Most of materials are collected and prepared for composting at the main facility and then distributed to satellite facilities for maturation and product enrichment and finally, sale. The satellite facilities allow for the increased processing of materials including forest waste, greenwaste, bio-solids and more recently FOGO.

ANL provides a wide variety of materials to the landscaping market everything including but not limited to sands, gravels, mulch, compost, soil improver, and soils. The site has its own laboratory ($360K) for testing products to ensure quality control. They bag products on site and palletise for sale during the growing season normally from the end of August to January/February. They expect to move up to 5,000 pallets during this period and annually up to 400,000 tonnes of material is turned over on the site.
Preferred stock grades of screened maturated compost are:

- 50mm to 15mm;
- 15mm down.

ANL receive mixtures of FOGO and GO where the input material has contamination of 9% and 5% respectively. To compost into a usable product, it needs to be <1% therefore de-contamination is required.

ANL have constructed a sorting shed with an aerated floor for around $5m. The shed is 50m x 75m (3,750m^2) and can handle a throughput up to 50,000t per annum of FOGO. Originally all sorting was to be achieved by spreading the load on the floor and then handpicking. Unfortunately, this method has become too onerous and an MRF style sorting station is on order with 8 stations to be installed within the shed. This was a contingency in the original shed design and therefore will fit in without any modifications to the shed structure.

Penrith City Council has had FOGO for 10 years and its selling pitch to the public is "the material is going back on the kids play fields, so keep it clean".

The Council has two waste charges that can be applied to the residential rates. The first of which is the Sustainability package (not standard). This costs $400/annum comprising of the FOGO, Recycling, and General Waste. Residents can opt out and only utilise the standard package consisting of Recycling and General Waste bins, however will be charged $900/annum. Alternatively, if residents do not maintain good segregation of the materials within the three bins, then they can be removed from the sustainable package and charged an additional $500 for a continued service without the FOGO bin.

The FOGO bins from the City have food content of 10% with 90% greenwaste, approximately 7kg and 9kg per weekly bin lift.

The total volume of waste increases with the introduction of the FOGO bin mainly from an increase in the disposal of greenwaste that may have been captured by bulk verge or direct drop off previously.

The owner of ANL, does not believe the tunnel system is very efficient but others have successfully developed the tunnelling process. It was also mentioned that the Council does not give out caddy bags and it has been noted that the bags used are sometimes not compostable and also contaminated. It was recommended to go with Caddies only with no bags. With FOGO, the contamination increases dramatically as the food packaging which is a major issue. An example given was residents had a mouldy loaf of bread already in contaminated packaging, when disposing into the FOGO system, instead of disposing only the mouldy bread, the packaging was not removed, therefore causing contamination and not seen hidden in the caddie bags at disposal time.

Odour Level: This facility processes many products from forestry waste, greenwaste, FOGO, and bio-solids. Considering the sorting shed was solely for the use of FOGO the odour there was not offensive and this maybe be down to the level of food waste within the FOGO (10%). As a precaution to manage odours the shed was fitted with negative air pressure bio-filter. It certainly is no worse than clean greenwaste composting and substantially better than a tip face.

1.2 Awaba Waste Management Facility (Remondis), Lake Macquarie, NSW

Remondis operates this composting facility for Port Macquarie-Hastings Council on a 15 to 18-year contract. This facility was designed to process 44,000 t/yr of FOGO at set up cost of $12m. The facility occupies an area of 3 hectares comprising of:

- administration offices;
- under cover receival area - 1,560m^2 (41m x 38m);
- five (5) in-vessel tunnels – 1,312m^2(41m x 32m), one for each working day, Monday to Friday;
- MAF area – 6,300m^2 (113m x 54m);
- Final screening area – 4,500m^2 (46m x 95m); and
- Leachate pond – 3,832m^2.

An aerial of the site is shown in Figure 02 below:

The site was commissioned Aug 2018 and is still fairly new. The process is as follows, FOGO received straight from collection trucks to receival area and lightly decontaminated (typical contamination is 1.4%) and shredded. The facility does not accept bio-solids. It is then loaded in the current day's tunnel; there is one for each day of the week Monday thru to Friday. There are no tunnels for Saturday or Sunday as there is no collections. The daily intake is fully processed each day with clean floor ready for the next day.

Frome there the FOGO will remain for 1 week to maturate; the tunnel allows for exact control of temperature and moisture. The air is recirculated to minimise odours and leachate is recirculated to reduce fresh water usage. The following week, the tunnel is emptied on to MAF system and aerated for 6 weeks with 3 movements of the windrows the ensure homogenisation of the compost. It is then screened, wind sifted, and transported from site for sale.

The main advice given was that education is essential and cannot be started early enough, preferably at least 12 months before services commence. The council has 240,000 residents and employs a green team of 6 waste educators in its waste team. Once the service commences, ongoing policing of the bins must continue to ensure that the contamination levels are low. The Council has a fairly static population with few rentals and State-owned properties; therefore, the residents have adopted the FOGO concept more readily. The council claims 65% recovery from landfill with the current 3-bin system incorporating FOGO. The final product is currently owned by Remondis and is sold on for landscaping and private gardens. There is a 30% by weight loss in the system processing mainly due to a loss of moisture. The site accepts approximately 16 to 20 trucks per day for delivery to the site. It was noted that due to seasonal conditions, the winter intake is roughly 2,000 t/month and during the summer it is upward of 4,000 t/month. The introduction of the Container Deposit Scheme has had a positive impact on reducing contamination, in particular, glass contamination.

This process could be part of a viable option for Red Hill but would require a pre-process picking station to ensure contamination is minimised. It may also be advisable to include a fixed aerated floor for the maturation process preceding the tunnel system. A fixed aeration floor was not possible at this site due to unstable ground conditions as a result of construction on an old landfill cell.

Odour Levels at the facility were not offensive, which may be due to low food content within the FOGO and the fact that it was loaded into the tunnel as it soon as it was decontaminated. This facility only took FOGO as is proposed for Red Hill.

This process could be part of a viable option for Red Hill but would require a pre-process picking station to ensure contamination is minimised. It may also be advisable to include a fixed aerated floor for the maturation process preceding the tunnel system. A fixed aeration floor was not possible at this site due to unstable ground conditions as a result of construction on an old landfill cell.

1.3 Cairncross Waste Management Facility (Remondis), Port Macquarie, NSW

The Cairncross Waste Management Facility (CWMF) covers a 143.8ha site, commenced operation in October 2001 after a comprehensive site selection and design process, and is Council's key solid waste management facility. The CWMF has been progressively developed and expanded upon and provides for a multi-functional operation, including:

- Collection area with weighbridge;
- Landfill;
- Organic Resource Recovery Facility;
- Materials Recycling Facility;
- Transfer Station;
- Gas bottle recycling centre;
- Planned resource recovery precinct;
- Stockpile area including concrete crushing trial;
- Water supply dam;
- Other site infrastructure (including office and staff amenities), and
- Planned sewage treatment plant.

The facility accepts FOGO from Port Macquarie and Hastings plus green waste from separate contractors. In addition to FOGO and greenwaste it also accepts Bio-solids trucked in from Port Macquarie.

The material input is handpicked to remove any remaining contamination. This is done by spreading out with a loader and using a person to pick out the contamination. The material is generally less than 1% contamination by weight. All trucks are inspected for contamination and trucks can be rejected if excessive contamination is found.

There is around 10% food waste to greenwaste in FOGO bins as delivered from the City and consistent with council FOGO rates.

The facility prepares a recipe for the composting process that has a composition of 33% FOGO, 33% greenwaste and 33% Bio solids.

The process at this facility includes:

- Decontamination;
- Mixing of FOGO, greenwaste and bio-solids;
- Grinding of prepared mixture;
- Loading in to a tunnel and left to maturate for 9 days;
- Transferred to another tunnel to ensure homogenisation for a further 9 days;
- Then open air windrowed for a further 9 days;
- Then screened to 15mm and 40mm; and
- Sold to market for between $25 to $38/t.

There is a 30% weight loss from the feed stock to the outgoing final product. The main markets are to macadamia farms and vineyards. As a result of utilising bio-solids in the process, the product cannot be bagged due to potential health risks.

Odour Level: At this facility the odour was highly offensive due to intake of bio-solids due to its location and distance from neighbours it lacked any air filters or bio filters. It would not be recommended that Red Hill receive bio-solids at its facility without it being fully enclosed and include negative pressure with bio filters.

1.4 Coffs Coast Resource Recovery Park, Coffs Harbour, NSW

This facility is owned and operated by Coffs Harbour City Council and comprises of:

- Materials Recovery Centre (yellow top);
- Drop off Centre (transfer station);
- Alternative Waste Treatment facility (FOGO, Greenwaste & General waste);
- Education Centre; and
- Landfill (3 years of air space remaining).

The facilities biggest advantage is all the waste processing services for the waste collection trucks from the 3-bin program.

Coffs Harbour is the first City to go FOGO in NSW, utilising a 44,000 service 3-bin system. They boast 88% diversion from landfill by utilising the AWT to remove organics and recyclables from the general waste bin (red top). The FOGO contamination rate varies between 0.5 – 3.0% depending on collection areas. Lower socio economic areas were mentioned for higher contamination rates. It was recommended that if kitchen caddies are provided that no compostable bags are given or allowed as they tend to contain higher contamination. It

was recommended to ensure that factor of safety be applied to the sizing of the plants' footprint as it is better being slightly too big than too small.

The AWT plant is fully enclosed with negative pressure bio filters and accepts 50% general waste, 30% bio-solids, and 20% FOGO with no compostable bags allowed. The whole process was extremely odorous within the building but unnoticeable outside. The FOGO process involves receival, decontamination by handpicking on the floor, shredding and placement within one of the tunnels. It is essential that plastic is removed before shredding as one piece of plastic can becomes 300+ post shredding.

The general waste is mechanically ripped to remove organics, metals, and plastics. The organics along with the bio-solids are added to FOGO/Greenwaste mix for composting. Once in the tunnel it slowly turned over 21 days until primary maturation is achieved. There is a specialised turner that traverses the tunnel, gradually moving the compost from the start of the tunnel to the end, 20 tonne enters the tunnel and 12 tonne is removed at the other end. The final product is then, matured for a further 30 days in outside windrows.

The final product is sold in bulk for $40 to $50/t and in smaller amounts to the general public as per the price list below.

The council's annual waste charge is presently set at $635/annum.

Odour Level: This facility due to bio-solids intake had very noxious odours within the building but due to an extensive negative pressure filtration system there was no odour outside.

1.5 Sacyr Environment, Dandenong South, Victoria

Sacyr is in the commissioning phase of its waste treatment plant in Melbourne. The waste treatment plant includes mechanical and biological treatment for municipal organic waste in Dandenong South (Melbourne, Victoria). The site is located in the middle of an industrial area with neighbours on each boundary as show in the aerial image below. To achieve this, the whole composting process is carried out within the factory building, utilising a negative pressure bio filtration system to neutralise odours. The building is 85m by 215m with an area of 18,275m^2 and can process up to 120,000 t /annum at a capital cost of around $45m excluding the land cost.

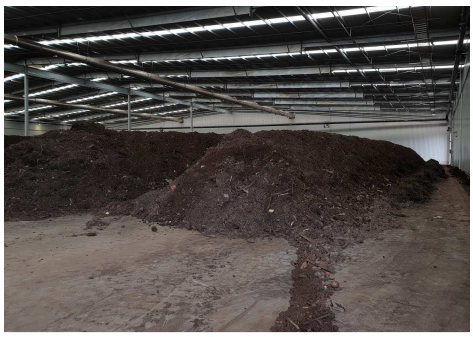
Of all the facilities visited, this was the most advanced but still seemed to lack some essential processes to make it better, such as a picking line at the front end and an aeration floor for final maturation. It was mentioned that the commissioning phase highlighted the need for a picking line at the frontend and that one was on order to be installed before commissioning is complete. At the back end it was noted that they chose wind turners (pic below) over an aerated floor. This was to save on capital costs. These wind turners cost around $700k each. The intention was that one (1) unit would suffice but the commissioning phase has highlighted the need for two (2) units therefore possibly negating the savings made by not installing the aerated floor for the maturation process.

The building is divided into 3 distinct sections as follows:

1. Receival/ mechanical separation of contamination, German;

2. In vessel tunnels fully enclosed concrete structures, with computer controlled temperature and moisture (Dutch design);

3. Maturation phase utilising static windrows, turned by mechanical wind turner.



The whole process takes 6 weeks from start to finish as follows:

- Receival and decontamination;
- 1 week invessel;
- Transfer to another invessel for another week;
- 4 weeks on the maturation floor;
- Screening (15mm and 40mm) and wind sifting (remove any remaining light plastics);
- Remove from site for sale.

The final product is sold for approximately $35 - $40 /t. The food to greenwaste percentage is less than 15%, contamination levels are low. They will be taking material from 8 surrounding Councils or 1.2 million residents. The facility took 12 months to construct against original estimates of 18 months so they are ahead of schedule. It took 6 years to get the agreements and business sorted out with the councils and to build the facility. Main issues were that none of the 8 councils were on the same page with the contracts and wanted different contract amendments. This led to heavy involvement of lawyers going around in circles.

The gate fees are $108/t for greenwaste and $130/t for FOGO which covers processing, capex and profit.

This facility would be perfect for Red Fill due to its small footprint but the commissioning issues would need to be addressed.

The facility is located in a built up commercial area so odour control is a major priority.

Odour Level: Odour levels within the building and starting at the receival area were not offensive and got even less offensive through the tunnel area and the final maturation area. The structure had a very sophisticated bio air filtration system that is a necessity due to its location with in the metro area of Melbourne.

1.6 Advanced Circular Polymers, Somerton, Victoria

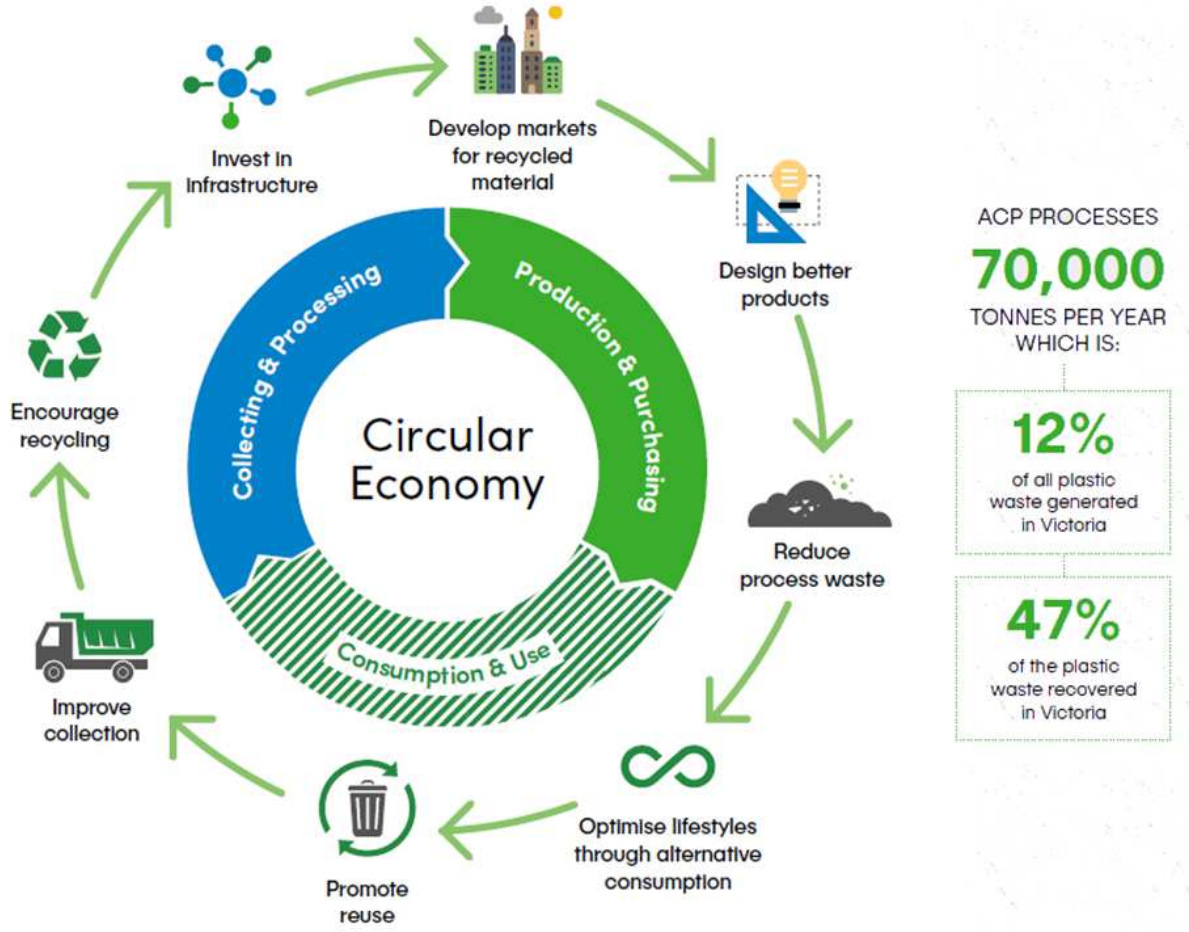
ACP runs Australia's largest plastics recycling plant. ACP is proud to lead the way in innovative technology and deliver a sustainable solution to the global plastics crisis by removing plastics waste from the environment.

With a $20 million dollar state-of-the-art facility and processing capability of 70,000 tonnes a year – equivalent to almost half of all plastics currently recovered across Victoria – ACP is a passionate driver of a circular economy.

Rather than plastic being collected, sent overseas, reprocessed then sent back to Australia they close the loop and find a sustainable solution locally.

The process involves transforming large quantities of low-value contaminated mixed plastics from households, commercial and industrial factories into high-quality commodities that can go directly into the manufacture of new products.

The plastics MRF cleans, grinds and sorts the plastics into flakes for resale. There were some safety concerns regarding the air quality with in the plant as it very dusty and with no air filtration system.



Odour Level: This facility had no system for air filtration and therefore the air quality was very bad due to the very high particle count but odour really was not a big issue.

1.7 Rewaste, 525 Craigie burn Road East, Wollert, Victoria - Wollert Waste to Energy Facility

Yarra Valley Water's first waste to energy plant is an award-winning solution to the problem of organic waste polluting our environment.

The facility, located at Wollert in Melbourne's north, became fully operational in May 2017 – a first for Victoria, and a first for the water industry in Australia. The waste input feedstock comprises of food waste from farmers, producers, mums and dads, and liquid waste such as whey, and grease trap. Unfortunately the process is very sensitive, and if the wrong organic is input, even small quantities, the whole process can slow or stop completely. New materials must be pretested to determine the reaction within the Anaerobic Digestion (AD) plant and approval can take up to five (5) months.

The end product is a liquid and is disposed to the sewer network to seed with bacteria due to its high content. The reduction is of intake material versus out take is 10% for solids and only 2-3% for liquids. This process would not be suitable for FOGO due to its dry content - other AD technologies would be more appropriate. The generator sets have operational and maintenance costs of $40/hr.

Waste producers, such as markets or food manufacturers, deliver the equivalent of 33,000 tonnes of commercial food waste to the Wollert facility each year. This diverts thousands of tonnes of waste away from landfill and can produce methane that is utilised to generate around 22,000 kilowatt hours of base load electricity seven (7) days a week 24 hrs a day, the equivalent power demand of around 1,300 homes.

The facility sits next to Yarra Valley Water's Aurora sewage treatment plant, generating enough energy to power the facility and the sewage treatment plant. Excess energy is exported to the electricity grid.

Turning waste into energy benefits Victoria by helping to reduce landfill, and cuts greenhouse gas emissions. By reducing their energy costs, these facilities will also help to keep water bills lower.

Odour Level: The odour levels were tolerable within the receival area and from there on within and outside of the plant there was no noticeable odour issue.

1.8 Melbourne Zoo, HotRot 3518 Composting Facility, Parkville, Victoria

Melbourne Zoo was the first zoo to achieve carbon neutral certification. The Sustainability Manager stated that the zoo intends to send zero waste to landfill by 2023. This is achieved by a number of methods including, enforcing the Zoo's food outlets utilise compostable packaging. The packaging includes soft plastics (Type 7 PLA), coffee cups, bowls, and cutlery as shown below.

The compostable bins that are located throughout the Zoo are collected and screened of any contaminants (still contamination even with clear instructions and pictures on the bins) before mixing with greenwaste and animal waste. The homogenised material is then placed with in the HotRot slow grind hopper for processing.

It takes approximately 10 days from the hopper and passes through the system. It can process up to 2.5t/day or 1,000 t/a. The largest HotRot system can process 5t/day or 2,000t/annum. The zoo sells the compost for $10-$15 for a 30 litre bag of fertilizer and the operational cost is around $60 per hour. This system is perfect for small scale operations such as the Zoo or a farm or possibly on an island.

Odour Level: The zoo had its usual smells and the Zoo's waste to compost area was not very odorous with the main source coming from the fresh fees stock which included bio solids from the zoo animals.

1.9 Veolia Bulla Organics Facility, Bulla, Victoria

This facility is essential a sister of the Sacyr's facility but with notable differences. It is not fully enclosed with the receival and final maturation areas outside. Inside the shed, the decontaminated material is shredded and loaded in to the tunnels. These tunnels do not have a concrete roof like Sacyrs' but utilise a tarp as a cover similar to that of semi-truck trailer. As with Sacyr the temperature and moisture content is carefully managed to ensure that maturation occurs. The capital cost was $14m and services the North Western Melbourne group of 11 councils. The gate fee for FOGO is around $85/t. The present contamination is between 2.5% and 10%.

The process from start to finish is as follows:

- Pre work: to take out visible hazardous and large items;
- Decontamination: 6 - 8 sorters plus 2 loader operators;
- Shredding: to bring material to an even particle size;
- Composting Vessels: 14 composting vessels. 300cubic meters each. Forced aeration in the vessels;
- The material remains in the vessel at 55C for 72 hours to kill of any seeds /bugs, then in the vessel for a further 7 to 10 days;
- 800 air holes in each floor. Air extracted from the top and feed back into the floor through the 800 holes. Constructed using retractable tarp roof and removable (by loader) front feed doors;
- Windrow for 4 to 6 weeks – prefer windrows outside. No advantage to be inside apart from odour control. Capital cost is high with under cover systems. Leachate management is an issue, and sufficient leachate ponds required;
- Screening for various sizes;
    - <20 mm compost;
    - 20 -60 mm mulch;
    - > 60 mm oversize; and
- Wind shifter to remove any soft plastics.

Major Markets:

- Broad acre farming; and
- Urban Soil Blends.

Benefits of green waste processing:

- Organic matter out of landfill;
- Reduces use of synthetic fertilisers;
- Reduces water use;
- Prevents run off; and
- Suppresses diseases.

Veolia are involved in a trail farm in Northern Victoria where damaged land has been bought back to productive land using the compost from FOGO processing at their operation in Bulla. Tomatoes produced at the site have shown the highest tomato yield in Australia. When material is transported to agricultural areas (up to 350 km) transport becomes the highest cost in the whole process.

This facility was managed to a very high standard and could easily be a viable option at Red Hill. Some suggested modification would be to enclose all of it to ensure that leachate management is kept in check.

Odour Level: This facility was mainly open area except for the feedstock grinding, homogenisation area, and the in-vessel tunnels. Even then the shed was mostly open to the environment. The Shed did have a negative pressure air bio filtration system. In general the odour was not offensive and managed correctly by utilising the correct equipment.

11.4 DRAFT FOOD ORGANICS AND GARDEN ORGANICS (FOGO) WASTE STRATEGY

REFERENCE: D2019/12734

PURPOSE OF REPORT

The purpose of this report is to provide a draft Food Organics and Garden Organics (FOGO) Waste Strategy for consideration by Council.

KEY POINTS AND RECOMMENDATION(S)

- The options for the processing of FOGO waste at the Red Hill Waste Management Facility (Red Hill) have been investigated further since the December 2018 and March 2019 Council meetings.
- The Mobile Aerator Floor (MAF) composting system is being procured for a FOGO composting trial at Red Hill.
- The draft FOGO Waste Strategy has been updated since being developed in March 2019 and is attached for consideration.

Recommendation(s)

That Council endorses the draft Food Organics and Garden Organics (FOGO) Waste Strategy.

SOURCE OF REPORT

Director Waste Services

BACKGROUND

In February 2018 the Town of Bassendean advised the EMRC that, inter alia "the Town would like to work with the EMRC to explore alternative options to the incineration of the Town's residual waste, including a trial/scalable anaerobic digester facility at the EMRC's Red Hill Facility for the Town's residual waste". The EMRC acknowledged this advice at their March 2018 Council meeting.

In October 2018, the City of Bayswater advised of their intention to introduce FOGO and requested that the EMRC undertake investigations in relation to best practice FOGO processing for the City of Bayswater and other interested parties collaboratively with the City of Bayswater to enable the implementation of FOGO in a timely manner. A meeting was held with the City of Bayswater on 6 November 2018 to gather a fuller understanding of their proposal and future requirements.

Further at its 6 December 2018 Council meeting it was resolved (Ref: D2018/17076):

"*THAT COUNCIL:*

1. *ACKNOWLEDGE THE REQUESTS FROM THE TOWN OF BASSENDEAN AND THE CITY OF BAYSWATER FOR THE INVESTIGATION OF THE PROCESSING OF FOOD AND GARDEN ORGANIC WASTE (FOGO) AT THE RED HILL WASTE MANAGEMENT FACILITY.*
2. *NOTES THE OPTIONS BEING CONSIDERED FOR THE PROCESSING OF FOGO WASTE AT THE RED HILL WASTE MANAGEMENT FACILITY.*
3. *AS PART OF THE VARIOUS OPTIONS BEING CONSIDERED, THAT INVESTIGATIONS AND COST MODELLING BE UNDERTAKEN ON OPTIONS TO ESTABLISH AN INTERIM FINANCIAL ARRANGEMENT ON BEHALF OF MEMBER COUNCILS, WITH SOUTHERN METROPOLITAN REGIONAL COUNCIL OR OTHER APPROPRIATE THIRD PARTIES FOR*
4. *THE PROCESSING OF FOGO COMMENCING 1 JULY 2019 UNTIL THE RED HILL WASTE MANAGEMENT FACILITY IS ABLE TO RECEIVE AND PROCESS FOGO WASTE.*

Item 11.4 continued

5. *REQUEST THE OUTCOME FROM THE REVIEW OF THE VARIOUS OPTIONS INCLUDING COST MODELLING BE PRESENTED TO THE MARCH 2019 ORDINARY COUNCIL MEETING."*

At its 21 March 2019 meeting of Council, it was resolved (D2019/05266):

"THAT:

1. *THE EMRC BEGIN THE PROCESS OF DEVELOPING A LONG-TERM FOOD ORGANIC & GARDEN ORGANIC (FOGO) STRATEGY INCLUDING, IF REQUIRED, SEEKING EXPRESSIONS OF INTEREST FOR THE APPROPRIATE TECHNOLOGY TO IMPLEMENT LONG-TERM FOGO PROCESSING SOLUTIONS TO CATER FOR ALL MEMBER COUNCIL WASTE STREAMS.*
2. *IN THE INTERIM, THE EMRC PROCEEDS WITH THE PROCUREMENT PROCESS AND LICENCE APPROVAL FOR THE ADDITION OF A TRIAL MOBILE AERATOR FLOOR (MAF) COMPOSTING SYSTEM FOR THE PROCESSING OF UP TO10,000 TPA OF FOGO WASTE AT THE RED HILL WASTE MANAGEMENT FACILITY.*
3. *APPROVES THE EXPENDITURE OF UP TO $400,000 EX GST FOR THE PURCHASE AND INSTALLATION OF A SUITABLE MAF SYSTEM, INCLUDING HARDSTAND INSTALLATION AND THAT THE FUNDS BE ALLOCATED FROM THE SECONDARY WASTE RESERVE.*
4. *NOTES THAT INTERIM ARRANGEMENTS ARE AVAILABLE WITH SEVERAL THIRD PARTY PROCESSORS OF FOGO WASTE IF THE INSTALLATION OF A PROCESSING FACILITY OR THE LICENCE APPROVAL IS DELAYED FOR WHATEVER REASON BEYOND PLANNED START DATES FOR FOGO COLLECTIONS BY MEMBER COUNCILS.*
5. *ADVISE THE TOWN OF BASSENDEAN AND THE CITY OF BAYSWATER OF THE COUNCIL RESOLUTION AND AUTHORISE THE CEO TO ENTER INTO NEGOTIATIONS WITH THESE MEMBER COUNCILS FOR A SUITABLE PROCESSING ARRANGEMENT.*
6. *SEEK FUNDING SUPPORT FROM THE WASTE AUTHORITY FOR THE FOGO TRIAL AT THE RED HILL WASTE MANAGEMENT FACILITY.*
7. *THAT THE EMRC EXPLORE ALL MARKETING OPPORTUNITIES FOR THE COMPOST PRODUCT DURING THE FOGO TRIAL PERIOD."*

REPORT

Since the March 2019 Council meeting, the draft FOGO waste strategy has been reviewed in light of the FOGO study tour in August (refer WAC report item 11.3), the unsuccessful grant application to the Community & Industry Engagement in April 2019 and collaboration with member Council councillors and officers.

The updated draft strategy is attached for consideration and adoption by Council.

Key steps in the strategy relate to the introduction of a best practice FOGO system involving nine (9) important steps. These steps will be followed by the EMRC:

1. Costed plan: Develop implementation plan that is fully costed and well accepted by Council
2. Early stage community engagement: Develop some early messaging about WHY
3. Design of service: Cost modelling of different service offerings to identify the optimum service delivery
4. Collection and processing tender: Developing tender specifications, call for tenders and tender evaluation to obtain the best value for money collection and/or processing contractor
5. Trial of service: Involve the residents in a trial to identify and resolve issues with a view to minimising contamination
6. Preparation: Stage the rollout, prepare FAQs and risk management plan, prepare media and marketing plan, identify multi-unit dwelling (MUD) issues and management, stakeholder engagement plan

Item 11.4 continued

7. Communications and education plan: Centrally planned, design, staged community education and rollout in consultation with member Councils with the education team centralised at the EMRC in consultation with participants and participating Councils.
8. Service rollout: Staged rollout, caddy and literature delivery, bin delivery, commencement. Staggered and coordinated across region; and
9. Monitoring and evaluation: Contamination monitoring, education bin inspections, positive bin stickering, supporting education, bin audits and reporting.

Other Issues

The draft FOGO waste strategy is aligned to the State Waste Strategy targets for Recovery of:

- 2025 – increase material recovery to 70%
- 2025 – all local governments in the Perth and Peel region to provide consistent three bin kerbside collection systems that include separation of FOGO from other waste categories
- 2030 – increase material recovery to 75%
- From 2020 – recover energy only from residual waste

The indicative implementation timeline is detailed below.

	Key activities	**Estimated Date**	**Important individual components and key decision points**
1	EMRC Council approval for the trial	21 March 2019	Completed
2	Authority approvals for FOGO trial at Red Hill	Conclude by 4 November 2019	• Licence amendment for trial area submitted 21 March 2019 • Licence amendment issued 31 August 2019 • Prepare and lodge Section 45C amendment application for Lots 9,10 FOGO processing 28 July 2019 • Consultation process (if required) concludes 30 September 2019 • EPA decision November 2019 • Ministerial approval December 2019
3	Infrastructure development for trial	MAF commissioned October/November 2019	• RFT issued 13 July 2019 • Evaluation undertaken and recommendation prepared 21 August 2019 • Council approval September 2019 • Contract issued September 2019 and installation commences • MAF commissioning completed 30 October 2019 • Procurement of caddies for member Councils - Bassendean and Bayswater • Trial ready to commence 1 July 2020 and conclude Dec 2021 • Report on trial completed thereafter
4	Contract with City of Bayswater and the Town of Bassendean to process FOGO waste	By 30 November 2019	• Under development and to commence deliveries of FOGO by 1 July 2020
5	Research and community education – source separation and contamination management	Ongoing	• Pre-trial survey in Town of Bassendean and City of Bayswater to be undertaken • Bin audit with all member Councils • Commence with generic ‘teaser’ information about what FOGO is from September 2019 • The EMRC will initially recruit two (2) EMRC FOGO Educators, with plans to recruit to 6

			to cater for the needs of all member Councils • Run intensive communication / education campaign for all member Councils • Bin tagging undertaken in July 2020 • Second bin audit to be undertaken if required • Additional bin tagging undertaken February and June 2021 • Final report on trial December 2021
6	Development and assessment of markets for compost	Commencing August 2019	• Product certification • Conduct field trials across the agriculture sector • Research markets; test feasibility
7	Determine long term FOGO solution for the region	Facility operational by 1 July 2022	• Identify options • Facility inspections and report on findings 28 November 2019 • Research project undertaken on effectiveness of alternative FOGO pathways completed March 2020 • Review results of MAF trial • Together with an estimated 60,000 tonnes of FOGO from member Councils and an additional 40,000 tonnes to be secured from elsewhere. All suppliers to be locked in via a Participation Waste Supply Agreement • Prepare RFT documents January 2020 • Issue RFT March 2020 • Finalise tender evaluation May 2020 • Council decision June 2020 • Contract finalised 30 June 2020 • Construction 30 June 2020 – 30 June 2021 • Joint tender bins/caddies procurement for four (4) remaining member Councils • Commissioning 1 July – 31 December 2021 • Facility ready for operation March 2022 • Contingency allowance of 3 months to 1 July 2022
8	Authority approvals for long term FOGO solution	Lodge June 2020 to December 2020	• Works approval and referral to EPA June 2020 • Approvals received December 2020
9	Member Council FOGO implementation	All Councils participating by 1 July 2022	• Town of Bassendean 1 July 2020 • City of Bayswater 1 July 2020 • City of Swan by 1 July 2022 • City of Belmont by 1 July 2022 • City of Kalamunda by 1 July 2022 • Shire of Mundaring by 1 July 2022

A learning from the FOGO Study Tour in August 2019 is the use of caddy liners is an issue with the management of contamination.

Item 11.4 continued

In terms of the timeline and actions to be dealt with over the coming months, the following is outlined:

- The trial facility at Red Hill will proceed utilising the budget allocation of $600,000 (ex GST) in the adopted 2019/2020 budget.
- The centralised education component will commence immediately for the Town of Bassendean and City of Bayswater in readiness for a 1 July 2020 commencement of FOGO collection from their third bin.
- The permanent facility will require a decision by Council at its December 2019 meeting to proceed to tender, with a view to commence the permanent facility by 1 July 2022.
- The procurement for bins and caddies will require a decision by Council to proceed to tender.
- The cash flow and funding model will be developed.
- Centralised education team.

STRATEGIC/POLICY IMPLICATIONS

Key Result Area 1 – Environmental Sustainability

1.1 To provide sustainable waste disposal operations

FINANCIAL IMPLICATIONS

There is provision in the adopted 2019/2020 Annual Budget and the ten (10) year financial plan for capital expenditure on food organics and garden organics (FOGO) processing.

SUSTAINABILITY IMPLICATIONS

Nil

MEMBER COUNCIL IMPLICATIONS

Member Council	Implication Details
Town of Bassendean	Nil
City of Bayswater	
City of Belmont	
City of Kalamunda	
Shire of Mundaring	
City of Swan	

ATTACHMENT(S)

Draft Food Organics and Garden Organics (FOGO) Waste Strategy (Ref: D2019/13023)

VOTING REQUIREMENT

Simple Majority

Item 11.4 continued

RECOMMENDATION(S)

That Council endorses the draft Food Organics and Garden Organics (FOGO) Waste Strategy.

WAC members were presented with an amended Officers Recommendation for consideration:

Amended Officer Recommendation(s)

That Council:

1. *Notes the draft Food Organics and Garden Organics (FOGO) Waste Strategy.*
2. *Endorses the proposed FOGO timeline implementation, as detailed in the draft FOGO Waste Strategy for a long term or permanent FOGO processing solution for the Region and beyond.*
3. *Requests that the draft FOGO Waste Strategy be further developed in consultation with member Council staff and be presented to Council for endorsement.*
4. *By absolute majority in accordance with section 6.8(1)(b) of the Local Government Act 1995, authorises an allocated budget of $100,000 to be utilised from the Secondary Waste Reserve to implement elements of the FOGO strategy, including but not necessarily limited, to preliminary work such as various modelling and tender preparations.*

Rationale of Proposed Amendments

Following feedback and discussions with member Council CEOs and Technical Directors, there is general acknowledgement that the draft FOGO Waste Strategy will require further refinement taking into account each of the member Councils unique situations. This will include modelling for the costing for each of the member Councils. It is proposed that the request for approval of unbudgeted funds will cover the cost of preliminary work including the modelling and tender preparations.

Mr Coten proposed a minor amendment to point 2 to accommodate further consultations while committing to an implementation timeframe.

AMENDED RECOMMENDATION(S)

That Council:

1. Notes the draft Food Organics and Garden Organics (FOGO) Waste Strategy.
2. Endorses the proposed outcome of having a long term or permanent FOGO treatment facility for the Region operating by July 2022.
3. Requests that the draft FOGO Waste Strategy be further developed in consultation with member Council staff and be presented to Council for endorsement.
4. By absolute majority in accordance with section 6.8(1)(b) of the *Local Government Act 1995,* authorises an allocated budget of $100,000 to be utilised from the Secondary Waste Reserve to implement elements of the FOGO strategy, including but not necessarily limited, to preliminary work such as various modelling and tender preparations.

Item 11.4 continued

WAC RECOMMENDATION(S)

MOVED MR COTEN SECONDED CR MCDONNELL

That Council:

1. Notes the draft Food Organics and Garden Organics (FOGO) Waste Strategy.
2. Endorses the proposed outcome of having a long term or permanent FOGO treatment facility for the Region operating by July 2022.
3. Requests that the draft FOGO Waste strategy be further developed in consultation with member Council staff and be presented to Council for endorsement.
4. By absolute majority in accordance with section 6.8(1)(b) of the *Local Government Act 1995,* authorises an allocated budget of $100,000 to be utilised from the secondary waste reserve to implement elements of the FOGO Strategy, including but not necessarily limited, to preliminary work such as various modelling and tender preparations.

CARRIED UNANIMOUSLY

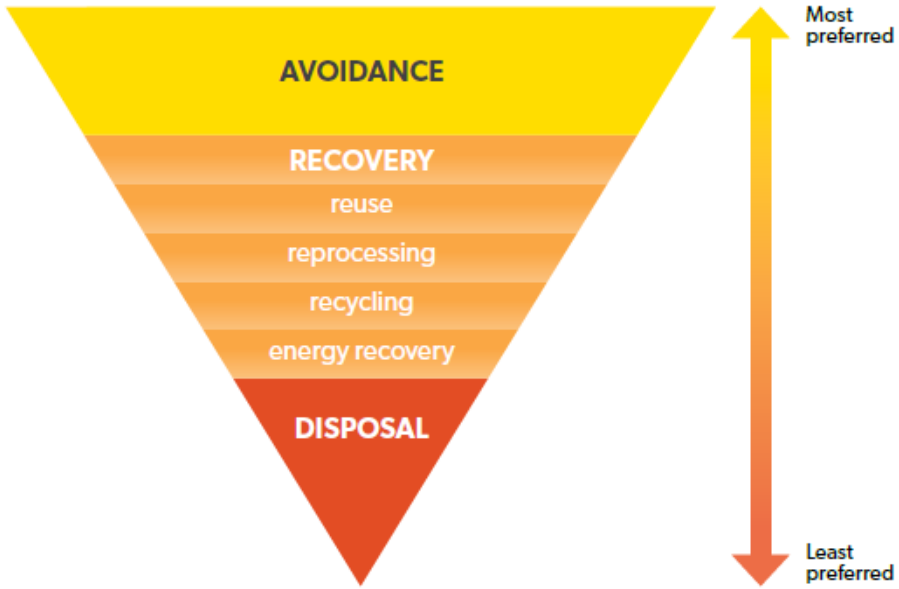
COUNCIL RESOLUTION(S)

MOVED CR SECONDED CR

EMRC FOGO STRATEGY

PART ONE: Our vision for FOGO in the region

Traditionally a landfill operator, over the last 30 plus years the Eastern Metropolitan Regional Council (EMRC) has been transforming its waste management practices. In step with other leaders in the waste management industry, the EMRC has continually explored options to extend its waste treatment practices up the waste hierarchy, with the aim of recovering material where feasible rather than disposing of it to landfill and losing the embedded energy and value.



This has led to the development of innovative facilities and processes to recover those resources.

Key among these are the EMRC's Hazelmere Resource Recovery Park which houses WA's first mattress recycling facility and waste timber recycling facility, and where a wood waste to energy facility using waste timber and producing biochar and electricity to power its own and neighbouring facilities will commence operation in 2020.

Householders are now very familiar with the yellow lid bin and the need to separate packaging materials for recycling.

Across the region is a series of community collection hubs, drop-off centres, transfer stations and collection points at shopping centres and Council offices (for batteries, mobile phones and fluoros) where householders can take reusable material that isn't collected in their normal household bins. Problem products such as e-waste and household hazardous waste (paints and chemicals) can be taken to Red Hill Waste Management Facility for free disposal under the Western Australian Local Government Association (WALGA) program funded by the Waste Authority.

Since 2002, the EMRC has undertaken a careful and considered exploration of resource recovery options to deal with the remaining household waste – the general waste stream that goes in the red lid bin. Our region generates approximately 150,000 tonnes of this waste annually. Reducing the amount of waste generated (avoidance) is clearly an important message to continue to push. To maximise materials recovery and deal with the household waste generated in line with the Waste Hierarchy, two solutions are now being progressed.

In 2018, the EMRC in conjunction with four of its member Councils, entered into an agreement with the Hitachi Zosen Inova (HZI) consortium for residual household waste to be processed at its waste to energy facility (W2E) in East Rockingham from 2022/2023. Residual waste is defined as waste which remains following the application of better practice source separation and recycling systems. The State Waste Strategy 2030 now states that, from 2020, only residual waste can be accepted and processed by W2E facilities. However, in the Circular Economy, whilst there is energy recovery, W2E is regarded as leakage. The challenge will be to ensure that, as far as possible, only residual waste goes to the HZI facility, and we will need the continued concerted efforts of all householders to diligently separate their waste at source if we are to achieve this. We will be working hard to make sure this message is communicated, received, and acted on.

That leads to our primary solution for materials recovery, which is the focus of this strategy. In 2019, the EMRC is commencing the journey towards the recovery of Food Organics and Garden Organics (FOGO) material. Of the 150,000 tonnes of general waste that our region produces annually, approximately 40% (60,000 tonnes) is food and organic waste. If each household can separate out this material very carefully to minimise contamination levels, this FOGO material can be efficiently and successfully reprocessed into compost and potentially, energy.

The EMRC sees FOGO collection and reprocessing as a key component of our future integrated waste management solution. In its focus on FOGO recovery, the EMRC is aligning closely with the State Waste Strategy 2030. The WA Waste Authority has identified eight headline strategies that it will be pursuing to support achievement of the State's targets for recovery of waste. Three of these headline strategies will directly support the EMRC's FOGO strategy:

- A mandated and consistent three bin kerbside collection system, which includes separation of food organics and garden organics from other waste categories, which is to be provided by all local governments in the Perth and Peel region by 2025 and which will be supported by State Government through the application of financial mechanisms;
- Development of state-wide communications to support consistent messaging on waste avoidance, resource recovery and appropriate waste disposal behaviours; and
- Provision of funding to promote the recovery of more value and resources from waste with an emphasis on focus materials including organics.

Best practice FOGO introduction requires consideration of nine important steps. These steps will be followed by the EMRC in its FOGO launch:

1. Costed plan: Our task is to develop an implementation plan that is fully costed and well accepted by Council
2. Early stage community engagement: Develop some early messaging about WHY
3. Design of service: Cost modelling of different service offerings to identify the optimum service delivery
4. Collection and processing tender: Develop tender specifications, call for tenders and tender evaluation to obtain the best value for money collection and/or processing contractor
5. Trial of service: Involve the residents in a trial to identify and resolve issues with a view to minimising contamination
6. Preparation: Stage the rollout, prepare FAQs and risk management plan, prepare media and marketing plan, identify multi-unit dwelling (MUD) issues and management, stakeholder engagement plan
7. Communications and education plan: Centrally planned, design, staged community education and rollout, and develop with the FOGO Educators team centralised at the EMRC in consultation with participating Councils
8. Service rollout: Staged rollout, caddy and literature delivery, bin delivery, commencement. Staggered and coordinated across region; and
9. Monitoring and evaluation: Contamination monitoring, education bin inspections, positive bin stickering, FOGO Educator Team supporting education, bin audits and reporting.

The EMRC will start the exploration of FOGO by conducting a FOGO processing trial in collaboration with the Town of Bassendean and the City of Bayswater. The plan is to have processing equipment in place for the commencement of collections on 1 July 2020 or sooner for both Councils. The EMRC will use this period and the FOGO collection from both Bassendean and Bayswater as a 'trial' and will also undertake an extensive education program with the two member Councils, gather data, refine processes and explore marketing of the final composted product, over the 18-month processing trial.

It is envisaged that the FOGO trial will clarify a number of unknowns including:

- How clean the source material needs to be to ensure the compost can be produced to meet relevant Australian standards (AS-4454). If we can meet AS-4454 this increases the market for the compost and supports economic viability of the solution;
- How easy it is for households to separate FOGO materials to the extent needed to provide a clean waste stream. Householders are used to separating waste into two bins. What messaging and support will be effective in achieving the additional effort needed? What monitoring of bins and bin content is needed and how frequently? Achieving very low rates of contamination is critical to the ability to meet AS-4454;
- What are the processing challenges and costs of using a MAF system to produce compost from FOGO waste;
- Is there a sustainable market for the product, particularly the volume of compost envisaged? With minimal or insufficient buyers for the product, the FOGO solution would be an unwise investment for the region.

Our objectives

The objectives for the introduction of these two initiatives – FOGO and Energy Recovery Facility (ERF) -- are:

- To reduce the amount of waste going to landfill;
- To build capacity within the community to achieve behaviour change to support these initiatives;
- To achieve community participation to improve source separation and achieve clean waste streams;
- To ensure an Anaerobic Digestion (AD) facility and/or an appropriate composting operation is ready and available for when Member Councils introduce a FOGO collection;
- To confirm that markets exist for the compost produced, to the level required to satisfy economic, environmental and sustainability criteria;
- To have a true residual waste stream for materials going to W2E facilities or landfill (i.e. Waste which remains following the application of better practice source separation and recycling systems);
- To build community confidence that only waste going to the thermal W2E facility is residual waste that doesn't have a higher and better use;
- To source funding for initiatives to support source separation and waste reduction (e.g. Waste Authority, public/private partnerships);
- To achieve the State Waste Strategy targets for recovery.

This FOGO strategy is based on the following principles:

- The FOGO strategy and implementation timeline will be developed in consultation with participating member Councils;
- An education and end product markets strategy will be developed;
- In consultation with member Councils, the EMRC will provide a team of up to 6 dedicated FOGO educators, centrally engaged, trained, managed and coordinated by the EMRC on behalf of member Councils;
- A bin / caddy procurement process will be undertaken for the entire region (6 member Councils);
- The journey will start with an 18-month trial of FOGO processing using a MAF system;
- A tender process will be undertaken for the procurement of sustainable technology and operating options for the permanent FOGO facility;
- All participating Councils will agree to and sign a Participants (Heads of) Agreement;
- The feasibility of funding bins, caddies and initial education / product marketing for members Councils through the Secondary Waste Reserve will be investigated; and
- Bin liners will not be provided or supported for kitchen caddies to reduce and minimise contamination.

Our measures of success

- Increased volumes of reportable material are being diverted from landfill and recovered from recycling systems.
- The State Waste Strategy recovery targets are being achieved.
- Waste reduction, recycling and source separation behaviours have been embraced by the community as a result of intensive / extensive FOGO education.
- Clean waste streams are being achieved with very low contamination rates.
- Long-term FOGO processing solution is producing low-contamination, high quality saleable compost (AS-4454 compliant).
- Sufficient markets are available for the compost produced, and horticulture/farming systems are benefitting from healthier soils.
- The community has confidence that the only waste going to the thermal W2E facility is residual waste.
- Funding is being obtained from external sources to support waste education programs and initiatives.

Council resolution

The region's commitment to investigate FOGO was confirmed with the following resolution passed by the EMRC Council at its 21 March 2019 Ordinary Council Meeting.

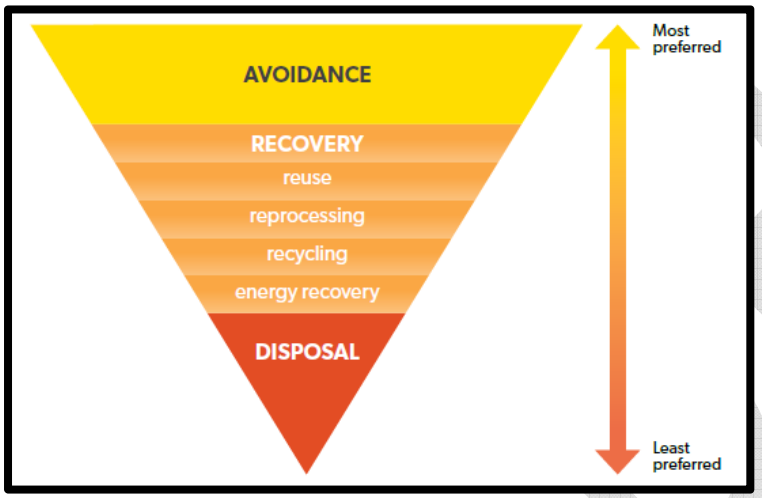
"THAT:

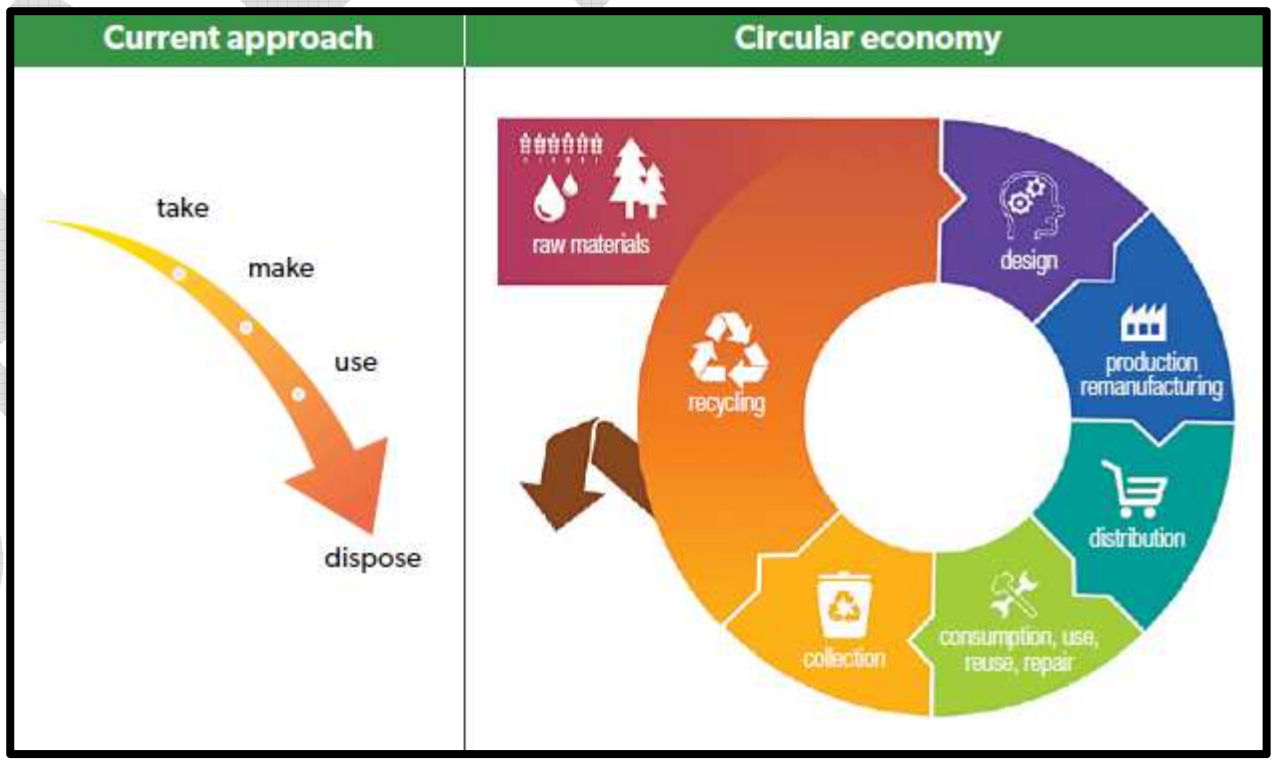
1. *THE EMRC BEGIN THE PROCESS OF DEVELOPING A LONG-TERM FOOD ORGANIC & GARDEN ORGANIC (FOGO) STRATEGY INCLUDING, IF REQUIRED, SEEKING EXPRESSIONS OF INTEREST FOR THE APPROPRIATE TECHNOLOGY TO IMPLEMENT LONG-TERM FOGO PROCESSING SOLUTIONS TO CATER FOR ALL MEMBER COUNCIL WASTE STREAMS.*
2. *IN THE INTERIM, THE EMRC PROCEEDS WITH THE PROCUREMENT PROCESS AND LICENCE APPROVAL FOR THE ADDITION OF A TRIAL MOBILE AERATOR FLOOR (MAF) COMPOSTING SYSTEM FOR THE PROCESSING OF UP TO10,000 TPA OF FOGO WASTE AT THE RED HILL WASTE MANAGEMENT FACILITY.*
3. *APPROVES THE EXPENDITURE OF UP TO $400,000 EX GST FOR THE PURCHASE AND INSTALLATION OF A SUITABLE MAF SYSTEM, INCLUDING HARDSTAND INSTALLATION AND THAT THE FUNDS BE ALLOCATED FROM THE SECONDARY WASTE RESERVE.*
4. *NOTES THAT INTERIM ARRANGEMENTS ARE AVAILABLE WITH SEVERAL THIRD PARTY PROCESSORS OF FOGO WASTE IF THE INSTALLATION OF A PROCESSING FACILITY OR THE LICENCE APPROVAL IS DELAYED FOR WHATEVER REASON BEYOND PLANNED START DATES FOR FOGO COLLECTIONS BY MEMBER COUNCILS.*

5. *ADVISE THE TOWN OF BASSENDEAN AND THE CITY OF BAYSWATER OF THE COUNCIL RESOLUTION AND AUTHORISE THE CEO TO ENTER INTO NEGOTIATIONS WITH THESE MEMBER COUNCILS FOR A SUITABLE PROCESSING ARRANGEMENT.*
6. *SEEK FUNDING SUPPORT FROM THE WASTE AUTHORITY FOR THE FOGO TRIAL AT THE RED HILL WASTE MANAGEMENT FACILITY.*
7. *THAT THE EMRC EXPLORE ALL MARKETING OPPORTUNITIES FOR THE COMPOST PRODUCT DURING THE FOGO TRIAL PERIOD."*

PART TWO: Alignment with the State Waste Strategy targets

In February 2019 the Waste Authority released its new *Waste Avoidance and Resource Recovery Strategy 2030 and Action Plan*. The Waste Hierarchy is one of the guiding concepts in the strategy. Complementing the Waste Hierarchy is the concept of the Circular Economy which proposes a move away from the linear 'take, make, use and dispose' model to one which keeps materials and energy circulating in the economy for as long as possible.

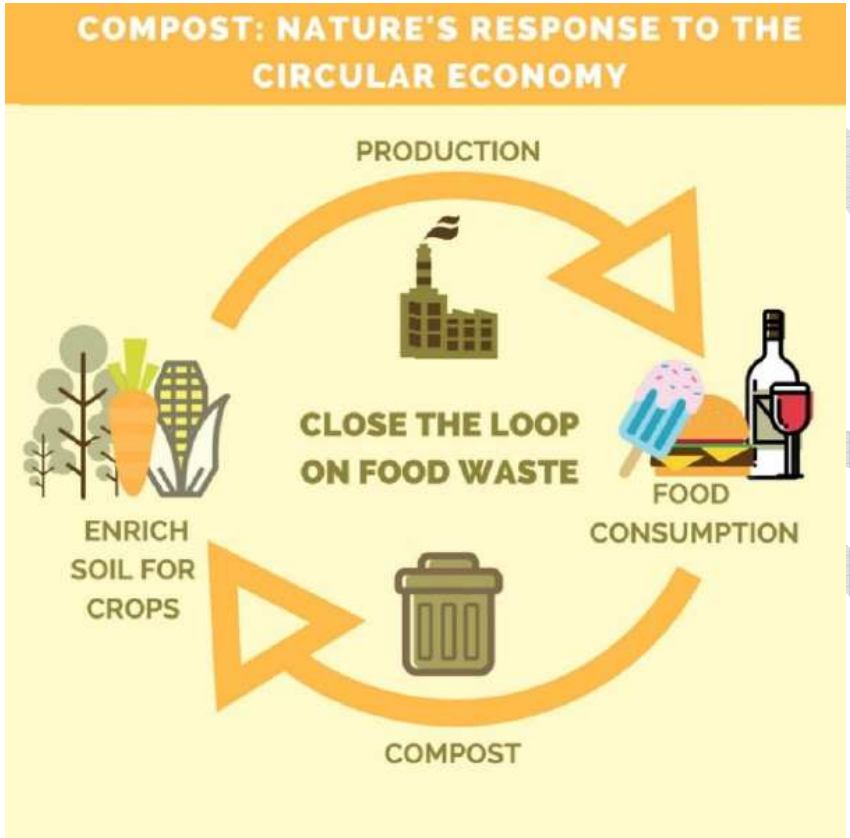




The EMRC Council passed the following resolution at its 21 March 2019 Ordinary Council Meeting.

"THAT COUNCIL NOTE THE RELEASE OF THE WESTERN AUSTRALIAN WASTE AVOIDANCE AND RESOURCE RECOVERY STRATEGY 2030 AND ACTION PLAN AND COMMITS TO ALIGNING THE EMRC WASTE PRACTICES WHERE POSSIBLE."

The two waste management initiatives the EMRC is pursuing – FOGO for all six member councils and Waste to Energy by four member councils– can both be considered as methods of recovery. For example, through the composting process, FOGO materials are reprocessed into a product that provides ongoing value in agriculture, landscaping, soil enhancement and land rehabilitation. If an anaerobic digestion process is used for FOGO materials, energy may also be produced.



(Source: Centre for Organic Research and Education)

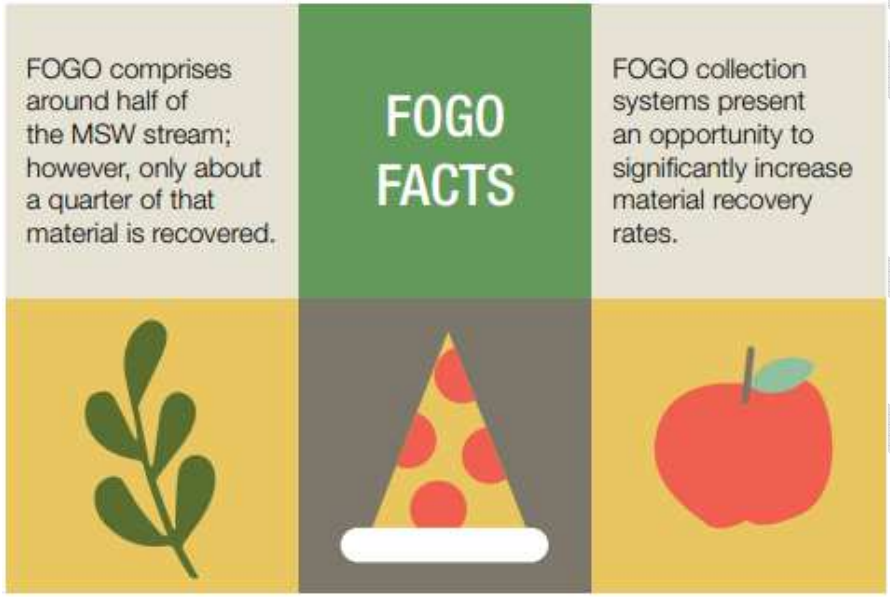
Composting is in fact the ultimate example of the Circular Economy, explained by the Centre for Organic Research and Education as a cycle: 'where food waste is reduced and reused and its nutrients recycled into fertiliser. By returning these nutrients back to the soil, rather than letting organic waste rot away in landfills we can feed diverse life in the soil. The bacteria, fungi, insects and worms in compost support healthy plant growth, which will help offset greenhouse gas emissions.' (https://compostweek.com.au/wp-content/uploads/2012/02/MEDIA-RELEASE-COMPOST-Nature%E2%80%99s-Circular-Economy.pdf). The intention is that compost produced within the Eastern region from household organics will be made available to residents, making all residents active participants in a local circular waste economy.

In relation to the Waste Hierarchy, composting is preferred and regarded as a step above Waste to Energy. The State Waste Strategy identifies that only residual waste is to be used for energy recovery. In terms of the Circular Economy, compost produced from FOGO keeps the material in circulation with energy produced through an anaerobic digestion process being circular, whilst energy recovered through Waste to Energy processes is regarded as 'leakage' from the Circular Economy. Both initiatives however are above the Disposal option and will contribute to the recovery targets set out in the State Waste Strategy:

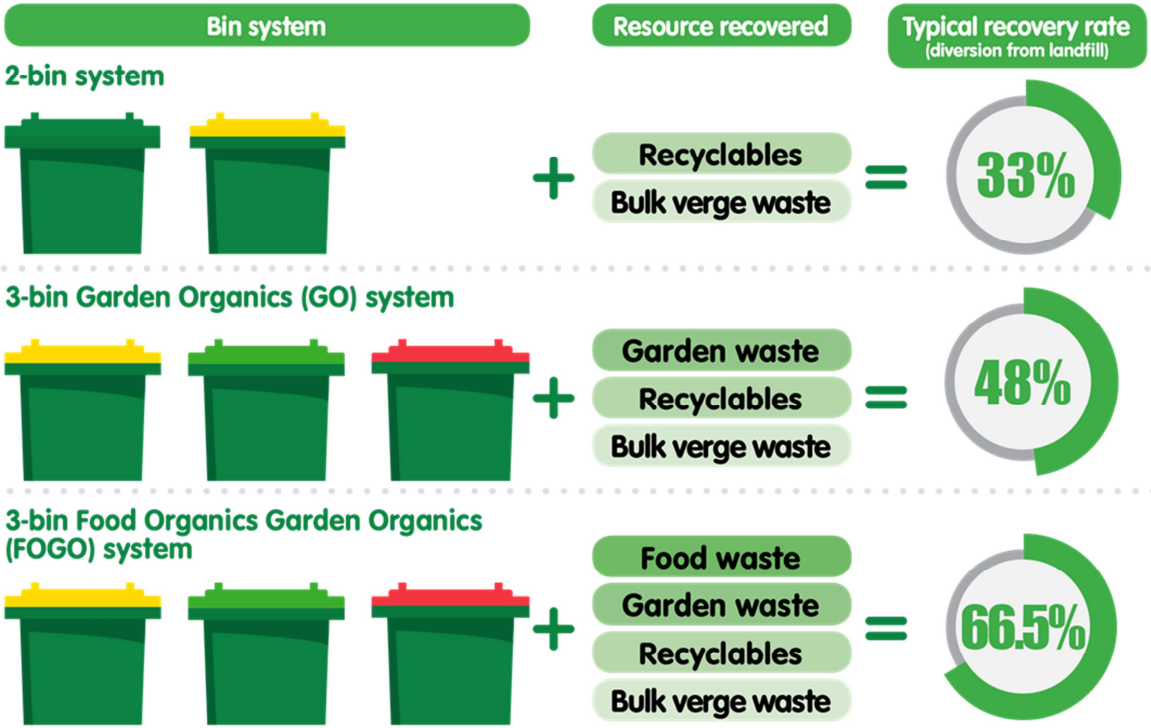
RECOVER TARGETS

- **2025** – Increase material recovery to 70%
- **2025** – All local governments in the Perth and Peel region provide consistent three bin kerbside collection systems that include separation of FOGO from other waste categories
- **2030** – Increase material recovery to 75%
- **From 2020** – Recover energy only from residual waste

The Waste Strategy identifies implementation of food organics and garden organics (FOGO) systems as a priority (p. 29), which it states will increase the recovery of material collected through kerbside services. Implementation of FOGO systems will be supported by State Government through the application of financial mechanisms to make it a cost competitive option for local governments. The Strategy also supports the development of local solutions and markets and this is what the EMRC is seeking to achieve with FOGO processing capacity at its Red Hill Waste Management Facility and the development of local markets for the product.



The Waste Authority has released a Position Statement on Food Organics and Garden Organics (FOGO). This position statement confirms the Waste Authority's support for FOGO collection systems provided by local governments to households. The Position Statement states that four local governments in Western Australia have an established three-bin FOGO service, with several other local governments in the process of introducing the service. The recovery results achieved to date are very positive. The City of Bunbury's FOGO service achieves a kerbside recovery rate of about 65 per cent. The Cities of Melville and Fremantle and the Town of East Fremantle will have fully implemented FOGO collections by 2020, following a successful household FOGO trial in the City of Melville, which achieved a recovery rate of 66.5 per cent as shown in the graphic below (Waste Authority Position Statement, p. 10).

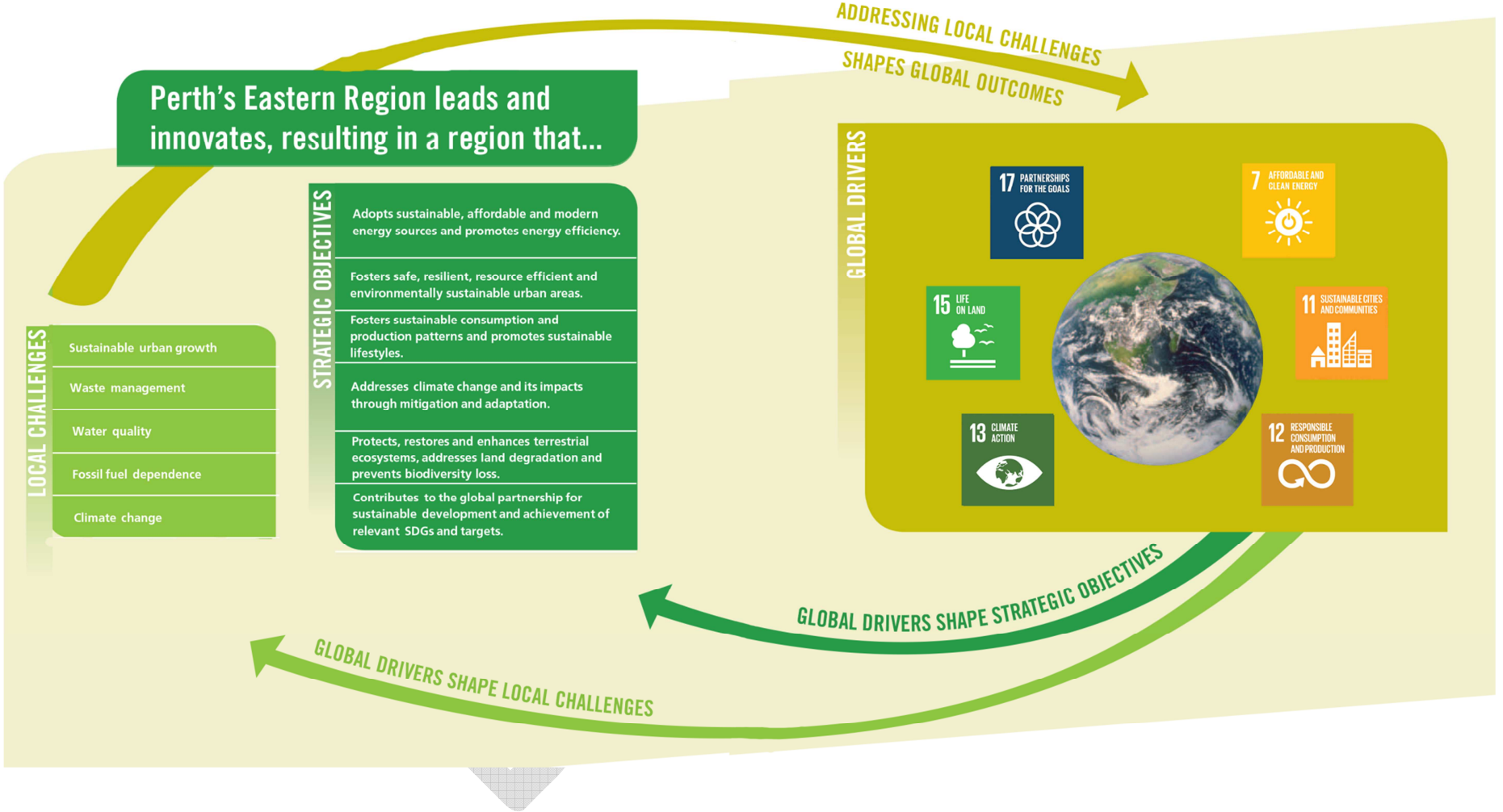

Bin system
Resource recovered
Typical recovery rate
(diversion from landfill)
2-bin system
Recyclables
Bulk verge waste
33%
3-bin Garden Organics (GO) system
Garden waste
Recyclables
Bulk verge waste
48%
3-bin Food Organics Garden Organics
(FOGO) system
Food waste
Garden waste
Recyclables
Bulk verge waste
66.5%

PART THREE: Alignment with the EMRC's Regional Environmental Strategy

The EMRC's *Regional Environment Strategy 2016-2020* was developed using the global United Nations Sustainable Development Goals (SDG) framework. Governments worldwide including the Australian Government have agreed to these goals. The EMRC was one of the first organisations in Australia to progress regional environmental management under the SDG framework. Others have since followed. The EMRC demonstrated its leadership and innovation by adopting the SDGs framework to develop strategies and actions, showcasing how the framework can be embedded sustainably across all parts of the organisation, which also demonstrates the importance of SDGs globally, nationally and locally. It is planned to continue to embed the SDGs into the Regional Waste Management and FOGO Strategy.

As stated in the *Regional Environment Strategy* (p. 9), the EMRC and its member Councils play a significant role in proving the value of SDGs as a fundamental tool in decision making because the goals were developed with the role of government clearly in mind. Some of the SDG targets are directly or closely related to the work of regional local governments, including waste management. At the core of the SDGs approach is the need to work collaboratively with others -- governments, non-governments, the private sector and the community at large -- to implement the SDGs and targets, and this also is a hallmark of local government best practice.

The EMRC found that in developing the *Regional Environment Strategy* eight of the challenges most important to the EMRC region aligned with seven of the global drivers (SDGs) and of these seven SDGs, six are relevant to waste management. Sustainable and effective waste management therefore directly contributes to achievement of six of the EMRC's strategic objectives for environmental management in the region. The table overleaf shows this interrelationship.


ADDRESSING LOCAL CHALLENGES SHAPES GLOBAL OUTCOMES
Perth's Eastern Region leads and innovates, resulting in a region that...
LOCAL CHALLENGES
Sustainable urban growth
Waste management
Water quality
Fossil fuel dependence
Climate change
STRATEGIC OBJECTIVES
Adopts sustainable, affordable and modern energy sources and promotes energy efficiency.
Fosters safe, resilient, resource efficient and environmentally sustainable urban areas.
Fosters sustainable consumption and production patterns and promotes sustainable lifestyles.
Addresses climate change and its impacts through mitigation and adaptation.
Protects, restores and enhances terrestrial ecosystems, addresses land degradation and prevents biodiversity loss.
Contributes to the global partnership for sustainable development and achievement of relevant SDGs and targets.
GLOBAL DRIVERS
17 PARTNERSHIPS FOR THE GOALS
7 AFFORDABLE AND CLEAN ENERGY
15 LIFE ON LAND
11 SUSTAINABLE CITIES AND COMMUNITIES
13 CLIMATE ACTION
12 RESPONSIBLE CONSUMPTION AND PRODUCTION
GLOBAL DRIVERS SHAPE STRATEGIC OBJECTIVES
GLOBAL DRIVERS SHAPE LOCAL CHALLENGES

PART FOUR: Alignment with the EMRC's Corporate Business Plan

The EMRC's aim for Key Result Area (KRA1): Environmental Sustainability, in its Corporate Business Plan, is to provide best practice waste management services which are sustainable, efficient and meet the needs of the Region. Further, the EMRC's waste position is that waste is a valuable resource that should be utilised in a sustainable and efficient way to meet the evolving needs of the region and protect the environment. Education to drive behavior is critical to removing barriers to behavior change.

All strategic goals, objectives, and actions in the region's Waste Management Strategy documentation are intended to support achievement of Western Australia's Waste Strategy. The tables on the next few pages list the contributions of effective waste management to achievement of the SDG targets, and specifically the contribution that FOGO collection and processing will make into the future.

SDG 7: Ensure access to affordable, reliable, sustainable and modern energy for all

7 AFFORDABLE AND CLEAN ENERGY ENSURE ACCESS TO AFFORDABLE, RELIABLE, SUSTAINABLE AND MODERN ENERGY FOR ALL. Relevant SDG targets 7.1 By 2030, ensure universal access to affordable, reliable and modern energy services. 7.2 By 2030, increase substantially the share of renewable energy in the global energy mix. 7.3 By 2030, double the global rate of improvement in energy efficiency.	How waste management contributes: • The EMRC's strategic communication goal for the Waste to Energy aspect of the business over the next four years is to position W2E processes as having a legitimate and valuable role in managing the region's waste. • Examples include: o The wood waste to energy project at the Hazelmere Resource Recovery Park which will produce electricity to power the Hazelmere facility and supply to a third party o The agreement with HZI to supply residual waste for energy production • Our key message is that W2E solutions are for residual waste only, so separate waste according to the collection systems provided and reduce contamination of recycling streams.	Potential FOGO impact: • Potential outputs from processing FOGO materials could include compost and biogas / renewable power. • Anaerobic digestion is one process for example that has the potential to produce biogas. • Tunnel composting and other enclosed systems are scalable options producing a compost product

SDG 11: Make cities and human settlements inclusive, safe, resilient and sustainable

How waste management contributes:

- Reducing the adverse environmental impact of cities is being addressed through waste management by adoption of the circular economy philosophy which treats all waste products as a resource that can be reused, recycled, reprocessed and kept within the economy as a valuable resource. Only waste products for which there is no further use would end up in landfill.
- Steady progress is being made by the EMRC waste management team to develop sustainable solutions for different waste product streams. Strong due diligence is undertaken to ensure careful consideration of any infrastructure development.
- Significant innovations to date include development of the Hazelmere Resource Recovery Park, wood chipping and mattress processing.
- Significant resourcing of waste education activities to encourage source separation behaviour across the member council communities will assist with creation of clean waste streams that improve the ability to recover and reuse materials.

Potential FOGO impact:

- The introduction of FOGO collection and processing in the region adds substantially to the region's ability to achieve the State Waste Strategy targets for recovery and reprocessing of usable materials.
- In the EMRC region, household food organic and garden organic (FOGO) waste currently comprises approximately 40% of MSW waste that goes to landfill. Effective separation of FOGO with minimal contamination rates will enable this significant waste stream to be processed separately into compost, thereby recovering a valuable resource and minimising waste to landfill. Processing of FOGO material will therefore be a significant component of the EMRC's regional approach to waste management.
- By 2025, following the introduction of FOGO collections across all six member Councils in the region, and the future contract to provide residual waste to the HZI Waste to Energy facility, the combined impact will be 78% diversion of MSW from landfill. This will enable the EMRC to achieve the waste recovery targets set within the State Waste Strategy.

SDG 12: Ensure sustainable consumption and production patterns

Relevant SDG targets

12.2	By 2030, achieve the sustainable management and efficient use of natural resources.
12.7	Promote public procurement practices that are sustainable, in accordance with national policies and priorities.
12.8	By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature.

How waste management contributes:

- Significant resourcing of waste education activities to encourage source separation behaviour across the member council communities and to assist with creation of clean waste streams that improve the ability to recover and reuse materials.
- This activity dates back to 2002 with the creation of the R Gang.
- The regional waste education program includes schools programs, battery collection, fluoro collection, Earth Carers, the Education Centre and tours at Red Hill Waste Management Facility are designed to build community awareness and knowledge of waste as a resource and how to manage it better.
- Continuing to push the dual messages of waste reduction / waste avoidance and source separation
- A key objective of waste education activity in the region is to build capacity within the community to achieve the behaviour change required for effective source separation.
- A key activity is to advocate for the use of resource recovery products that have been diverted from landfill.
- Internally, developing and endorsing policy and procedures to direct EMRC's procurement, recycling and disposal practices will support achievement of the waste targets.
- Across the region it will be important to collect

Potential FOGO impact:

- The introduction of FOGO provides the opportunity to focus on the source separation message. Significant investment in community education about source separation will have long-term benefits; the immediate effort aims to shift community behaviour and instil a new way of separating household waste.
- The EMRC and member Councils can achieve greater penetration of the message by leveraging off the Waste Authority's identification of FOGO as a priority for the State.
- The impetus for this project, and the demonstrated need it is addressing is based on the guiding concept of the circular economy and keeping recoverable and reusable materials in circulation, including reduction of waste to landfill, recovery of FOGO materials, and production of AS4454 compost.
- The development of FOGO processing capacity will also meet the needs for local FOGO processing solutions and development of local markets for the product in the EMRC catchment and beyond, which is a principle in the Waste Strategy 2030. The EMRC will work with member Councils and possibly other councils to encourage their use of the compost product, and sustainable procurement practices.
- One of the six objectives for the FOGO trial is to confirm that the introduction of FOGO collection and reprocessing results in a true

	and share data in order to better plan and track progress against targets. This firstly requires the generation of baseline data since 2014/15 and current levels of waste generation and recycling per capita in the region to track progress. • In addition, gathering existing data on current contamination levels across all household & commercial waste streams (e.g. from WALGA, Waste Authority, recycling contractors). This information will: o Inform education strategies to change behaviour o Enable feedback to be given to community about waste performance	residual waste stream. Proposed KPIs that will demonstrate this are: o *The Australian standard for compost AS4454 is being met* o *Markets to take the compost are identified and secured* o *Low levels of contamination are being achieved* o *Audit of red bin contents demonstrates that acceptable source separation is happening* • The first step is to undertake a trial to prove up a processing method for FOGO. This will include the Town of Bassendean and the City of Bayswater and their combined proposed capacity of 10,300 tonnes of FOGO. The learning from the trial will assist the four other member Councils and potentially other Councils to introduce FOGO collection progressively, and to enable a clean uncontaminated FOGO waste stream to come to the full scale facility for processing. Using current volumes, it is anticipated that the facility long term will need an estimated minimum of 60,000 tonnes per annum capacity to cater for our six member Councils, which could be scaled up, to accept FOGO waste from other Councils for processing.

SDG 13: Take urgent action to combat climate change and its impacts

* Acknowledging that the United Nations Framework Convention on Climate Change is the primary international, intergovernmental forum for negotiating the global response to climate change.

Relevant SDG targets

13.1	Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries.
13.2	Integrate climate change measures into national policies, strategies and planning.
13.3	Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning.

<u>How waste management contributes:</u>

- Best practice management of the landfill facility at the Red Hill Waste Management Facility contributes to the EMRC's ability to minimize carbon emissions.
- All efforts to divert waste from landfill have a potential impact on reducing future generation of methane gas. A key operational activity is to introduce improved systems to support separation of recoverable materials from waste going to landfill.
- At the same time, new industries and processes developed to recover, reuse and reprocess waste materials are all required to meet environmental standards which include meeting carbon emission requirements.
- Through the community collection hubs (waste transfer stations) there is the ability to work collaboratively with enterprises that can take specific materials for reuse and recovery (i.e. materials that can't be on-sold).
- Recovery of landfill gas at Red Hill Waste Management Facility to generate renewable energy.

<u>Potential FOGO impact:</u>

- Potential outputs from processing FOGO materials could include compost and biogas / renewable power.
- Anaerobic digestion is one process for example that has the potential to produce biogas.
- The broader benefit to Western Australia will come from the EMRC contributing to the recovery targets established in the Waste Strategy, and operationalising a key processing activity to manage FOGO for all of Perth's Eastern Region.
- When disposed to landfill, anaerobic decay of organic waste produces methane gas (a greenhouse gas). Removing organic waste from material going to landfill reduces future production of greenhouses gases.

SDG 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably managed forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

Relevant SDG targets

15.1	By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements.
15.3	By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world.
15.5	Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species.
15.8	By 2020, introduce measures to prevent the introduction and significantly reduce the impact of invasive alien species on land and water ecosystems and control or eradicate the priority species.
15.9	By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts.

How waste management contributes:

- Best practice management of the landfill facility at the Red Hill Waste Management and Resource Recovery Facility
- The EMRC's continued efforts to divert waste from landfill will extend the life of the landfill because the volume of waste it receives will significantly decrease. This defers future investment decisions about a future landfill site.
- Ongoing operations at Red Hill to collect, manage and dispose of problematic waste in the region in a sustainable manner ensures environmental impacts of problematic waste are minimised.

Potential FOGO impact:

- The production of compost to AS-4544 standard will enable this compost to have multiple uses to enrich soil, grow crops and improve pastures, and revegetate. The cleaner the waste stream coming in for processing (i.e. very low contamination levels), the greater the potential for the compost produced to be used to protect and restore terrestrial ecosystems.
- Future aspiration to achieve organic compost certification.

SDG 17: Strengthen the means of implementation and revitalise the global partnership for sustainable development

Relevant SDG targets

17.14	Enhance policy coherence for sustainable development.
17.16	Enhance the global partnership for sustainable development, complemented by multi-stakeholder partnerships that mobilise and share knowledge, expertise, technology and financial resources, to support the achievement of the sustainable development goals in all countries, in particular developing countries.
17.17	Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships.

<u>How waste management contributes:</u>

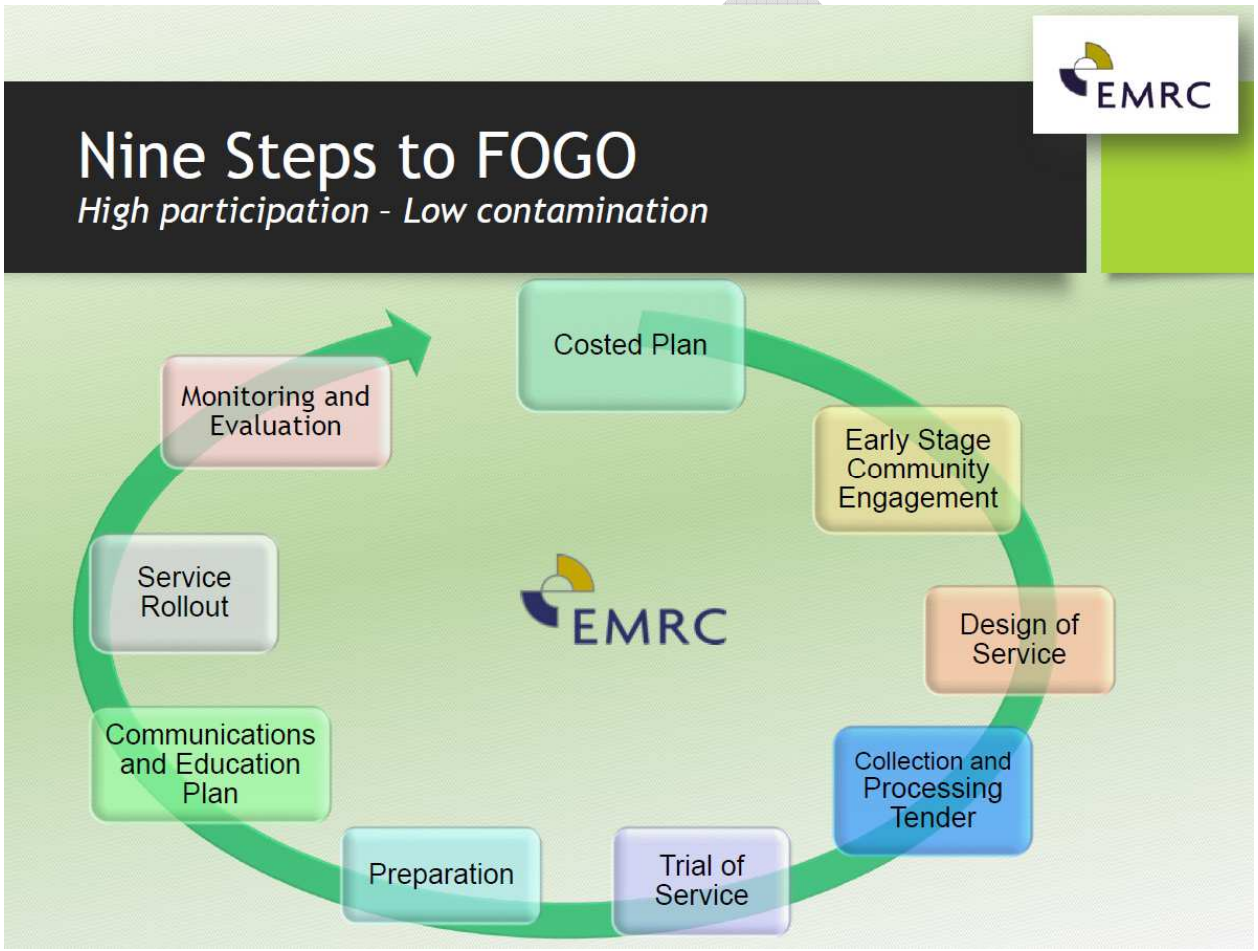
- Partnerships between the EMRC and member Councils on waste management enable a coordinated and cohesive approach to waste management for the region.
- The new Waste Strategy requires each LGA to produce a Local Government Waste Plan. These can be brought into an updated Strategic Waste Management Plan (SWMP) for the region which sets out how the region can work together to achieve the waste targets identified in the Waste Strategy.
- There is the potential for the EMRC assist in developing Waste Plans for the member Councils and possibly others.
- The EMRC partners with other organisations to extend the range of waste management solutions available for the region including development of the Wood Waste to Energy facility at Hazelmere; and contracting with HZI to deliver waste to its waste to energy facility from 2021.
- Partnerships could be developed with universities and research organisations to explore innovative processes
- Ongoing community input into waste management strategy through the Waste Management Community Reference Group which was established in 2002 and is still active.

<u>Potential FOGO impact:</u>

- Partnership between the EMRC, the Town of Bassendean and the City of Bayswater to run the 18-month trial for FOGO collection and processing.
- Once FOGO is proven, the EMRC will work jointly with its other member Councils to plan the roll-out of FOGO across the region, particularly to ensure that residual waste going to the HZI facility has been fully ‘mined’ for recoverable materials.
- The EMRC will seek to establish partnerships with Local Governments and other entities to attract additional FOGO tonnes (up to 40,000 tonnes per annum).

PART FOUR: What we're doing to introduce FOGO in the region

The introduction of FOGO within the region is a two-stage process, with the trial being the first stage of the much wider process of adoption region-wide. The introduction of FOGO will follow these nine steps.



Indicative timeline for FOGO introduction across the region and key activities to be undertaken

	Key activities	**Estimated dates**	**Important individual components and key decision points**
1	EMRC Council approval for the trial	21 March 2019	Completed
2	Authority approvals for FOGO trial at Red Hill	Conclude by 4 Nov 2019	• Licence amendment for trial area submitted 21 March 2019 • Licence amendment issued 31 August 2019 • Prepare and lodge Section 45C amendment application for Lots 9,10 FOGO processing 28 July 2019 • Consultation process (if required) concludes 30 September 2019 • EPA decision November 2019 • Ministerial approval December 2019
3	Infrastructure development for trial	MAF commissioned October/November 2019	• RFT issued 13 July 2019 • Evaluation undertaken and recommendation prepared 21 August 2019 • Council approval September 2019 • Contract issued September 2019 and installation commences • Procure caddies for Town of Bassendean and City of Bayswater • MAF commissioning completed 30 October 2019 • Trial ready to commence 1 July 2020 and conclude Dec 2021 • Report on trial completed thereafter
4	Contract with City of Bayswater and the Town of Bassendean to process FOGO waste	By 30 November 2019	• Under development and to commence deliveries of FOGO by 1 July 2020
5	Research and community education – source separation and contamination management	Ongoing	• Pre-trial survey in Town of Bassendean and City of Bayswater to be undertaken • Bin audit with all member Councils • Commence with generic 'teaser' information about what FOGO is from September 2019 • The EMRC will initially recruit two (2) EMRC FOGO Educators, with plans to recruit up to 6 to cater for the needs of all member Councils • Run intensive communication / education campaign for all member Councils • Bin tagging undertaken in July 2020 • Second bin audit to be undertaken if required • Additional bin tagging undertaken February and June 2021 • Final report on trial December 2021

6	Development and assessment of markets for compost	Commencing August 2019	• Product certification • Conduct field trials across the agriculture sector • Research markets; test feasibility
7	Determine long term FOGO solution for the region	Facility operational by 1 July 2022	• Identify options • Facility inspections and report on findings 28 November 2019 • Research project undertaken on effectiveness of alternative FOGO pathways completed March 2020 • Review results of MAF trials June 2021 • Identify additional FOGO tonnes from Local Governments and other sources (up to 40,000 tonnes per annum), via a Participation Waste Supply Agreement • Prepare RFT documents January 2020 • Issue RFT March 2020 • Finalise tender evaluation May 2020 • Council decision June 2020 • Contract finalised 30 June 2020 • Construction 30 June 2020 – 30 June 2021 • Joint tender for procurement of bins and caddies for remaining 4 member Councils • Commissioning 1 July – 31 December 2021 • Facility ready for operation March 2022 • Contingency allowance of 3 months to 1 July 2022
8	Authority approvals for long term FOGO solution	Lodge June 2020 to December 2020	• Works approval and referral to EPA June 2020 • Approvals received December 2020
9	Member Council FOGO implementation	All Councils participating by 1 July 2022	• Town of Bassendean 1 July 2020 • City of Bayswater 1 July 2020 • City of Swan by 1 July 2022 • City of Belmont by 1 July 2022 • City of Kalamunda by 1 July 2022 • Shire of Mundaring by 1 July 2022

The FOGO trial – stage one

Objectives

The 18-month trial has seven key objectives, to:

1. Prove the effectiveness of the proposed Mobile Aerated Floor (MAF) FOGO processing technology and confirm the EMRC's capabilities
2. Ensure that a marketable compost product can be produced to meet the Australian Standards (AS-4454)
3. Ensure there is a viable market for the compost, thereby confirming the financial and commercial viability of the FOGO strategy
4. Create effective community education and communication that educates and activates community participation in source separation to achieve low levels of contamination
5. Produce communication / education collateral about 'The FOGO Story' that would be made available for use by any Local Government Authority (LGA) adopting a FOGO strategy
6. Confirm that the introduction of FOGO collection and reprocessing results in a true residual waste stream
7. Divert waste from landfill

Components of the FOGO journey

Research and education

1. Development of a regional communication and community engagement program to build awareness and understanding of the region's move towards FOGO initially with the Town of Bassendean and the City of Bayswater. The EMRC will provide the Educators to work initially with both Councils but expand over time to all member Councils.
2. Implementation and testing of targeted communication / community education strategy in the Town of Bassendean and the City of Bayswater to educate residents about appropriate separation behaviour to reduce contamination. This activity is designed to produce as clean a FOGO stream as possible, enabling production of compost to meet AS-4454 and/or organic certification. Lessons learned about effective communication can be utilised to support the large scale roll-outs of the FOGO system, expected to be around 1 July 2022.
3. Undertake pre- and post-trial surveys in the Town of Bassendean and the City of Bayswater to ascertain attitudes and behavior change, and particularly to determine which messages and methods are most effective in creating awareness about the importance of avoiding contamination and undertaking source separation. The results would be shared with the State and other Local Government Associations (LGA's) introducing FOGO strategies.
4. Undertake a bin audit of all six member Councils' general waste bins to determine level of FOGO content. Undertake a follow-up bin audit six months later to capture the bin content data from two distinct seasons – summer and winter.

5. Undertake comprehensive marketing and investigation with possible end users of the composted product to trial and evaluate the product.
6. Production of a final report that provides a quantitative analysis of results of the trial.

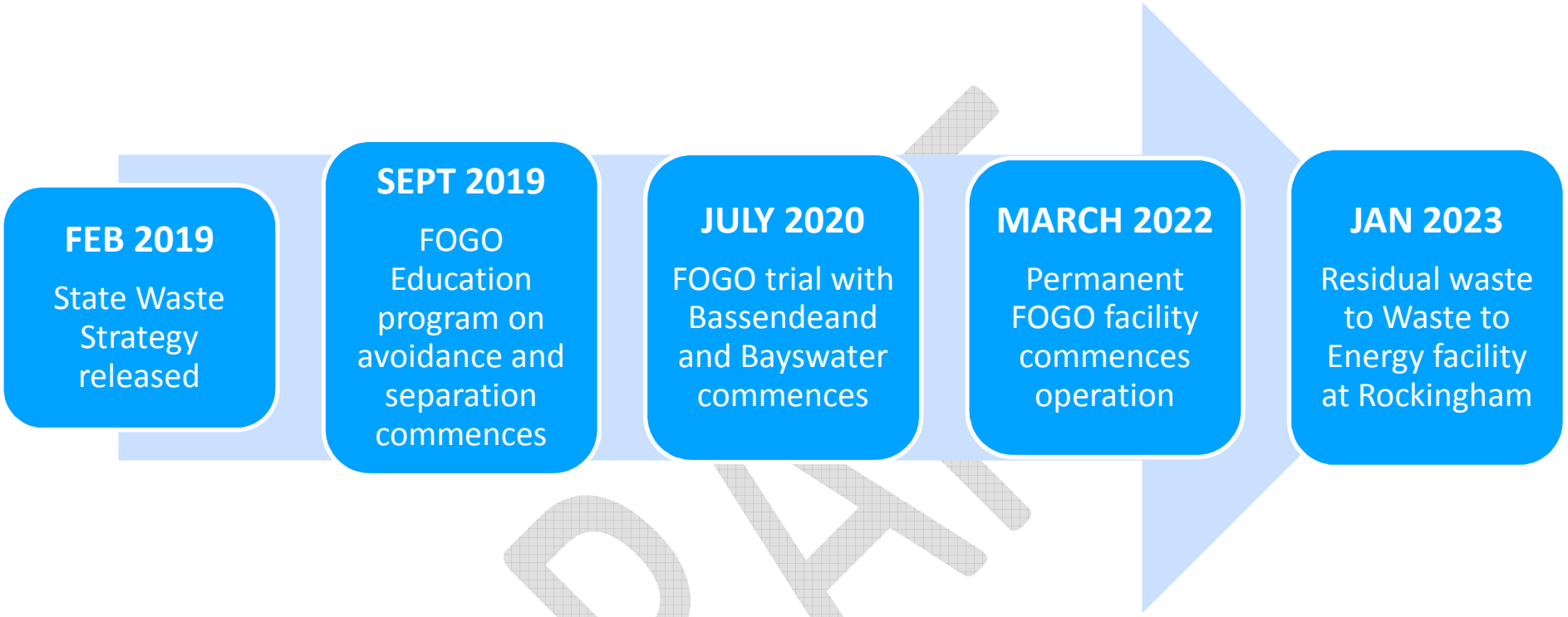
Infrastructure

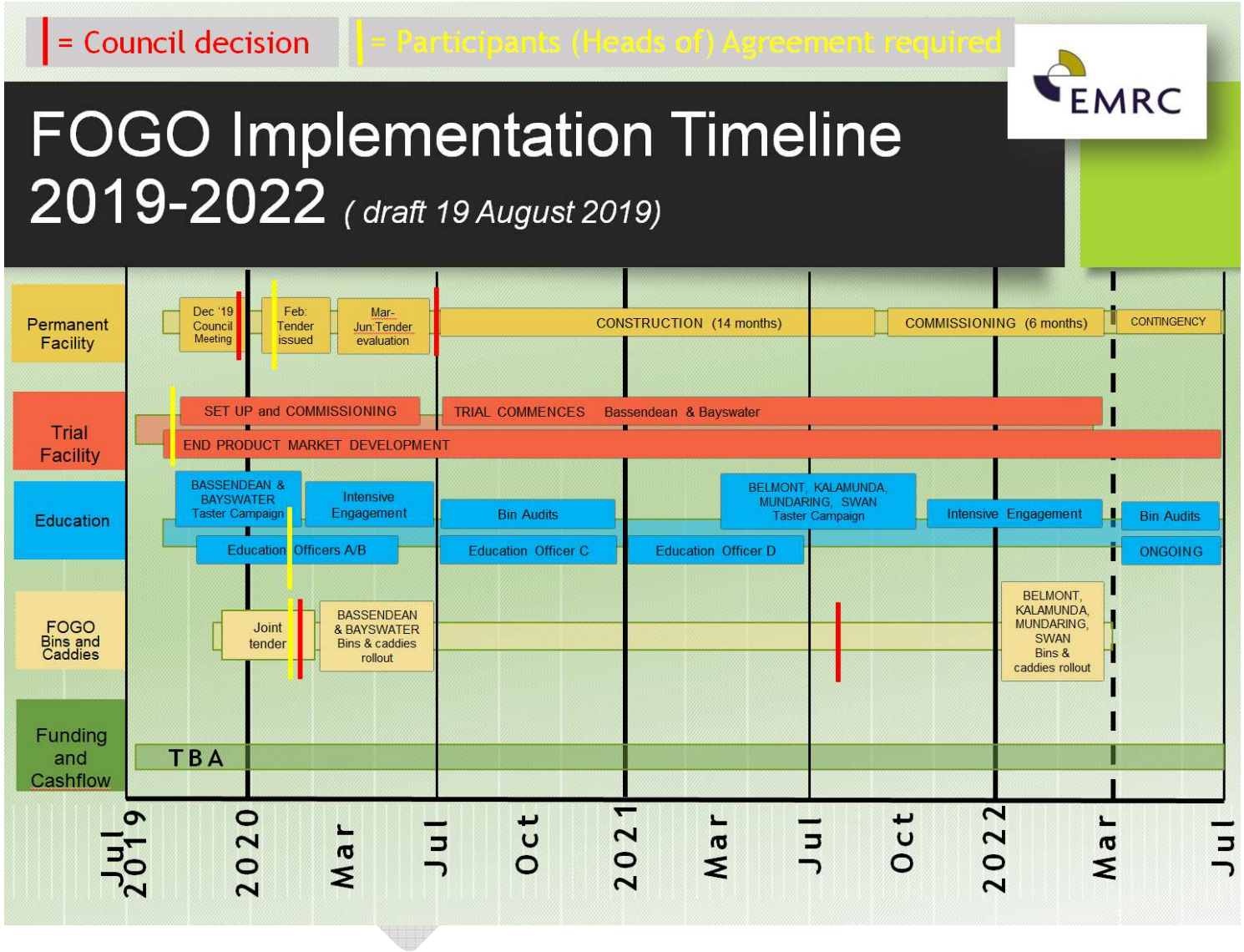
The processing trial facility at the Red Hill Waste Management Facility will utilise the Mobile Aerated Floor (MAF) composting system.

Timeline

The attached timeline covers all elements including: structure and timing for the trial, the long-term permanent FOGO solution, the education component, the bin / caddy procurement, and funding and cash flow.

- The trial facility will proceed utilising the allocation of $400,000 ex GST approved by Council at the 21 March 2019 Ordinary Council Meeting and additional funding will be sought, along with any other budget provisions.
- The education component will commence immediately for the Town of Bassendean and City of Bayswater in readiness for a 1 July 2020 commencement of FOGO collection from their third bin.
- The permanent facility will require a decision by Council at its December 2019 meeting to proceed to tender, with a view to commence the permanent facility by 1 July 2022.
- The procurement for bins and caddies will require a decision by Council to proceed to tender.
- The cash flow and funding will be developed.

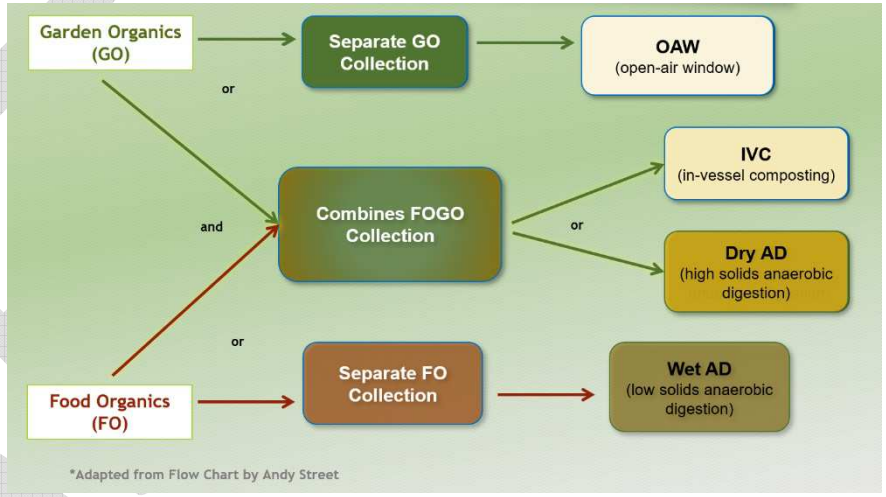

FEB 2019
State Waste Strategy released
SEPT 2019
FOGO Education program on avoidance and separation commences
JULY 2020
FOGO trial with Bassendeand and Bayswater commences
MARCH 2022
Permanent FOGO facility commences operation
JAN 2023
Residual waste to Waste to Energy facility at Rockingham


= Council decision
= Participants (Heads of) Agreement required
EMRC
FOGO Implementation Timeline 2019-2022 (draft 19 August 2019)
Permanent Facility
Trial Facility
Education
FOGO Bins and Caddies
Funding and Cashflow
Dec '19 Council Meeting
Feb: Tender issued
Mar-Jun:Tender evaluation
CONSTRUCTION (14 months)
COMMISSIONING (6 months)
CONTINGENCY
SET UP and COMMISSIONING
TRIAL COMMENCES Bassendean & Bayswater
END PRODUCT MARKET DEVELOPMENT
BASSENDEAN & BAYSWATER Taster Campaign
Intensive Engagement
Bin Audits
BELMONT, KALAMUNDA, MUNDARING, SWAN Taster Campaign
Intensive Engagement
Bin Audits
Education Officers A/B
Education Officer C
Education Officer D
ONGOING
Joint tender
BASSENDEAN & BAYSWATER Bins & caddies rollout
BELMONT, KALAMUNDA, MUNDARING, SWAN Bins & caddies rollout
TBA
Jul 2019
2020
Mar
Jul
Oct
2021
Mar
Jul
Oct
2022
Mar
Jul

The permanent (large scale) FOGO solution – stage two

The long-term options for FOGO processing will be investigated concurrently with the FOGO processing trial. Research on options for the long-term processing facility will include:

- Facility inspections to review best practice operations in other parts of Australia;
- Ongoing monitoring and review of results from the trial;
- Review of technology;
- Evaluate and analyse the effectiveness of alternative FOGO pathways;
- Investigate operating models including Design Build, Operate and Maintain (DBOM) Contractor model and other models; and
- Undertake extensive procurement process in readiness for a 1 July 2022 start.



In conclusion

While the EMRC will remain a best practice landfill operator, the State Waste Strategy 2030 states that by 2030 only 15% of material can be landfilled. This means the EMRC and its member Councils must continue to actively explore effective methods to recover waste, and to extend our operations further up the Waste Hierarchy. The primary strategy outlined in this document – FOGO recovery and processing – supported by treatment of residual waste through the Waste to Energy process, will ensure we reach the State's targets, meet the expectations of our communities while also operating sustainably.

Further, our decision to establish a permanent FOGO processing facility provides the opportunity to offer a service to other local governments. Our proposed FOGO facility will have the capacity to process 100,000 tonnes of FOGO per year. The EMRC member Councils supply up to 60,000 tonnes annually, with the remaining 40,000 tonnes of capacity being offered on a fee for service basis to others.

Effectiveness of the FOGO solution rests on 'High participation; low contamination". This is a program we must work on together as a region, with consistent and coordinated communication, and close monitoring to build community commitment to source separation to achieve the lowest contamination rates possible and where recycled content is the norm rather than the exception.

11.5 PURCHASE OF A TRACK LOADER

REFERENCE: D2019/13308

PURPOSE OF REPORT

The purpose of this report is to recommend acceptance of the quotation for the supply and delivery of a track loader submitted by Westrac Pty Ltd for use at the Red Hill Waste Management Facility.

KEY ISSUES AND RECOMMENDATION(S)

- One of the EMRC's two (2) track loaders located at the Red Hill Waste Management Facility has reached its replacement point based on operating hours and operability.
- Quotations were sought for a 25-30 tonne track loader using the WALGA e-quote system for replacement plant including a maintenance service agreement.
- One (1) quotation was received.

Recommendation(s)

That Council accept:

1. The quotation for the supply and delivery to the Red Hill Waste Management Facility of one (1) Caterpillar 973K Track Loader including an extended five (5) year/8,000 hour extended warranty, submitted by Westrac Pty Ltd, for the sum of $763,000 (ex GST).
2. The offer to undertake a fixed price preventative maintenance agreement for the Caterpillar 973K Track Loader to be located at the Red Hill Waste Management Facility for a five (5) year/8,000 hour period submitted by Westrac Pty Ltd at a cost of $8.83/operating hour (ex GST) subject to bi-annual adjustments in January and July of each year based on Caterpillar's bi-annual price review for parts and Westrac's annual labour rate review.

SOURCE OF REPORT

Director Waste Services

BACKGROUND

Under the EMRC's plant replacement programme, a Cat 973D Track Loader (P3715) utilised at the Red Hill Waste Management Facility is due for replacement having reached 8,000 hours of service and its limit of warranty and reliability.

The EMRC's preference is for similar specification replacement track loader in the 25-30 tonne range to enable efficient spreading of waste.

REPORT

A quotation for the replacement of a track loader was sought using the WALGA e-quote system in July 2019. There were 18 recipients of the e-quote however only one (1) company was able to quote for this Request for Quotation which has been evaluated by Waste Services staff against the selection criteria detailed in the request for quotation specification.

The quotation was received from Westrac Pty Ltd for a Caterpillar 973K Track Loader.

Item 11.5 continued

Selection Criteria and Rating Scale

The submission was evaluated based on the criteria requested via the WALGA e-quote.

Qualitative criteria

The submission was scored against the qualitative criteria below.

Description of Qualitative criteria		Weighting
a)	Specifications	40%
b)	Quoted Price	40%
c)	Extended Warranty – 5 year/8,000 hours	10%
d)	Service Agreement – 5 year/8,000 hours	10%

The compliance check in the evaluation process determined that the single submission from Westrac Equipment Pty Ltd was compliant with all the items in the specification, including an extended warranty and service agreement.

The evaluation process determined the submission from Westrac Pty Ltd for the Caterpillar 973K Track Loader included all the items in the specification, including an extended warranty for five (5) years/8,000 hours, preventative maintenance agreement with servicing intervals of 250 hours quote for five (5) years/8,000 hours at $8.83/hour totalling $70,679.00 (ex GST) and which meets the EMRC's requirements for machine power and bucket capacity in being able to quickly move incoming waste at the tip face during busy periods.

The service agreement price is subject to bi-annual adjustments in January and July of each year based on Caterpillar's bi-annual price review for parts and Westrac's annual labour rate review.

The quotation from Westrac is recommended for acceptance as the preferred supplier.

STRATEGIC/POLICY IMPLICATIONS

Key Result Area 1 – Environmental Sustainability

1.1 To provide sustainable waste disposal operations

FINANCIAL IMPLICATIONS

The adopted 2019/2020 Annual Budget includes a capital expenditure provision totalling $3.595m for plant replacement including the track loader. The cost for the purchase of the Caterpillar 973K Track Loader is $763,000 (ex GST) plus a preventative maintenance cost for five (5) years/8,000 hours of $70,679.00 (ex GST), a total of $833,679.00 (ex GST).

SUSTAINABILITY IMPLICATIONS

Nil

Item 11.5 continued

MEMBER COUNCIL IMPLICATIONS

Member Council	Implication Details
Town of Bassendean	Nil
City of Bayswater	
City of Belmont	
City of Kalamunda	
Shire of Mundaring	
City of Swan	

ATTACHMENT(S)

Nil

VOTING REQUIREMENT

Simple Majority

RECOMMENDATION(S)

That Council accept:

1. The quotation for the supply and delivery to the Red Hill Waste Management Facility of one (1) Caterpillar 973K Track Loader including an extended five (5) year/8,000 hour extended warranty, submitted by Westrac Pty Ltd, for the sum of $763,000 (ex GST).
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WAC RECOMMENDATION(S)

MOVED CR MCDONNELL SECONDED CR STALLARD

That Council Accept:

1. The quotation for the supply and delivery to the Red Hill Waste Management Facility of one (1) Caterpillar 973K Track Loader including an extended five (5) year/8,000 hour extended warranty, submitted by Westrac Pty Ltd, for the sum of $763,000 (ex GST).
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CARRIED UNANIMOUSLY

COUNCIL RESOLUTION(S)

MOVED CR SECONDED CR

11.6 ITEMS CONTAINED IN THE INFORMATION BULLETIN

REFERENCE: Ref: D2019/12678

The following item is included in the Information Bulletin, which accompanies the Agenda.

1. WASTE SERVICES

1.1 COUNCIL TONNAGE COMPARISONS AS AT JULY 2019 (Ref: D2019/12679)

RECOMMENDATION

That the Waste Advisory Committee notes the item contained in the Information Bulletin accompanying the 5 September 2019 Waste Advisory Committee Agenda.

WAC RESOLUTION(S)

MOVED CR MCDONNELL SECONDED CR STALLARD

THAT THE WASTE ADVISORY COMMITTEE NOTES THE ITEM CONTAINED IN THE INFORMATION BULLETIN ACCOMPANYING THE 9 SEPTEMBER 2019 WASTE ADVISORY COMMITTEE AGENDA.

CARRIED UNANIMOUSLY

12 REPORTS OF DELEGATES

Nil

13 NEW BUSINESS OF AN URGENT NATURE APPROVED BY THE CHAIRMAN OR PRESIDING MEMBER OR BY DECISION OF MEETING

Nil

14 CONFIDENTIAL MATTERS FOR WHICH THE MEETING MAY BE CLOSED TO THE PUBLIC

Items 14.1 Hazelmere Wood Waste to Energy Plant Update and 14.2 Resource Recovery Facility Update were dealt prior to Item 5.1 Hazelmere Wood Waste Transfer Station Update.

RECOMMENDATION (Closing meeting to the public)

That the meeting be closed to members of the public in accordance with Section 5.23 (2)(c) of the *Local Government Act 1995* for the purpose of dealing with matters of a confidential nature.

WAC RESOLUTION

MOVED CR MCDONNELL SECONDED CR LAVELL

THAT WITH THE EXCEPTION OF THE CEO, DIRECTOR WASTE SERVICES, DIRECTOR CORPORATE SERVICES, DIRECTOR REGIONAL SERVICES, MANAGER RESOURCE RECOVERY, MANAGER ENGINEERING AND WASTE OPERATIONS, MR MOHEN AND ADMINISTRATION OFFICER WASTE SERVICES, THE MEETING BE CLOSED TO MEMBERS OF THE PUBLIC IN ACCORDANCE WITH SECTION 5.23 (2) OF THE *LOCAL GOVERNMENT ACT 1995* FOR THE PURPOSE OF DEALING WITH MATTERS OF A CONFIDENTIAL NATURE.

CARRIED UNANIMOUSLY

The doors of the meeting were closed at 5:08pm and members of the public departed the Council Chambers.

The Chief Executive Officer, Director Corporate Services, Director Waste Services, Director Regional Services, Manager Resource Recovery, Manager Engineering and Waste Operations, Mr Mohen, and Administration Officer Waste Services remained in the Council Chambers.

Cr Daw entered the Council Chambers at 5:10pm.

14.1 HAZELMERE WOOD WASTE TO ENERGY PLANT UPDATE

REFERENCE: D2019/10941

This item is recommended to be confidential because it contains matters of a commercial-in-confidence nature.

The Committee considered the Confidential Item circulated with the Agenda under Separate Cover.

Mr Mohen departed the meeting immediately at the conclusion of Item 14.1 Hazelmere Wood Waste To Energy Plant Update at 5:36pm.

14.2 RESOURCE RECOVERY FACILITY UPDATE

REFERENCE: D2019/12681

This item is recommended to be confidential because it contains matters of a commercial-in-confidence nature.

The Committee considered the Confidential Item circulated with the Agenda under Separate Cover.

Item 14 continued

RECOMMENDATION [Meeting re-opened to the public]

That the meeting be re-opened, the members of the public be invited to return to the meeting and the recommendations passed behind closed doors be recorded.

WAC RESOLUTION

MOVED CR LAVELL SECONDED CR MCDONNELL

THAT THE MEETING BE RE-OPENED, THE MEMBERS OF THE PUBLIC BE INVITED TO RETURN TO THE MEETING AND THE RECOMMENDATIONS PASSED BEHIND CLOSED DOORS BE RECORDED.

CARRIED UNANIMOUSLY

The doors of the meeting were re-opened at 5:38pm and members of the public returned to the Council Chambers.

Recording of the recommendations passed behind closed doors, namely:

14.1 HAZELMERE WOOD WASTE TO ENERGY PLANT UPDATE

REFERENCE: D2019/10941

WAC RECOMMENDATION(S)

MOVED CR MCDONNELL SECONDED CR MCKENNA

That:

1. Council authorise the Chief Executive Officer to instruct EMRC's lawyers to issue the Default Notices pursuant to clause 11 of the General Security Agreement.
2. Council authorise the Chief Executive Officer to enter into the Deed of Variation with Anergy Australia Pty Ltd to the value specified in the Deed if Anergy Pty Ltd settles the debt owed to Callidus and the petition is withdrawn.
3. Council authorise a contingency allowance on the cost to completion to the value specified in the report.
4. Council, authorise the Chief Executive Officer to enter into an IP License Deed with Anergy Pte Ltd for a licence to the intellectual property associated with the design, operation and maintenance of the Hazelmere Wood Waste to Energy Plant.
5. An updated business case be presented for adoption at the next Council Meeting.
6. Council requests the CEO commence discussions for a royalty agreement.
7. The report remains confidential and be certified by the Chairman and CEO.

CARRIED UNANIMOUSLY

14.2 RESOURCE RECOVERY FACILITY UPDATE

REFERENCE: D2019/12681

WAC RECOMMENDATION(S)

MOVED CR MCDONNELL SECONDED MR COTEN

That:

1. The report be received.
2. The report and attachment remains confidential and be certified by the Chairman and CEO.

CARRIED UNANIMOUSLY

15 FUTURE MEETINGS OF THE WASTE ADVISORY COMMITTEE

The next meeting of the Waste Advisory Committee will be held on ***Thursday, 10 October 2019 (if required)*** at the EMRC Administration Office, 1st Floor, 226 Great Eastern Highway, Belmont WA 6104 commencing at 5:00pm.

Future Meetings 2019

Thursday	10	October	(if required)	at	EMRC Administration Office
Thursday	21	November	(if required)	at	EMRC Administration Office

16 DECLARATION OF CLOSURE OF MEETING

There being no further business the meeting was closed at 6:34pm.