MINUTES

CERTIFICATION OF CONFIRMATION OF WASTE ADVISORY COMMITTEE MINUTES

9 MAY 2019

I, Cr Steve Wolff, hereby certify that the minutes from the Waste Advisory Committee Meeting held on 9 May 2019 pages (1) to (47) were confirmed at a Committee meeting held on 6 June 2019

Signature

Cr Steve Wolff
Person presiding at Meeting

WASTE ADVISORY COMMITTEE

MINUTES

9 May 2019

(REF: D2019/05856)

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, 9 May 2019** The meeting commenced at **5:00pm**.

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1 DECLARATION OF OPENING AND ANNOUNCEMENT OF VISITORS

The Acting Chief Executive Officer opened the meeting at 5:00pm, welcomed members to the inaugural Waste Advisory Committee meeting and acknowledged the traditional custodians of the land on which the meeting was held and paid respects to the elders past, present and future.

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

Committee Members

Cr Melissa Mykytiuk	EMRC Member	Town of Bassendean
Cr Barry McKenna	EMRC Member	City of Bayswater
Cr Steve Wolff	EMRC Member	City of Belmont
Cr Dylan O'Connor	EMRC Member	City of Kalamunda
Cr David Lavell	EMRC Member	Shire of Mundaring
Cr Adam Kovalevs	EMRC Member	City of Swan
Mr Doug Pearson	Director Works and Infrastructure	City of Bayswater
Mr Alan Sheridan	Director Infrastructure Services	City of Belmont
Mr Brett Jackson	Director Asset Services	City of Kalamunda
Mr Shane Purdy *(from 5:04pm)*	Director Infrastructure Services	Shire of Mundaring
Mr Jim Coten	Executive Manager Operations	City of Swan
Mrs Wendy Harris	Acting Chief Executive Officer	EMRC

Apologies

Mr Simon Stewert-Dawkins	Director Operational Services	Town of Bassendean

EMRC Officers

Mr Stephen Fitzpatrick	Director Waste Services
Mr Hua Jer Liew	Director Corporate Services
Mr Dave Beresford	Manager Resource Recovery
Ms Annette Rakich	Administration Support Officer (Minutes)

3 DISCLOSURE OF INTERESTS

Nil

4 ANNOUNCEMENTS BY THE CHAIRMAN OR PRESIDING MEMBER WITHOUT DISCUSSION

Nil

5 ELECTION OF A CHAIRMAN AND DEPUTY CHAIRMAN OF THE WASTE ADVISORY COMMITTEE (WAC)

5.1 ELECTION OF A CHAIRMAN OF THE WASTE ADVISORY COMMITTEE (WAC)

REFERENCE: D2019/04812

PURPOSE OF REPORT

The purpose of this report is to provide for an election to be conducted for the Office of Chairman of the Waste Advisory Committee (WAC).

KEY POINTS AND RECOMMENDATION(S)

- It is a statutory requirement that the Committee elect a Chairman at the first meeting of the Waste Advisory Committee.

Recommendation(s)

That the members of the Waste Advisory Committee elect a Chairman.

SOURCE OF REPORT

Director Corporate Services

BACKGROUND

At the Ordinary Meeting of Council held on Thursday 21 March 2019, Council established the Waste Advisory Committee by merging the functions of the Technical Advisory Committee (TAC) and the Resource Recovery Committee (RRC) (Ref: D2019/03379).

WAC MEMBERS

The following members were appointed to the WAC at the same Council meeting held on 21 March 2019:

COUNCILLOR MEMBERS

Cr Melissa Mykytiuk	Town of Bassendean
Cr Barry McKenna	City of Bayswater
Cr Steve Wolff	City of Belmont
Cr Dylan O'Connor	City of Kalamunda
Cr David Lavell	Shire of Mundaring
Cr David McDonnell	City of Swan

OFFICER MEMBERS

Director Operational Services	(Mr Simon Stewert-Dawkins)	Town of Bassendean
Director Works and Infrastructure	(Mr Doug Pearson)	City of Bayswater
Director Infrastructure Services	(Mr Alan Sheridan)	City of Belmont
Director Asset Services	(Mr Brett Jackson)	City of Kalamunda
Director Infrastructure Services	(Mr Shane Purdy)	Shire of Mundaring
Executive Manager Operations	(Mr Jim Coten)	City of Swan
Chief Executive Officer*	(Mrs Wendy Harris)	EMRC

**non-voting member*

Item 5.1 continued

In accordance with section 5.12(1) of the *Local Government Act 1995* (the Act), the members of a committee are to elect a presiding member from amongst themselves in accordance with Schedule 2.3, Division 1. In accordance with section 5.3 of the Terms of Reference for the WAC, the Chair and Deputy Chair of the Committee shall be elected representatives (Councillors).

It is a requirement of Schedule 2.3 of the Act that the election is conducted by the Chief Executive Officer (CEO) and the nominations for the Office are to be given to the CEO in writing before the meeting or during the meeting before the close of nominations. Furthermore, if a member is nominated by another member the CEO is not to accept the nomination unless the nominee has advised the CEO, orally or in writing, that he or she is willing to be nominated for the Office. Members are to vote on the matter by secret ballot.

The procedure outlined in Schedule 2.3 of the Act will be followed if there is an equality of votes.

REPORT

The CEO will preside at the meeting until the Office of Chairman of the WAC is filled.

The following material accompanies the agenda for this meeting as a means of assisting members of the Committee to nominate themselves or another member for the Office of Chairman of the WAC:

1. WAC Terms of Reference;
2. A blank nomination form for the Office of Chairman of the WAC, nominate oneself;
3. A blank nomination form for the Office of Chairman of the WAC, nominate another; and
4. A blank ballot paper for Election of Chairman of the WAC.

Ballot papers will be made available prior to voting.

The completed nomination forms are to be given to the CEO before the meeting or when the CEO calls for them when dealing with this item at the meeting.

STRATEGIC/POLICY IMPLICATIONS

Council Policy 2.1 Committees of Council provides for the establishment of the Waste Advisory Committee

Key Result Area 3 – Good Governance

3.3 To provide responsible and accountable governance and management of the EMRC

FINANCIAL IMPLICATIONS

Nil

SUSTAINABILITY IMPLICATIONS

Nil

Item 5.1 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)

1. WAC Terms of Reference (Ref: D2019/06108)
2. A blank nomination form for the Office of Chairman of the WAC, nominate oneself (Ref: D2019/06109)
3. A blank nomination form for the Office of Chairman of the WAC, nominate another (Ref: D2019/06109)
4. Ballot paper – Election of WAC Chairman (Ref: D2019/06112)

VOTING REQUIREMENT

Secret Ballot

RECOMMENDATION(S)

That the members of the Waste Advisory Committee elect a Chairman.

The Acting CEO called for nominations for the Office of Chairman of the Waste Advisory Committee.

Cr Wolf nominated himself.

The Acting CEO called for further nominations. No further nominations were received and the Acting CEO closed the nominations.

ANNOUNCEMENT: OF THE OFFICE OF CHAIRMAN

The Acting CEO declared, unopposed, Cr Wolff as Chairman of the Waste Advisory Committee for the term commencing 9 May 2019 until the next local government election in 2019.

The Acting CEO congratulated Cr Wolff and vacated the Chair at 5:04pm.

At 5:04pm, Cr Wolf took the Chair.

Mr Purdy entered the meeting at 5:04pm

TERMS OF REFERENCE

WASTE ADVISORY COMMITTEE

1. OBJECTIVES OF COMMITTEE

The Waste Advisory Committee (WAC) is a formally appointed committee of Council and is responsible to that body. It has been established to:

(a) review and provide reports on technical matters and recommendations to Council
(b) advise on resource recovery matters for the Eastern Metropolitan Regional Council
(c) advise on other waste related matters

2. RESPONSIBILITIES

The Waste Advisory Committee is to give consideration and prepare recommendations to Council in relation to:

(a) Waste management, including the removal, processing, treatment and disposal of waste;

(b) Waste related environmental and risk management;

(c) Regional and Community Waste Education/Engagement Initiatives;

(d) Activities of the Waste Management Community Reference Group; and

(e) Other relevant waste related matters referred to it from time to time.

3. MEMBERSHIP

3.1. The Waste Advisory Recovery Committee will comprise of:

(a) One Councillor from each of the member Councils;

(b) A Principal Officer of each of EMRC's participant member Councils nominated by the member Council Chief Executive Officer; and

(c) The Chief Executive Officer of the Eastern Metropolitan Regional Council (EMRC) or nominee. (Non-Voting Member)

3.2. Council will appoint deputy members to members of the Council on the WAC.

3.3. Member Council Chief Executive Officers will appoint a deputy principal officer member to on the WAC.

3.4. Members and Deputies will be appointed following each ordinary Council election for a period of up to two years up or such time until the next ordinary Council election whichever is earlier.

4. MEETINGS

4.1. The WAC shall hold regular meetings at such times and on such days as the Council may determine by resolution.

4.2. Additional meetings will be convened at the discretion of the Chairperson.

5. OPERATING PROCEDURES

5.1. All meetings of the WAC are to be conducted in accordance with the Local Government *Act 1995*, associated Regulations and the *EMRC Standing Orders Local Law 2013*.

5.2. A quorum for a meeting of the Committee shall be at least 50% of the number of voting offices (whether vacant or not) of members of the Committee.

5.3. The Chair and Deputy Chair of Committee shall be elected representatives (Councillors) from the member Councils.

5.4. Voting

(a) All decisions of the Committee shall be made on the basis of a simple majority decision of the members present or, if another kind of majority has been prescribed by regulations for the particular kind of decision, by that kind of majority.

(b) The Chief Executive Officer of the EMRC or nominee may participate in meeting discussions but is not entitled to vote.

(c) If the decision results in a tied vote, the person presiding is to cast a second vote.

(d) Persons other than Committee members, and the Chief Executive Officer of the EMRC or nominee are not entitled to cast a vote.

(e) All other aspects related to voting procedure shall be consistent with relevant sections of the *EMRC Standing Orders Local Law 2013*.

5.5. Other EMRC staff or member Council staff may attend meetings, at the discretion of the EMRC Chief Executive Officer and/or the Committee Chairperson, to provide advice and information when required.

5.6. The EMRC Chief Executive Officer may invite the attendance of any particular additional officer through the participant member Council Chief Executive Officer.

5.7. The EMRC Chief Executive Officer may invite other additional persons, including consultants, to provide advice and information when required.

6. REPORTING:

6.1 The Committee shall after every meeting forward the minutes of that meeting to the next Ordinary Meeting of Council, including a report explaining any specific recommendations and key outcomes.

7. DELEGATED POWER

7.1 The Waste Advisory Committee has no delegated powers and no authority to implement its recommendations.

Related Documentation:

Policy 2.1 Committees of Council

EMRC Standing Orders Local Law 2013

EMRC Code of Conduct

Administration:

Adopted / Reviewed by Council:	21 March 2019
Next Review:	Following the Ordinary Elections in 2021
Responsible Directorate	Waste Services

Nomination for Chairman of the Waste Advisory Committee

To the Chief Executive Officer

I hereby nominate myself, _____ for the position of Chairman of the Eastern Metropolitan Regional Council Waste Advisory Committee for the term of Office commencing on the date of the election and continuing until the next ordinary elections day and/or other circumstances occur in accordance with section 5.11 of the *Local Government Act 1995*.

Signed: _____ Date: _____

Nomination for Chairman of the Waste Advisory Committee

To the Chief Executive Officer

I hereby nominate _____ for the position of Chairman of the Eastern Metropolitan Regional Council Waste Advisory Committee for the term of Office commencing on the date of the election and continuing until the next ordinary elections day and/or other circumstances occur in accordance with section 5.11 of the *Local Government Act 1995*.

Signed: _____ Date: _____

***I _____ hereby certify that I accept the above nomination to the position of Chairman of the Eastern Metropolitan Regional Council Waste Advisory Committee.**

Signed: _____ Date: _____

***This certificate is to be completed when a Representative is nominated by another Representative.**

Eastern Metropolitan Regional Council
Waste Advisory Committee
9 May 2019

BALLOT PAPER FOR THE

ELECTION OF THE WASTE ADVISORY COMMITTEE CHAIRMAN

HOW TO VOTE

Place a tick ☑ in the box next to the candidate you want to elect.
Do not make any other marks on the ballot paper.

First Name, Last name	☐
First Name, Last name	☐
First Name, Last name	☐

5.2 ELECTION OF A DEPUTY CHAIRMAN OF THE WASTE ADVISORY COMMITTEE (WAC)

REFERENCE: D2019/04813

PURPOSE OF REPORT

The purpose of this report is to provide for an election to be conducted for the Office of Deputy Chairman of the Waste Advisory Committee (WAC).

KEY POINTS AND RECOMMENDATION(S)

- In accordance with section 5.12(2) of the *Local Government Act 1995*, the members of a committee may elect a deputy presiding member from amongst themselves.

Recommendation(s)

That the members of the Waste Advisory Committee elect a Deputy Chairman.

SOURCE OF REPORT

Director Corporate Services

BACKGROUND

At the Ordinary Meeting of Council held on Thursday 21 March 2019, Council established the Waste Advisory Committee by merging the functions of the Technical Advisory Committee (TAC) and the Resource Recovery Committee (RRC) (Ref: D2019/03379).

WAC MEMBERS

The following members were appointed to the WAC at the same Council meeting held on 21 March 2019:

COUNCILLOR MEMBERS

Cr Melissa Mykytiuk	Town of Bassendean
Cr Barry McKenna	City of Bayswater
Cr Steve Wolff	City of Belmont
Cr Dylan O'Connor	City of Kalamunda
Cr David Lavell	Shire of Mundaring
Cr David McDonnell	City of Swan

OFFICER MEMBERS

Director Operational Services	(Mr Simon Stewert-Dawkins)	Town of Bassendean
Director Works and Infrastructure	(Mr Doug Pearson)	City of Bayswater
Director Infrastructure Services	(Mr Alan Sheridan)	City of Belmont
Director Asset Services	(Mr Brett Jackson)	City of Kalamunda
Director Infrastructure Services	(Mr Shane Purdy)	Shire of Mundaring
Executive Manager Operations	(Mr Jim Coten)	City of Swan
Chief Executive Officer*	(Mrs Wendy Harris)	EMRC

**non-voting member*

Item 5.2 continued

In accordance with section 5.12(2) of the *Local Government Act 1995* (the Act), the members of a committee may elect a deputy presiding member from amongst themselves. In accordance with section 5.3 of the Terms of Reference for the WAC, the Chair and Deputy Chair of the Committee shall be elected representatives (Councillors).

It is a requirement of Schedule 2.3 of the Act that the election of the Deputy Chairman is conducted by the Chairman and the nominations for the Office are to be given to the Chief Executive Officer (CEO) in writing before the meeting or the Chairman during the meeting before the close of nominations. Furthermore, if a member is nominated by another member, the Chairman is not to accept the nomination unless the nominee has advised the Chairman, orally or in writing, that he or she is willing to be nominated for the Office. Members are to vote on the matter by secret ballot.

The procedure outlined in Schedule 2.3 of the Act will be followed if there is an equality of votes.

REPORT

The following material accompanies the agenda for this meeting as a means of assisting members of the Committee to nominate themselves or another member for the Office of Deputy Chairman of the WAC:

1. A blank nomination form for the Office of Deputy Chairman of the WAC, nominate oneself;
2. A blank nomination form for the Office of Deputy Chairman of the WAC, nominate another; and
3. A blank ballot paper for Election of Deputy Chairman of the WAC.

Ballot papers will be made available prior to voting.

The completed nomination forms are to be given to the CEO before the meeting or when called for by the Chairman when dealing with this item at the meeting.

STRATEGIC/POLICY IMPLICATIONS

Council Policy 2.1 Committees of Council provides for the establishment of the Waste Advisory Committee

Key Result Area 3 – Good Governance

3.3 To provide responsible and accountable governance and management of the EMRC

FINANCIAL IMPLICATIONS

Nil

SUSTAINABILITY IMPLICATIONS

Nil

Item 5.2 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)

1. A blank nomination form for the Office of Deputy Chairman of the WAC, nominate oneself (Ref: D2019/06113)
2. A blank nomination form for the Office of Deputy Chairman of the WAC, nominate another (Ref: D2019/06113)
3. Ballot paper – Election of WAC Deputy Chairman (Ref: D2019/06114)

VOTING REQUIREMENT

Secret Ballot

RECOMMENDATION(S)

That the members of the Waste Advisory Committee elect a Deputy Chairman.

The Chairman called for nominations for the Office of Deputy Chairman of the Waste Advisory Committee.

Cr Lavell nominated Cr Mykytiuk who accepted the nomination.

No further nominations were received.

ANNOUNCEMENT: OF THE OFFICE OF DEPUTY CHAIRMAN

The Chairman declared, unopposed, Cr Mykytiuk as Deputy Chairman of the Waste Advisory Committee for the term commencing 9 May 2019 until the next local government election in 2019.

The Chairman congratulated Cr Mykytiuk.

Nomination for Deputy Chairman of the Waste Advisory Committee

To the Chief Executive Officer

I hereby nominate myself, _____ for the position of Deputy Chairman of the Eastern Metropolitan Regional Council Waste Advisory Committee for the term of Office commencing on the date of the election and continuing until the next ordinary elections day and/or other circumstances occur in accordance with section 5.11 of the *Local Government Act 1995*.

Signed: _____ Date: _____

Nomination for Deputy Chairman of the Waste Advisory Committee

To the Chief Executive Officer

I hereby nominate _____ for the position of Deputy Chairman of the Eastern Metropolitan Regional Council Waste Advisory Committee for the term of Office commencing on the date of the election and continuing until the next ordinary elections day and/or other circumstances occur in accordance with section 5.11 of the *Local Government Act 1995*.

Signed: _____ Date: _____

***I _____ hereby certify that I accept the above nomination to the position of Deputy Chairman of the Eastern Metropolitan Regional Council Waste Advisory Committee.**

Signed: _____ Date: _____

***This certificate is to be completed when a Representative is nominated by another Representative.**

Eastern Metropolitan Regional Council
Waste Advisory Committee
9 May 2019

BALLOT PAPER FOR THE

ELECTION OF THE WASTE ADVISORY COMMITTEE DEPUTY CHAIRMAN

HOW TO VOTE

Place a tick ☑ in the box next to the candidate you want to elect.
Do not make any other marks on the ballot paper.

First Name, Last name	☐
First Name, Last name	☐
First Name, Last name	☐

6 PETITIONS, DEPUTATIONS AND PRESENTATIONS

Nil

7 CONFIRMATION OF MINUTES OF PREVIOUS MEETINGS

Nil

8 QUESTIONS BY MEMBERS OF WHICH DUE NOTICE HAS BEEN GIVEN

Nil

9 QUESTIONS BY MEMBERS WITHOUT NOTICE

Nil

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

Nil

11 BUSINESS NOT DEALT WITH FROM A PREVIOUS MEETING

Nil

12 REPORTS OF EMPLOYEES

12.1 REVIEW OF SECONDARY WASTE DISPOSAL CHARGE

REFERENCE: D2019/06104

PURPOSE OF REPORT

The purpose of this report is to obtain Council approval for retaining the member Council Secondary Waste Disposal Charge on waste disposal at the Red Hill Waste Management Facility at the current level of $38.00/tonne ex GST.

KEY POINTS AND RECOMMENDATION(S)

- In June 1999 Council resolved that the proposed secondary waste processing facilities be partially funded by applying a 'secondary waste levy' of $2.00 per tonne to the member Council waste disposal charge and for that to increase each year by $2.00 per tonne.
- At present, the Secondary Waste Charge component of the member Council rate is $38.00/tonne (ex GST) for 2018/2019.
- The EMRC's contract with Hitachi Zosen Innova (HZI) Consortium is expected to become unconditional this year but will not come into effect until the plant is completed in three (3) years' time in 2022.
- The EMRC has commenced development of a strategy to process food organics and garden organics (FOGO) waste at the Red Hill Waste Management Facility initially for the Town of Bassendean.
- It is proposed to retain the Secondary Waste Charge as a component of the member Council waste disposal rate at the Red Hill Waste Management Facility but to leave it at the current rate of $38.00/tonne ex GST until further notice.

Recommendation(s)

That Council, by absolute majority, in accordance with s.6.16(1) the *Local Government Act 1995*, adopts the Secondary Waste Charge rate of $38.00/tonne (ex GST) on each tonne of member Council waste for 2019/2020 and the Secondary Waste Charge is to be held at this level until further consideration.

SOURCE OF REPORT

Director Waste Services

BACKGROUND

At the meeting held 2 June 1999 (Ref: DMDOC/104171) Council resolved that funds, for the proposed secondary waste processing facility, should be set aside and that a contribution of $2.00/tonne, on each tonne of member Council waste, be put into a reserve fund and that each subsequent year the contribution be increased by $2.00/tonne.

The member Council contribution to the Secondary Waste Reserve is currently $38.00/tonne (ex GST) reflecting nearly 20 years of this process with annual increments of $2.00/tonne.

Item 12.1 continued

REPORT

With Council's commitment to the Resource Recovery Facility (RRF) project and other resource recovery activities including a possible large scale food organics and garden organics (FOGO) waste processing, it is proposed to continue to build the Secondary Waste Reserve.

Whilst Council has accepted a tender for a Waste Supply Agreement with Hitachi Zosen Inova (HZI) Consortium and has executed contracts in relation to this, the project still has to satisfy conditions precedent including reaching financial close, expected in mid-2019. The EMRC has budgeted for the construction of a Waste Transfer Station at Hazelmere Resource Recovery Park (RRP) in time to deliver the participating member Council waste to the East Rockingham RRF.

At the 21 March 2019 meeting, Council resolved to begin the process of developing a long-term FOGO strategy and proceed with a FOGO trial. Following the meeting, the EMRC has worked closely with the Town of Bassendean to establish their future food organics and garden organics (FOGO) waste disposal requirements.

Accordingly, it would be prudent to continue with the Secondary Waste Charge at the current rate $38.00/tonne (ex GST) for 2019/2020. It is also proposed to cease the previous $2.00/tonne per year increase.

When the long-term FOGO strategy currently being developed has been finalised and adopted by Council including a decision regarding the construction of a large scale FOGO waste processing plant, it will then be appropriate to review Secondary Waste Charge.

STRATEGIC/POLICY IMPLICATIONS

Key Result Area 1 – Environmental Sustainability

1.1 To provide sustainable waste disposal operations
1.2 To improve regional waste management
1.3 To provide resource recovery and recycling solutions in partnership with member Councils
1.4 To investigate leading edge waste management practices

Key Result Area 3 – Good Governance

3.4 To continue to improve financial and asset management practices

FINANCIAL IMPLICATIONS

Fees and Charges are set to ensure the costs of providing waste management services are recouped whilst minimising costs to member Councils.

SUSTAINABILITY IMPLICATIONS

Fees and Charges are set to ensure services offered are sustainable in the long term.

Item 12.1 continued

MEMBER COUNCIL IMPLICATIONS

Member Council	Implication Details
Town of Bassendean	Impact on the member Council tonnage rate
City of Bayswater	
City of Belmont	
City of Kalamunda	
Shire of Mundaring	
City of Swan	

ATTACHMENT(S)

Nil

VOTING REQUIREMENT

Absolute Majority

RECOMMENDATION(S)

That Council, by absolute majority, in accordance with s.6.16(1) the *Local Government Act 1995*, adopts the Secondary Waste Charge rate of $38.00/tonne (ex GST) on each tonne of member Council waste for 2019/2020 and the Secondary Waste Charge is to be held at this level until further consideration.

Discussion ensued

The Director Waste Services responded to questions from members.

Mr Jackson raised a question that it is noted the $38.00/tonne levy is funding a Secondary Waste Reserve.

The following questions were raised:

Question 1: What is the express purpose of the Secondary Waste Reserve?

Response: *The specific purpose of the Secondary Waste Reserve was established to accumulate and to make provision for Secondary Waste Treatment Technology in the future that is at Red Hill and Hazelmere.*

Question 2: What is the anticipated amount held in the Reserve by 30 June 2019?

Response: *Based on the half year review adopted by Council at its March 2019 meeting, the anticipated amount for the Secondary Waste Reserve forecast at the 30 June 2019 balance date will be $54,989,764.*

Question 3: What are the anticipated drawdowns from the Reserve for each of the next three (3) years (i.e. up to 30 June 2022), by value and type?

Response: *The EMRC are currently in the process of finalising the Annual Budget. The Annual Budget for 2019/2020 will be tabled for review at the Audit Committee meeting in June 2019. The Budget will be underpinned by the strategic priorities approved by Council to date.*

Item 12.1 continued

WAC RECOMMENDATION(S)

MOVED CR MCDONNELL SECONDED CR O'CONNOR

That Council, by absolute majority, in accordance with s.6.16(1) the *Local Government Act 1995*, adopts the Secondary Waste Charge rate of $38.00/tonne (ex GST) on each tonne of member Council waste for 2019/2020 and the Secondary Waste Charge is to be held at this level until further consideration.

CARRIED UNANIMOUSLY

12.2 UPDATE ON PROCESSING OF FOOD ORGANICS AND GARDEN ORGANICS (FOGO) WASTE, RED HILL WASTE MANAGEMENT FACILITY

REFERENCE: D2019/06110

PURPOSE OF REPORT

The purpose of this report is to provide an update on the implementation of processing of food organics and garden organic waste (FOGO) at Red Hill Waste Management Facility.

KEY POINTS AND RECOMMENDATION(S)

- A licence amendment has been requested from Department of Water and Environmental Regulations (DWER) to process FOGO waste at Red Hill Waste Management Facility.
- An application for funding support from the Community and Industry Engagement (CIE) program has been prepared in conjunction with the Town of Bassendean and submitted to the Waste Authority for consideration.
- The project schedule for the long term FOGO strategy has been drafted.

Recommendation(s)

That Council receives the report.

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.

At the December 2018 meeting of Council it was resolved:

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 THE PROCESSING OF FOGO COMMENCING 1 JULY 2019 UNTIL THE RED HILL WASTE MANAGEMENT FACILITY IS ABLE TO RECEIVE AND PROCESS FOGO WASTE.*

Item 12.2 continued

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

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.*
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

The EMRC has lodged a licence amendment application with the Department of Water and Environmental Regulation (DWER) for approval to establish a trial composting of FOGO waste in the existing greenwaste processing area at the Red Hill Waste Management Facility. This process has included meetings with DWER officers and the Director General and the Chairman of the Waste Authority. DWER have indicated that the EMRC should receive advice in early May 2019 as to the approval pathway and timing.

The licence amendment application included odour modelling by independent consultants showing that the processing of FOGO waste using a Mobile Aerator Floor (MAF) system would meet the draft odour guidelines for the MAF trial capacity in the existing greenwaste area. The assessment also demonstrated that when the FOGO processing is relocated to lots 8, 9 and 10 to the west to minimise odour issues with neighbours and for additional capacity to cater for all member Councils and other local governments, once again the draft odour guidelines will be met.

The EMRC has finalised and submitted an application for funding support for the FOGO trial to the Waste Authority's Community and Industry Engagement (CIE) program. This application was prepared in conjunction with the Town of Bassendean. Applications for this funding round are expected to be announced by 30 June 2019 and there will be further funding rounds to support the Waste Authority's FOGO strategy.

Item 12.2 continued

The Town of Bassendean have been very cooperative in collaborating with EMRC staff in the development of the CIE grant application together with the timing for the FOGO roll out in the Town.

A tender process for the MAF system will now be conducted which will take approximately three (3) months to resolve and present to Council for consideration.

Community education will be an important part of the success of a FOGO trial. The Town of Bassendean and the City of Bayswater will need to factor this in to their waste management budgets and with their respective collection contractors. The EMRC will support this through the Waste Education team and the Regional Waste Education Steering Group. The CIE funding grant has included costs for additional waste education staff to support the member Councils roll out of the program and to develop the "one region one voice" messaging.

The next steps include development of the long term FOGO strategy, a technical tour of appropriate facilities and investigating market development opportunities for FOGO compost.

STRATEGIC/POLICY IMPLICATIONS

Key Result Area 1 – Environmental Sustainability

1.1 To provide sustainable waste disposal operations

FINANCIAL IMPLICATIONS

Council approved expenditure of up to $400,000 ex GST for the purchase and installation of a suitable MAF system, including hardstand installation and that funds be allocated from the Secondary Waste Reserve.

SUSTAINABILITY IMPLICATIONS

Nil

MEMBER COUNCIL IMPLICATIONS

Member Council	**Implication Details**
Town of Bassendean	Provide a service for the processing of FOGO waste
City of Bayswater	
City of Belmont	Nil present implications
City of Kalamunda	
Shire of Mundaring	
City of Swan	

ATTACHMENT(S)

Nil

VOTING REQUIREMENT

Simple Majority

Item 12.2 continued

RECOMMENDATION(S)

That Council receives the report.

Discussion ensued

The Director Waste Services provided a brief overview of the report and answered questions from members.

Cr McKenna raised a query about use of the Secondary Waste Reserve to fund the community education aspect of FOGO.

The EMRC officers advised that the grant application to the Waste Authority for the FOGO trial included an education component to support the roll out in the Town of Bassendean and that the EMRC would provide high level support. The Community Waste Education Strategy levy of $3.50 per tonne of waste was providing a basic waste education service to the member Councils including:

- The Annual Waste and Recycling guide;
- Dry cell battery and CFL collection;
- Earth Carer training;
- School program and tours of the landfill; and
- Event participation.

WAC RECOMMENDATION(S)

MOVED CR MYKYTIUK SECONDED CR LAVELL

That Council receives the report.

CARRIED UNANIMOUSLY

12.3 2019 AUSTRALIAN LANDFILL AND TRANSFER STATIONS CONFERENCE

REFERENCE: D2019/06381

PURPOSE OF REPORT

The purpose of this report is to convey the outcomes of attending the 2019 Australian Landfill and Transfer Stations Conference from 26 to 29 March 2019 held in Brisbane.

KEY POINTS AND RECOMMENDATION(S)

- Councillor David Lavell and the Manager Engineering and Waste Operations attended the 2019 Australian Landfill and Transfer Stations Conference in Brisbane from 26 to 29 March 2019.
- Information presented at the one day workshop on leachate management was invaluable to the EMRC's planning for leachate management at the Red Hill Waste Management Facility (Red Hill).
- Information presented on geosynthetic materials was insightful and confirmed that the EMRC is presently implementing the best available design and materials for the landfill cells and leachate pond construction.
- The tour of resource recovery facilities gave the EMRC representatives an update on current practices in Canberra.
- The tour of the facility west of Brisbane provided an insight as to how geotextiles are manufactured.
- Information presented in the workshops, paper presentations, expo and tours will be used in the development of the leachate treatment project at the Red Hill Waste Management Facility.

Recommendation(s)

That the report be received.

SOURCE OF REPORT

Director Waste Services.

BACKGROUND

At its meeting of 21 February 2019, Council resolved (D2019/02833):

> "*THAT COUNCILLOR(S) LAVELL BE REGISTERED TO ATTEND THE 2019 AUSTRALIAN LANDFILL AND TRANSFER STATIONS CONFERENCE BEING HELD IN BRISBANE FROM 26 TO 29 MARCH 2019*."

REPORT

The first day of the conference was devoted to workshops, one on Leachate and the impact on Emerging Contaminants and one on the Advances in Landfill Design and Construction with Geosynthetics. A list of the papers presented at the workshops and conference is attached (Attachments 1 and 2).

There were excellent presentations at the conference from:

- Mr Peter Kjeldsen of Technical University of Denmark (DTU);
- Dr R Kerry Rowe of Queen's University, Kingston, Canada;
- Mr Scott Grieco of Jacobs; and
- Mr Boyd Ramsey of Boyd Ramsey Consulting and many others.

Item 12.3 continued

Key points raised by the presenters of relevance to EMRC at Red Hill were:

1. Landfill designers are essential to having a design that is fit for purpose;
2. Contractor Quality Assurance (CQA) auditors are critical to ensure composite lining systems are constructed to specification;
3. Geosynthetic liner selection is crucial to ensure the project is completed on time and not delayed due to inferior products;
4. The EMRC's landfill maybe developed into a solar farm, nature sanctuary or industrial infrastructure in the future;
5. It is imperative that the EMRC maintains a Closure and Post Closure Plan; and
6. The EMRC should investigate the use of ferricrete as a leachate drainage medium as it can be screened on site and provide substantial cost savings.

On Friday 29 March 2019, the EMRC participants attended both technical tours of the Brisbane region visiting the following locations:

Tour 1

- Logan Recycle Market and Browns Plains Waste Facility;
- Watson Road Resource Recovery, Acacia Ridge (BMI Group); and
- Caboolture Waste Management Facility (Moreton Bay Regional Council).

Tour 2

- Geofabrics Australasia, Ormeau;
- Greater Toowoomba Waste Management Facility; and
- Ti Tree Bioenergy Facility.

Overall this was a very well planned conference with a good mix of technical presentations relevant to the EMRC for current operations and future planning, good technical tours and an interesting expo.

STRATEGIC/POLICY IMPLICATIONS

Key Result Area 1 – Environmental Sustainability

1.1 To investigate leading edge waste management practices

FINANCIAL IMPLICATIONS

Each year funds are budgeted for Councillors and EMRC Officers attendance at conferences. The cost of implementing any identified improvements from the conference, will be from Council approved budgets.

SUSTAINABILITY IMPLICATIONS

Nil

Item 12.3 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)

1. Cr David Lavell – Report on outcomes of the 2019 Australian Landfill and Transfer Stations Conference (Ref: D2019/06566)
2. Manager Engineering and Waste Operations – Reports on outcomes of the 2019 Australian Landfill and Transfer Stations Conference (Ref: D2019/06567)

VOTING REQUIREMENT

Simple Majority

RECOMMENDATION(S)

That the report be received.

Discussion ensued

Cr Lavell thanked the EMRC Council for the opportunity of attending the conference in Brisbane. Cr Lavell provided a brief overview of the report and attachment and answered questions from members.

There was some discussion about the potential for landfill liners to leak as per the conference papers. It was noted that the EMRC follows best practice methodology for the Cell construction and lining systems and monitor the contractors closely.

Cr McDonnell commented that the report was detailed and very informative.

WAC RECOMMENDATION(S)

MOVED CR MCKENNA SECONDED CR MYKYTIUK

That the report be received.

CARRIED UNANIMOUSLY

2019 Australian Landfill Transfer Station Conference
26 – 29 March 2019 held in Brisbane QLD.
Outcomes from Cr David Lavell

Introduction:

I attended the Conference organised by WMRR (Waste Management and Resource Recovery, Australia) along with EMRC Manager, Stephen (Steve) Conway, Manager Engineering and Waste Operations.

I take this opportunity to thank my fellow Councillors on the Eastern Metropolitan Regional Council for supporting my attendance at this Conference. Personally, I felt it was a very well organised Conference and it was a good opportunity to refresh my knowledge of the industry.

It soon became apparent that much has changed in the industry over the past decade.

Executive Summary:

The Conference composed of a one (1) day Workshop on Tuesday 26 March 2019, the Conference proper on Wednesday 27 and Thursday 28 and Tours on Friday 29 March 2019. For the Workshop, Steve attended Workshop A, Successful use of Geosynthetics in Containment Systems (Materials, Design and CQA). I attended Workshop B, Managing Leachate and the impact of Emerging Contaminants.

For the Conference proper we both attended the Opening and Keynote speaker addresses. Steve then attended the following sessions: Session 1: Landfill Closure. Session 3: Landfill Operations. Session 5: Design Challenges and Lessons Learnt. Session 7: Linear Design & CQA, Session 9: Landfill Leachate Case Studies.

I attended Session 2: Policy & Regulation, Session 4: Procurement, Session 6: Innovation in Transfer Station Operations, Session 8: Transfer Station Development Case Studies and Session 10: Carbon & LFG.

For the Tours on Friday 29 March 2019, I attended Tour 1 which included a visit to Logan Transfer Station and Community Recycling Centre, to BMI Groups C & D recycling operation and then to Caboulture Landfill operation.

Tour 2 took Steve Conway to Landfill and Transfer Station Facilities in Toowoomba.

Papers delivered by Speakers are available. Should you wish to receive a copy please let me know.

In summary of Workshop B that I attended and also Day 1 Speakers, there was a great deal of focus on Current and Emerging Contaminants (CEC's). PFAS no longer produced in North America since 2003, is now increasingly produced in China since then. The US and Australia view contaminants from a Risk based management approach whereas Canada, the EU and particularly Germany and Switzerland view contaminants via a Precautionary principle.

Hence acceptable levels of contaminants in Leachate, Biosolids from WWTF's and Groundwater vary greatly. For instance in the US and Australia as additional risk data are generated, often values are lowered to reflect new information. US EPA: 1,4-Dioxane lowered from 3 to 0.35 micro gms / litre. From "mouse" exposure studies, the US EPA for different exposure & toxicokinetic assumptions lowered PFOS and PFOA from 400 to 70 micro gms / litre and a 1,4-Dioxane level of "none". In Australia PFOS 70, PFOA 560 and 1,4-Dioxane 0.35. US Fed PFOS 70, PFOA 70, 1,4-Dioxane 0.35, US States vary from 14 – 400 for PFOS and 0.3 – 50 for PFOA, 1,4-Dioxane 0.3 - 50. In Canada they

have adopted 600 for PFOS and 200 for PFOA with 1,4-Dioxane set at 50. All figures quoted are supplied by JACOBS and are in micro grams / litre.

“Differences in guidelines reflect responses to scientific uncertainty”, JACOBS.

What we dispose has greater impact on Leachate. On average, every year each Australian throws out: 330kgs of paper, 118 kgs of plastic, 552 aluminum cans, 206 glass bottles/jars, 414 kgs of food and 74 kgs of metal. Source National Waste Report 2016, Blue Environment Pty Ltd.

From JACOBS (Shultz et al 2003), pre -2003 North American PFAS production went into the following product:

Fabric, leather and carpet 41%, Paper and packaging 45%, Industrial surfactants, additives and coatings 11% and Aqueous film forming foam 3% (firefighting).

Contaminants are displayed by JACOBS in a diagram of a floating iceberg. Above the water the current known contaminants include Solvents, PCB’s and PFAS. Below the water level are displayed emerging contaminants 1,4-Dioxane, PBDE, NOMA, CP’s (chlorinated parafins), 123-TCP, PPCP’s, Siloxanes and Nanomaterials. The caption “The Concept of Emerging Contaminants is nothing new” and “We can detect and navigate the iceberg”. I like their optimism.

Current and emerging contaminants are getting into surface water, streams, rivers, and groundwater. This water is then being drawn back via bores to the Biota. Leachate from lined landfills is going to Wastewater Treatment Plants, the effluent from which is going back into surface water and then groundwater. It is now estimated that 80% of PFOA production is now in the ocean.

<u>So what are the implications for the EMRC:</u>

Jochen Muller of the University of Queensland suggests that all landfills will be leaking one day over the next 70 years and this leakage will reach a peak in 100 years. He is concerned that there is a greater lack of understanding in the community about the actual toxicology and possible effect of chemicals and possibly “concern is emerging more than the chemical”. It is difficult to control CEC entry into landfill in heterogeneous waste. We need to put all contaminants into a realistic perspective but at the same time attempt to deal with then in landfills by proper design, construction and operation of landfills. Contain leachate on site, treat and prevent leakage to groundwater. From a strategic point of view EMRC can regulate the heterogeneous waste to landfill via separation at source, removal of the organic fraction and recycle as much waste as possible.

Bill Clarke asserts that the removal of PFAS compounds can only be achieved through sophisticated processes, example: Absorptive/ Separation processes but it destroys biosolids with attendant loss of carbon; Electoconcentration and advanced oxidation; Non thermal plasma and thermal methods such as Plasma Arc. On the question of whether incineration will destroy PFAS, he said yes but at very high temperatures as in incineration, but currently there are no journal articles on the fate of PFAS in solid waste incineration.

Waste Transfer Stations: It is interesting to note that in the absence of a State landfill levy some Queensland local authorities are claiming to divert 80% of waste from landfill. Toowoomba Transfer Facility is one. Queensland will introduce a $70/tonne landfill level on 1st July 2019. This is in response to cross border transport of waste from NSW to Queensland. Logan Transfer Facility is a great example of separation at source. The Facility has attendants that assist the public to assess where to take articles and even assist carry then to the right area. They encourage the public via advertisements to plan their trip to the facility by separating the waste on their trailer to suit the facility layout. The Logan Community Recycling Centre is the best I’ve seen, with some customers camping overnight in the carpark prior to new deliveries to the Centre on the following morning. The Centre is

very well laid out and all items placed in specific areas such as bikes, camping, fishing, games, children's toys etc. There is even a lounge for users to chill out in.

Other great examples of Recycling are summarised in my Notes from Day 2 below.

David Lavell BE MBA FIEAust CPEng MAICD

Councillor EMRC

Councillor Shire of Mundaring

Notes taken from Day 2 Speakers

Garrett Hall. Golder Associates

Optimisation and Siting Resource Recovery Infrastructure Across Regional Municipal Councils.
Planning, Structure Plans, Masterplans of Local Authority. Travel times across the catchment area.
Best Practice, Region Wide perspective. Phased approach, Maximizing Community Access.
Macro through to Micro. Population and demographic areas.
Projection of future needs, demands.
Funding of the infrastructure.
Hub and spoke network. Base case, New and or replace the RRCs. Rationalisation do you need one or many RRCs.
Types of waste generated and where.
Cost benefit analysis, Net Present Value assessment.
RRC siting criteria with client input.
Political element has to be considered.
Siting considerations:
Accessibility. Design considerations.
Ownership, Road accessibility, Future Proof Capacity, Capacity for grade separation,
Drive time, Fire Risk in rural areas, Proximity to Residential Areas and Future,
Environmental, Waterways.
RRC Conceptual Design Assessment, Workshop sites with Council, Prepare, Review and Recommend the site.
Community consultation.
Review the opportunities and finalise the design through to detailed design phase.

John Cavenagh, John Cavanagh Consulting

Tuncurry Waste Management Centre Redevelopment.
Delivering Tomorrow's Future Today in Waste Management.
Closing landfill and converting to a Transfer Station. 4 lanes provided to channel cars into appropriate areas.
Fundamental behaviour change, "reimagine waste" campaign.
Motivation for change, generational equity, Community motivations, Political motivations, Beauty of our environment motivation driver.
Waste hierarchy
"Life is like a road trip, enjoy each day and don't carry too much baggage"
RRC / Green Shop. Community Recycling Centre CRC.
Put Mens Shed at the RRC, recycling timber/steel etc.
Legislation and pricing
Diverting waste from landfill and avoiding the landfill levy.
Operational success, 79% waste diverted from landfill.
Changed behaviour.
Imagine a garage so safe that the whole family can use it.

Michael Alexander, Cessnock's Transfer Facility.

Game Changer
Education, Resource not waste.
Stage 1. Waste Transfer Facility, CRC and push pit disposal area.
Stage 2. Landfill extension.
Intro of third weigh bridge, to allow customers to recycle and recover.
Once in bin from a standard drop the bin is usually destined for landfill, so its better to seperate prior to bin.
Benefits:
Enhances resource recovery.
Reduce misuse of the site.
Safety & Security.
The Levy is the enemy so anything one can do to divert from landfill take it.
Customers scan a RFID card on passing through.
Push Pit allows further separation. Final destination landfill.
Well managed site.
Fee structure info is colour coded. Everything attracts a charge. User pays principle.
Free drop offs are abused by commercial contractors. Jims mowing etc.
Ads advising customers how to pack a trailer for ease of unloading/ recycling.
Introduced sustainability initiatives.
25KW solar, 4 x 10000 litre water tanks capturing roof runoff.

Michael Strickland. WM Waste Management. KTS Recycling.

Knox Transfer Facility commenced in 2006 servicing 40% of Councils around Melbourne. 2011 Mattress recycling facility established. Ewaste 2012.

Hard waste difficult to recycle, so in 2014 Hard Waste used to produce PEF.
Processed Engineered Fuel (PEF) made specifically for cement kilns which are traditionally coal or gas fired. Energy Efficiency in cement kiln 90%. Waste to energy efficiency much lower approx 15 to 25%.
PEF is baled into 900kg bales for transportation.
Waste is shredded, crushed and compacted.
Excluded shop waste, tyres.
Achieves 85% diversion from landfill.
Pick up all hard waste from kerbside recycling with one truck including mattresses.
20,000 tonnes to 40,000 of PEF produced to supplement coal fuel.
No ash all heating goes into the cement product.
Natural limestone scrubs out all emissions.
Composition of plastics may produce too much chlorine's.

Troy Uren: Toowoomba Regional Council.

Flat floor design of Transfer Facility because allows more recovery than deep push pit.
Who forget to tell Aldi that there was a Duopoly in Australia. They have been called different but they take that as a compliment and have challenged the Duopoly with success.
Aldi is a family owned business with 10,000 stores in 20 countries.
527 stores in Australia.
Why do we continue to build at the back end of a landfill. Time to change attitude.
96% of People want to recycle everything.
Only 4% of pop have no interest in recycling.
Capex should drive efficient and effective Opex. Forget Capex and focus on Opex.
Opex covers many decades.
Transport and labour:
Cost drivers to recycle was to save many millions in transportation and labour to conventional landfill.
This is before the introduction of the $70/tonne LL in Qld.
Forget the landfill, TT are there to service customers.
Now 75% diversion from landfill. No budget impact. No new staff, just a change of facility.
$10 /tonne Capex investment saved $240 / tonne in Opex.

Sze-Fei Peng Tonkin & Taylor

Landfill Gas master plan.
LFG, is it about compliance or a risk to be managed.
It can be a fuel or converted to energy.
Whole of life planning
Final cap
Cell phasing plan
Design etc
How much gas is there?
First order decay (Scholl Canyon USA) method most widely used.
LFG generation peaks after capping and then decays. So the design of a generation system must be done for longest average level of the gas.
Design Rule of Thumb
40 metres radius,
Min waste depth 10m
Max retro fit 30m
Terminate within 3 to 5 metres depth.
System installation to tie in with filling plan, phases.
Phasing plan.
Retrofit vs Progressive installation.
Retrofit, could hit refusal of drill, car bodies etc. Odour
Size of pipe, velocities.
Uses:
Methane destruction, flare heads.
Electricity Generation
Utilisation as a fuel.
Leachate evaporation and ammonia stripping

Adam Faulkner CEO NAWMA Ulebury Landfill.

A local gov regional waste management subsidiary, three constituent LGA's. 100,000 households. 85, 000 tonnes in MSW Red Bin
Landfill as a Modern Renewable Energy Park.
Waste is aggregated and baled to a Balefill landfill. 1.3 tonnes per bale.
Want to change landfill diversion from 45% to 70% by 2023.
Best in class:
Low odour, Little to no wind blown litter, Minimal plant required.
11,000 solar panels 1.15MW combined with 1.1MW turbine from methane generated.
Live feed of daily electricity generation from solar and methane.
CAPEX / OPEX Budget developed based upon high / medium / low scenarios by LMS and Joule, ROI 4 - 5 years.
Change narrative from landfill to energy facility (Renewable Energy Park) by 2027.
No more landfills in SA after 2027.
Possibly development of a Micro Grid

Peter Kjeldsen UTS Technical University of Denmark.

Carbon and Landfill Gas management.
European standards do not specify how LFG should be managed.
Landfill gas management.
Objectives to measure landfill emissions:
Flux chambers are used to monitor localised areas but what is needed is a site method of measuring all emissions.
The Dynamic plume tracer dispersion method was developed in the US.
From a vehicle driving using a Picarro instrument on a road nearby you can measure methane and acetylene. Approx up to 90% E efficiency can be achieved, but typically between 20% and 80%.
Denmark leading industry in Europe.
Collection efficiency E%.
Emissions of methane from landfills is a significant environmental impact.
A whole site method has been developed in Denmark.

Aidan Marsh Biogas Systems Australia.

Hazardous ground gas
Continuous gas monitoring - Lessons learnt.

Conventional uses of spot monitoring data for
Compliance and risk assessment.
Also required for monitoring prior to building on top of landfills.
Variables that can affect monitoring results
Groundwater interactions
Recording peak or stable conditions
Effect of accumulation
Timing of monitoring
Well status, leakages etc.
Autonomous in-situ analyser
Barometric pressure influences the gas flow so flow will vary during the day and dependant upon the weather conditions. Temp and humidity. But a drop in atmospheric pressure will not necessarily increase methane concentration. Landfills are complex and dynamic ecosystems.
Effects of diurnal variations, soil temperature etc. so measurements taken at mid-day.
Spot measurements will paint a completely different picture to continuous monitoring.

Sean Blythe NGV Group

Sustainable Gas Production and movement specialist.
WAGA Energy is French company.
WAGABOX developed for landfill gas sites.
LFG is responsible for 5% of GHG emissions.
BOOM model of construction.
Best technology to remove CO2 and then cryogenically treated to produce a high quality methane.
Specifically made for landfill gas sites.
Biogas & CNG OEM Vehicle Customers
IVECO, SCANIA running gas trucks.

2019 Australian Landfill Transfer Station Conference -
26 to 29 March 2019 held in Brisbane QLD.
Outcomes from Manager Engineering and Operations Red Hill

WORKSHOP A

ADVANCES IN LANDFILL DESIGN AND CONSTRUCTION WITH GEOSYNTHETICS

This workshop presented an overview of key landfill design objectives and the challenges faced during the construction of landfill cells, with a particular focus on construction quality assurance issues.

The objectives of this workshop were to:

- Provide an overview of landfill design objectives from local and international experts;
- Consider key challenges in construction quality assurance processes that affect construction schedules and project costs;
- Review geosynthetic testing methods and suggest approaches to address or combat failures;
- Hear from local and international experts about developments in geosynthetics; and
- Share recent experiences from practitioners (suppliers, contractors, designers and landfill owners).

In summary this workshop detailed the most up to date information concerning the design, installation, and construction quality assurance of composite barrier lining systems for the containment of landfill leachates and gases.

Prof Kerry Rowe - Queens University, Canada emphasised that no lining system is 100% impermeable and that to mitigate the potential leakage rate risk and problems the following procedures should be adhered to:

- Hire a designer who really knows what they are doing and keeps up-to-date;
- Have CQA consultant who really knows what they are doing, keeps up-to-date, and will have a knowledgeable person really what is happening during all stages of construction;
  Remember: "You get what you inspect not what you expect"; and
- Operators who ensure they know design limitations and limits on operation that must not be changed without consulting the designer.

The objective of composite barrier lining system's design is to minimise:

- long-term leachate head (basal lining);
- landfill gas pressure (capping system);
- geomembrane (GMB) puncture and tensile strain;
- outward advective-diffusive movement of landfill gas, including Volatile Organic Compounds (VOC's);
- diffusion of contaminants through bottom; and
- leakage of contaminants through holes in GMB wrinkles.

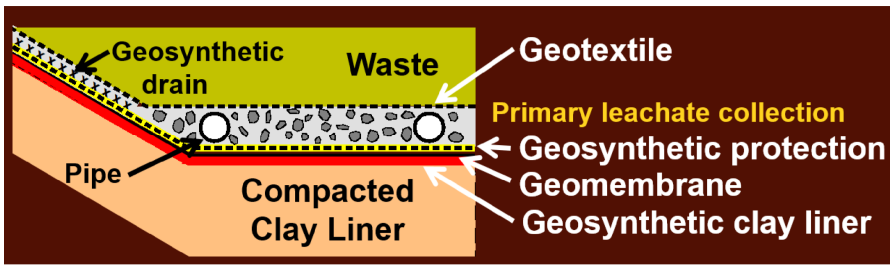
The design involves consideration of:

- Physical;
- Chemical;
- Thermal; and
- Biological processes within a system where component interactions are critical to overall system performance.

The composite lining systems (CLS) utilised at the Red Hill Waste Management Facility (RHWMF) comprises from the top down the following components:

- Separation geotextile (prevents clogging of leachate collection system);
- Leachate collection system;
- Protection geotextile (protects the geomembrane from punctures);
- Geomembrane (HDPE);
- Geosynthetic clay liner (GCL);
- Compacted clay liner (CCL);

The figure below illustrates a typical CLS.



The CLS utilised at the Red Hill Waste Management Facility (RHWMF) is designed and constructed to Industry best practice as detailed above.

The workshop also discussed the installation and contractor quality assurance and its importance to ensuring that the CLS design is fit for purpose. One of the key items discussed was the introduction of new HDPE lining manufacturers. These manufacturers on sell to a variety of geofabric suppliers that then re-label the products as if they were their own. Competition is presently very high to be the winning tenderer due to procurement procedures seeking the lowest price; therefore it is believed that corners are being cut to provide materials that have little or no factors of safety included in the manufacture. For the purchasing of lining system materials we are looking at approximately $2-3/m^2 extra to secure higher quality German manufactured HDPE liners from NAUE GmbH for HDPE, and GCL manufactured in Australia rather than cheaper materials provided by the winning tenderer.

The implications for the EMRC:

In the last 12 months the EMRC has completed two very important projects utilising the above composite lining system:

- three leachate ponds (approx. 38,000m2); and
- Landfill cell - Stage 15B (6,500m2).

It has been noted that the lining materials utilised have had manufacturer defects that have obviously eluded the manufacturer's quality assurance but was detected by the EMRC's construction quality assurance process.

These liner manufacturing defects have been noted on a number of landfill sites through WA. As such it would be worth discussing with the EMRC's procurement manager as to whether specific materials from known high quality manufacturers can be specified in future composite lining system tenders. This would ensure that the best available materials would be supplied and utilised in future projects.

Day 1

Fraser Daly - Talis Consultants
Maximising historical landfill end uses

Notes:

- Push for urban infill in most capital cities and regional towns;
- Many historical landfills (and other brownfield sites) have laid dormant or have returned to pasture, overlooked for development;
- Perceived and actual complexities in redevelopment; and
- Landfill siting historically had little consideration beyond cheap available land.

Redevelopment of these sites can boost the local area and improve the environment. It can be cheaper to develop brownfield than greenfield sites and prevents the destruction of native vegetation.

With a proactive and holistic approach to their investigation, these complexities can be overcome and redevelopment can occur.

Key Considerations:

- Environmental (Contamination);
- Geotechnical;
- Social Response; and
- Redevelopment Costs and Finance.

Potential end use:

- car parking and commercial units;
- residential;
- solar farms; and
- parkland or nature reserve.

Ruby Michael - Cities Research Institute, Griffith University & Richard Yeates - PhytoLink & Associates
Plant selection for Queensland landfill caps: emerging trends and methods

The landfill phytocap presents a soil-plant alternative to the traditional barrier cap paradigm and relies on the capacity of a porous layer of soil to store water, and the combination of evaporation and the natural transpiration abilities of vegetation to control the percolation of water into a landfill.

This particular presentation was directed at plants and soils native to Queensland and therefore the information was not particularly relevant for RHWMF.

Rowan Cossins - ACT Williams
Delivering multiple For Tender phytocap closure designs in the Toowoomba Region – what attendees learnt:

Notes:

- Consider that phytocaps are a very practicable capping solution for many regional landfills. Work out your material source strategy, you can be opportunistic.
- Phytocap modelling leaves a lot to be desired -don't get lost in the model (like we did for awhile) – if you have a mining team, use their experience with store and-release caps.
- Old landfill sites that have been filled with little thought to closure sometimes require significant re-shaping – or reinforcement in the cap.

- Once the thickness of a Phytocap is sorted, stormwater is the main design challenge, but that's a business-as-usual issue.

Siamak Paulson - Golder Associates

Risks and Rewards of Developing a Decommissioned Landfill into a Transfer Station focusing on the Capping System Design

Notes:

Landfill Decommissioning

Landfills, when decommissioned, shall be capped by a combination of drainage systems and contamination barriers to minimise adverse effects on the environment to an acceptable level and to form a long-term stable landform.

Landfill Capping

Regardless of the potential future land use, the capping systems shall permanently

- restrict the uncontrolled release of landfill gas and leachate;
- Minimise the infiltration of precipitation into the waste by effective management of the stormwater runoff from the capped surface; and
- Support the long-term stability of the final landform

Criteria for Post-Closure Development

Technical

- Technical suitability for site-specific requirements;
- After-use conditions;
- Geotechnical stability;
- Ability to execute and establish quickly and efficiently;
- Operational activities and developments; and
- Robust technology for post-closure period.

Environmental

- Satisfying relevant environmental authorities' requirements;
- Ability to minimise leachate generation;
- Ability to minimise landfill gas impacts;
- Ability to withstand strong differential settlement; and
- Long-term Stability of the landform.

Economic

- Initial capital cost;
- Vegetation maintenance;
- Erosion repairs;
- Cap perforation for landfill gas; and
- Dependence on imported earth fill for construction.

Simon Clay - Wyndham City Council
Understanding subsurface fires and engaging the community: A case study

Notes:

Potential suspicion of fire 2014/15:

- Odour (burnt rubber) occasionally detected;
- Additional intermediate cover;

- Closed a number of gas wells; and
- Gas well temperature measurements.

Discovered mid 2016:
- Cell 4A – filled in 2014;
- Reprofiling waste to meet an EPA Notice;
- Smouldering waste uncovered;
- Band 0.5-1.5 m in thickness;
- 60 m lateral extent; and
- 7-10 m below top of cell.

Local community group concerns:
- Hot spot vs fire
- How did it happen?
- Will it explode?
- Health impacts?

Possible Solutions and Actions:
- Pump water or leachate;
- Concerns about leachate and emissions;
- Pump Nitrogen or Carbon Dioxide;
- Excavate and extinguish;
- Monitoring of any emissions; and
- Notification of all adjacent land holders.

The implemented solution:
- Injected water and monitored surface emissions;
- Switched to leachate;
- Pumped 7 ML of leachate down a total of 20 injection wells; and
- 3 further rounds of temperature probe monitoring.

Lessons Learned
- Is it really out – we think so
- Don't overfill – steep batters create problems
- Over extraction of gas wells
- Understand what gas composition is telling you
- Engage the community
- Work with the regulator

Mark Winser - Kimbriki Environmental Enterprises
Prudent Provisioning for Closure/Post-Closure Costs

Notes:

- Manage data;
    - Current airspace available and when it runs out;
    - Estimate need for future air space requirements;
    - Construction costs for;
        - New Cells;
        - Capping;
- Keep the consultants at bay…;
- Do an annual lookback on assumptions;
- Review closure/post-closure costs no later than every 3 - 5 years; and
- Review provision every time something changes.

Miljenko Pavlinic & Tanya Allen - Gympie Regional Council
Is an uncontrolled landfill “Open Dump” really the cheapest disposal method? - Gympie Regional Council Experience

Notes:

Gympie had

- 1 Engineered Landfill
- 3 Unsupervised Landfills
- 2 Supervised Landfills
- 3 Unsupervised Bin Sites
- 5 Supervised Bin Sites

This situation resulted in windblown litter, unlined landfills, increased operation costs, and fires.

After reorganisation they had:

- 10 supervised bin sites; and
- 1 engineered landfill.

They also instigated widespread household collection system reducing the need for so many drops off points.

This reconfiguration of waste operations for the Gympie Regional Council mitigated all of the issues.

Andrew Green - Golder Associates Pty Ltd
An overview of construction costs for landfill cells and landfill closure

Notes:

Key influences on construction costs:

- Leachate Gravel – particle size, shape, angularity (angular crushed rock vs rounded river gravel). Influences Cushion Geotextile selection;
- Clay source – availability, quantity per source, environmental testing, CEC, travel distance source to site;
- Geosynthetic testing – frequency/type of testing varies by state;
- Imported Geosynthetics – geomembrane – influenced by price oil and $AUD;
- Height of Waste – influences Cushion Geotextile, leachate pipe sizing, Geocomposite Drain where applicable, stability of the waste mass;
- Groundwater level – underfloor drainage;
- Availability of earthen materials onsite or near site vs importing; and
- Climate – influences water management (leachate and stormwater), potential for covered leachate ponds in high rainfall climates FNQ, NT.

Design influences:

- Cell geometry, side liner batter angle;
- Is there a Piggyback Liner component?;
- Subgrade conditions;
- Leachate collection; and
- Site specific conditions.

Barry Mann - Senversa
Innovative Applications of Horizontal Directional Drilling (HDD) for Environmental Purposes: A Closed Landfill Case Study and Other Examples

Notes:

Horizontal directional drilling (HDD) is a well-recognised drilling technology in the coal mining, gas, telecommunications and utility sectors, but is an emerging technology for the soil and groundwater remediation sector in Australia.

This type of drilling can be utilised in landfills to install horizontal extraction wells.

Chris Nivison-Smith - GHD & Michael Novak - Cetco
Spray-applied geomembranes – utilising seamless solutions for landfill re-development

Notes:

Summary of presentation:

- An overview of spray-applied geomembranes
- Benefits and constraints
- Investigation and product selection
- Design process and key considerations
- Quality control and assurance measures
- Construction methodology
- Applications and case studies

This type of product is primarily used to seal the underside of new structure to be constructed on a remediated landfill preventing the ingress of noxious odours and gases.

James Begg - Golder Associates
Impact of Severe Cyclone Debbie on Hogan's Pocket Landfill and Technical Challenges of Management and Repairs

Notes:

Infrastructure that was damaged and repaired to landfill as result of Cyclone Debbie:

- Leachate drainage gravel wash out;
- Protection geotextiles ripped and windblown; and
- Leachate drainage pipework proven to be inadequate.

Liza Du Preez - Golder Associates
Infrastructure development over old landfills: What to do with the gas?

Notes:

- Why? (do we need to do anything about gas);
    - Human health risk (Chronic);
    - Explosive risk (Acute);
    - Legislation;
- How (i)? (do we go about deciding what to do)
    - Develop conceptual site model (CSM);
    - Measure gas concentrations and flows across the site;
    - Prepare risk assessment;
    - Assess pre and post development scenarios;

- What?(do we to mitigate the risk)
    - Design;
        - Source (remove / isolate);
        - Pathway (intercept / divert / capture);
        - Receptor (isolate / divert (around and out) / intercept);
    - Materials
        - Barrier
        - Gas collection
        - Passive /Semi-active /Active systems
    - Quality Assurance / Quality Control
- How (ii)? (do we check that it is working);
    - Predefined monitoring locations;
    - Monitoring plan;
    - Active monitoring systems;
    - Passive monitoring systems; and
    - Action plan.

Day 2

Tanja Blazeka Kojc - GHD
Landfill Construction Quality Assurance – Victorian experience

Notes:

Outline

1. Landfill Construction Quality Assurance
    - EPA Victoria Best practice environmental guidelines (BPEM) requirements:
        - Construction Quality Control;
        - Level 1 Geotechnical Testing and Inspection (Level 1 GITA);
        - Third Party Construction Quality Assurance (TPCC);
2. Construction Quality Control
    - Contractor must demonstrate that they have:
        - Extensive experience with construction of landfill caps, cells and leachate ponds;
        - Relevant project experience;
        - Relevant certification;
        - Worked under the supervision of Level 1 GITA/TPCC and been assessed by the Environmental Auditor;
3. Level 1 GITA
    - The role of GITA is defined in Australian Standard AS 3789-2007, Guidelines on earthworks for commercial and residential developments
        - The BPEM requires that the compacted clay liners are constructed under Level 1 GITA supervision
        - The primary role of GITA is to be able to express an opinion on the compliance of the work against the EPA approved Technical Specification
        - GITA must be independent of the contractor
4. Third Party Construction Quality Assurance (TPCC)
    - The TPCC must:
        - Be independent of the lining contractor
        - Have experience with the installation of geosynthetic liners
        - Facilitate sampling and testing of geosynthetic liners
        - Oversee the installation of geosynthetic liners
        - Prepare an as-built TPCQAreport

5. Regulatory Requirements
    - Neither the role of GITA or TPCC inspector are currently regulated.
    - The Geosynthetic Research Institute of America offers courses and an exam locally and issue a certificate “Certified CQA Inspector”.
    - Many consultants in Australia that provide these roles have obtained certification.
    - There are many engineers in the capacity as Level 1 GITA or TPCC Inspector that do not have adequate experience to perform the role satisfactory.

Fred Gassner - Golder Associates
Experience with Material CQA Testing Results

Notes:

- Lab to be independent and not linked to supplier or contractor
- Variability between labs and test itself
- Specifications should include a detailed process for re-testing to review minor non-conformances.
- Must be limited in scale and related to design intent and values – decided by Designer.
- Designers and CQA organisations must have detailed understanding of testing process and its limitations.

Don Richardson - Golder Associates
Bituminous geomembranes as an option for containment liners on side slopes and ponds - learnings from case studies Capturing Disaster

Notes:

This presentation promotes the utilisation of a bituminous liner in lieu of the traditional composite liner (GCL and HDPE/ LLDPE).

Some of the factors influencing the choice to include a bituminous geomembrane in the containment liner system:

- Safe access, set out and methodology for earthworks and liner deployment;
- Subgrade preparation;
- Robustness;
- Less sensitive to wrinkles, disturbance by wind or uplift pressures;
- Can be left exposed without the need for immediate confinement;
- Can place overlying materials without need for cushion material;
- Panel lengths approx. 50 m, avoid joins on the slope;

Design & Installation Considerations

- Interface and overlap with existing liner;
- Fewer layers in the containment system, saves $ and time;
- Day time temperatures (health and safety, methodology, night shift); and
- Material properties and performance in the context of the site conditions.

Warren Hornsey - TRI Pty Ltd
Cushion testing of Geosynthetics

Notes:

We don’t live in a perfect world:

- We test very small samples compared to actual field conditions.
- Very few test methods mimic field conditions perfectly.
- We need to understand how testing is carried out in order to understand how to apply the data.

- Polymers and materials are continually changing/"improving" should we adapt our requirements to allow for these changes?

Conclusion

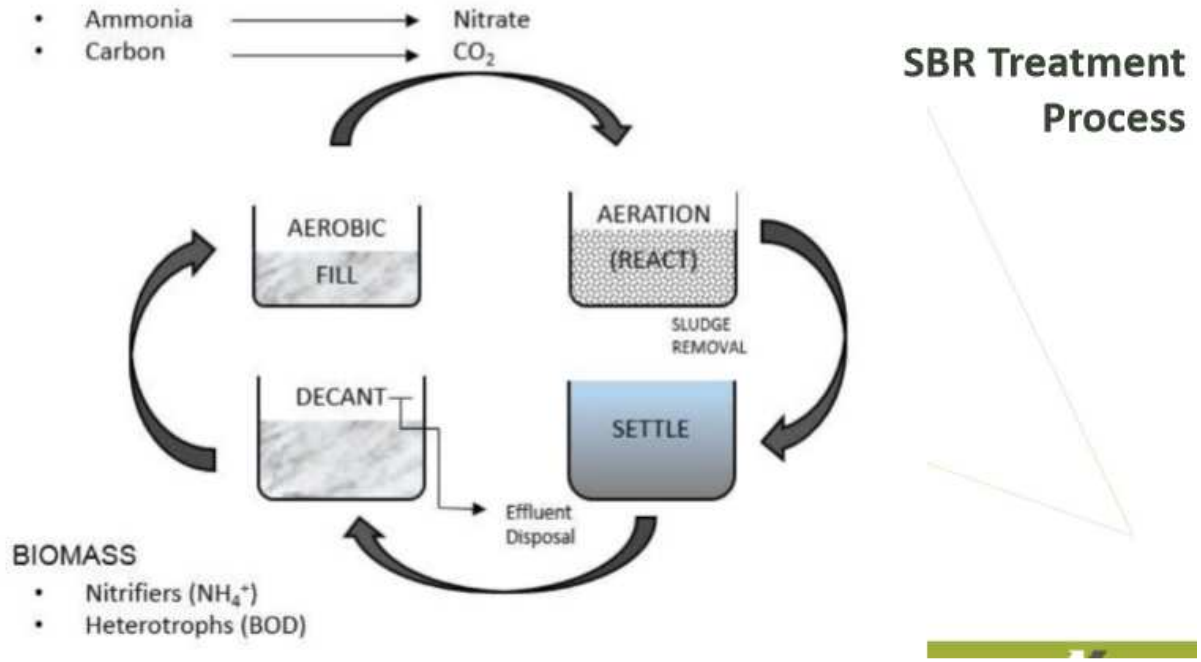
- We must agree on a standard test method
  - Test setup
  - Strain measurement
- We must agree on maximum allowable strain value based on the agreed test method

Stuart Dever - Kimbriki Environmental Enterprises
Design and Development of a Leachate Treatment Plant at the Kimbriki Resource Recovery Centre

Harini Pani - BeneTerra
Landfill leachate characteristics, management and treatment alternatives

Notes:

- Background – design and construct plant to treat up to 1,500kl/day of landfill leachate
- Infrastructure
  - Pipeline to sewer (design & construction)
  - Leachate treatment plant (designed to meet site specific leachates & construction)
- Conclusions and recommendations
  - You get what you pay for;
  - Engage contractors with the necessary expertise and experience;
  - Obtain independent technical advice, if required:
    - Tender assessment;
    - Detailed engineering design;
    - Construction



Juan Riveros - Senversa
PFAS Contaminated Soils/Material Containment Structure

Notes:

Guiding Principles for Design (similar to current landfill design):

- The main guidance document for use of geosynthetics is the Victorian Landfill BPEM (not applicable to containment sites)
    - Prescribes basal lining and capping systems – subgrade, clay lining, use of geosynthetics (GCL, geomembrane, etc.), leachate drainage and collection, gas collection, etc.
    - Environmental Audit System Sign off:
        - Development of a Design Report (intent of Design)
        - Production of Technical Specification and Construction Drawings
        - Overarching Construction Quality Assurance (CQA) Plan

Depending on the geotechnical conditions and volume of PFAS contaminated soils it may be possible to:

- Place an impermeable cap on top of the spoil heap; or
- Construct a landfill containment structure adjacent, relocate the soils, and cap off with an impermeable layer.

Kathrine Goldsmith - Mindarie Regional Council
Multi-Pronged approach to the Challenges of Landfill Leachate

Notes:

Implemented a Rainfall Plan:

This included:

- ensuring that all operational staff are aware of what to do when a rainfall event is imminent;
- minimising the operational tip face;
- diverting rainfall away from waste to a number collection points;
- manage collected leachate with;
    - evaporation ponds;
    - irrigation batters (summer);
    - irrigation to benches (summer).

The full presentations have been saved to the EMRC servers and can be forwarded upon request.

12.4 ITEMS CONTAINED IN THE INFORMATION BULLETIN

REFERENCE: Ref: D2019/05854

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

1. WASTE SERVICES

1.1 COUNCIL TONNAGE COMPARISONS AS AT 30 MARCH 2019 (Ref: D2019/05855)

RECOMMENDATION

That the Waste Advisory Committee notes the item contained in the Information Bulletin accompanying the 9 May 2019 Waste Advisory Committee Agenda.

Discussion ensued

The Director Waste Services responded to questions on the Commercial and Industrial (C&I) waste tonnages.

WAC RESOLUTION(S)

MOVED CR MCDONNELL SECONDED CR MYKYTIUK

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

CARRIED UNANIMOUSLY

13 REPORTS OF DELEGATES

Nil

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

Nil

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

Nil

CARRIED UNANIMOUSLY

16 FUTURE MEETINGS OF THE WASTE ADVISORY COMMITTEE

The next meeting of the Waste Advisory Committee will be held on ***Thursday, 6 June 2019 (if required)*** at the EMRC Administration Office, 1st Floor, Ascot Place, 226 Great Eastern Highway, Belmont WA 6104 commencing at 5:00pm.

Future Meetings 2019

Thursday	6	June	(if required)	at	EMRC Administration Office
Thursday	4	July	(if required)	at	EMRC Administration Office
Thursday	8	August	(if required)	at	EMRC Administration Office
Thursday	5	September	(if required)	at	EMRC Administration Office
Thursday	10	October	(if required)	at	EMRC Administration Office
Thursday	21	November	(if required)	at	EMRC Administration Office

17 DECLARATION OF CLOSURE OF MEETING

There being no further business the meeting was closed at 5:30pm.