

ITEM 8.1.1

ATTACHMENT 6

LETTER FROM LARRY SMITH PLANNING

14th November, 2017
Our Ref : 9140

14)

larry smith planning
urban & strategic planning & design

Chief Executive Officer
Shire of Boddington
PO BOX 4
Boddington WA 6390

Dear Sir,

**RE : NORTH BANNISTER RRP – FOOTPRINT EXPANSION
LOT 2, ALBANY HIGHWAY, NORTH BANNISTER
SUEZ RECYCLING & RECOVERY (PERTH) PTY LTD
ADDITIONAL INFORMATION**

On behalf of our Client, SUEZ Recycling & Recovery (Perth) Pty Ltd we submit the following additional information in support of our Client's Development Application including in response to matters raised during the course of the current public submissions period.

Specifically, this submission addresses the following:

1. Advice from Bibbulmun Track Foundation
2. Risk of Pollution of Downstream Stock Water & Runoff
3. Inclusion of Tyre Storage Area
4. Fugitive Roadside Litter
5. Fugitive Roadside Litter Management Plan
6. Odour; Aesthetics; Plants & Wildlife and Atmosphere Impacts.
7. Boddington River Action Group

1. Advice from Bibbulmun Track Foundation

SUEZ has presented the proposed Footprint Expansion to the Board of the Bibbulmun Track Foundation (BTF) for their consideration and comment. The Board considered the proposed Expansion at its October 2017 Meeting and resolved to advise SUEZ that [Attachment 1]:

"... it offered no objection provided that the concerns originally raised by the Foundation continued to be addressed. Namely:

- *Maintain screening of the facility, and establish a 'green wall' along the western edge of the landfill cell to minimise visual impact from the Bibbulmun Track.*
- *Progressive capping and planting of vegetation to take place as sections of the landfill are completed to minimise the visual impact from Boonering Hill.*
- *Consideration of noise and smell impacts.*

We understand that once this vegetation has been established the landfill will blend with the surrounding topography and visual impact will be minimal."

The BTF further advised that it has not received any complaints regarding the North Bannister Resource Recovery Park (NBRRP) operation from walkers.

2. Risk of Pollution of Downstream Stock Water & Runoff

Concerns have been raised by a landowner to the south of the NBRRP in respect of the southerly flowing stream to the immediate east of the landfill footprint, the potential for the stream to be contaminated and the effect such contamination will have on watering of stock.

The stream is an expression of the groundwater table and primarily flows in winter and spring. The groundwater flows in a general south-easterly direction. The groundwater quality is not suitable as potable supply but is acceptable for stock watering purposes.

There are four potential sources of contamination of the stream by the landfill operation and specifically:

1. Leachate moving into the groundwater below the landfill
2. Overflow of leachate from the holding / evaporation ponds
3. Contamination from the Composting Area
4. Fuel / chemical spills.

Landfill Leachate:

The NBRRP Landfill is highly engineered and conforms with Department of Water and Environmental Regulation (DWER) requirements for Class II & III Landfills. The floor of the landfill cells within the current and expanded footprints will maintain a minimum two metre clearance to the groundwater, where necessary by the use of fill to raise the floor level of the landfill cell. As discussed at Section 7.2 of the Planning Report the landfill is designed and constructed to minimise the risk of any leachate moving into the groundwater system and comprises a series of lining layers as follows (from bottom to top):

- A 500 mm low permeability material (typically clay), compacted and rolled to act as an attenuation layer and initial buffer.
- A Geosynthetic Clay Liner (GCL) will be installed over the base of the landfill cells and on the side slopes between the base and the Liner. The GCL will have a hydraulic conductivity of less than 1×10^{-9} m/s. The GCL will limit contaminant migration, water seepage and landfill gas migration in the unlikely event that the HDPE Liner is punctured.
- A 2.0 mm thick High Density Polyethylene (HDPE) membrane liner will be placed directly above the GCL to further mitigate the risk of contaminant migration and control landfill gas migration. All joints are heat welded on-site and tested for compliance.
- A non-woven geotextile cushion layer is placed on top of the HDPE liner to serve as a protective layer, minimising the risk of damage or puncture during installation of the drainage layer and operation of the landfill;
- A 300 mm aggregate layer will be laid on top of the cushion layer to act as a leachate drainage layer. The hydraulic conductivity of the drainage layer will be greater than 1×10^{-3} m/s.
- Leachate collection pipes will be installed at the base of the drainage layer.
- A non-woven geotextile layer will be placed on top of the aggregate to serve as a separation layer from the waste.

Existing groundwater monitoring bores installed in 18 locations across and surrounding the existing and proposed landfill areas have been regularly sampled since 2011. Review of the groundwater quality database and field investigation show no evidence of contamination to groundwater at the existing landfill and proposed landfill extension site.

Overflow of Leachate:

As discussed at Section 7.4 of the Planning Report, leachate generated within the landfill is extracted and pumped to lined leachate holding / evaporation ponds adjacent to the landfill.

The leachate management system currently consists of one Leachate Pond (LP1) with a second Pond (LP3) nearing completion, both providing storage capacity for the landfill leachate. A third Leachate Pond (LP2) exists for the existing composting platform but is not utilised for landfill leachate. In addition a fourth Leachate Pond (LP4) will be constructed when the composting platform is expanded for containment of organics leachate only.

The proposed management system for the leachate from the landfill involves extraction of leachate via a pump system, which is then transferred to the landfill Leachate Ponds (LP1 and LP3).

Table 1: Properties of Existing or soon to be Constructed or Completed Leachate Infrastructure

Pond	Storage Capacity (operating water level excluding freeboard)	Leachate Source	Freeboard	Storm Event
LP1 ³	10 770 m ³	Landfill and Organics Platform	1.1 m	1:20 year Annual Recurrence Interval (ARI), 24 hr duration 1:100 yr ARI, 72 hr
LP2 ²	2 900 m ³	Organics Platform ¹	0.5 m	
LP3 ^{3,4}	15 380 m ³	Landfill	0.3 m	

LP4 ²	2 900 m ³	Organics Platform ¹	0.5 m	duration
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1 No landfill leachate is stored in the two leachate ponds designated for the organics platform. The pump system only allows leachate from the organics platform to be pumped to LP1.

2 LP2 and LP4 has sufficient capacity to accommodate the 1:20yr ARI, 24 hr storm event when at full operating level. Both ponds have sufficient capacity to contain the 1:100yr ARI, 72hr event when empty. Should the 1:100yr ARI event occur while the ponds are full, the excess run-off will be pumped to LP1.

3 LP1 and LP3 has been designed as a combined system as LP3 will automatically overflow into LP1, via a gravity system, when it reaches its maximum operating water level. The freeboard in LP1 is sufficient to accommodate the 1:100 yr ARI, 72 hr duration incident rainfall on all four leachate ponds.

4 Note that LP3 has been sized to accommodate leachate from the existing landfill as well as leachate from SUEZ's closed Shale Road landfill. This allows SUEZ to manage the leachate from both facilities in a responsible manner. The capacity of LP3 is based on conservative estimates of leachate production.

Leachate levels within the Ponds are closely monitored, particularly during winter. Freeboard levels are maintained at all times through re-circulation over the active landfill cell and, in extreme events, tankering of leachate off-site to an approved liquid waste disposal facility.

An automated leachate monitoring system is in the process of being installed to monitor and control the flow of leachate within the facility. Some of the features of this system include an intrinsically safe liquid level monitoring system with multiple layers of overflow protection, an automatic notification system to site personnel and automatic pump start up and shut down. There has not been an overflow event of the Leachate Ponds; including during the heavy rainfall events in early and mid-2017.

Future Leachate Ponds for landfill leachate will be designed and constructed, as required, to the same rigor as the existing system based on the ongoing monitoring and modelling results. Site planning for the Expanded Footprint makes provision for an additional three Leachate Ponds if required - LP5 & LP6 to the north of LP3 and LP7 to the south of the composting area. The leachate management strategy aims to reduce pond storage levels during the summer season to maximise available capacity for subsequent winter periods.

Expansions to the leachate pond system for the landfill leachate will be designed to accommodate inflow from the following sources:

- Leachate from the landfill sumps (leachate production is expected to reach a 'steady state' as old cells are capped and new cells are developed)
- Contaminated run-off from the landfill cells
- Incident rainfall on the leachate ponds
- 1:100 yr ARI, 72 hr storm event
- Leachate from the composting leachate ponds when the capacity of these ponds are exceeded (e.g. rainfall events equivalent or greater than 1:100 yr ARI, 72 hr events.)
- Leachate from SUEZ's closed Shale Road Landfill.

SUEZ is confident that leachate volumes can be adequately accommodated within the Leachate Pond system and that practical measures are in place to deal with extreme weather events.

Composting Area:

SUEZ have lodged application with the Shire to increase the size and throughput of the green waste composting operation at the NBRRP from the current 35,000 tpa to 110,000 tpa.

The composting operation is undertaken on sealed hardstand area, being a combination of bitumen hardstand and concrete with finished product to be held in lined concrete bunkers to minimise the risk of any leachates entering the groundwater system.

Fuel / chemical spills:

Fuels and chemicals are stored within appropriately sized concrete bunded areas to prevent movement outwards into the groundwater system in the event of a spill. Re-fuelling is conducted on a bunded hardstand area to likewise contain spillages.

Given the above, it is considered that the risk of contamination of the southward flowing creek impacting stock watering requirements downstream is minimal.

3. Inclusion of Tyre Storage Area

The proposed Tyre Storage Area is for the purposes of the interim holding of tyres recovered from the incoming waste stream prior to transport to Perth for recycling. The storage area is hard surfaced and is not for the purposes of long term holding / disposal of tyres.

4. Fugitive Roadside Litter

SUEZ is conscious of the fugitive litter issue along Albany Highway and has been working progressively to address the problem since acquiring the NBRRP in mid-2016.

Measures that SUEZ have initiated to address the matter are:

SUEZ Waste Transfer Trailers:

SUEZ utilises side tipping waste transfer trailers from its Transfer Stations at Landsdale and Welshpool and "walking floor" trailers from its Bibra Lake Transfer Station to transfer waste to the NBRRP. The trailers have a rollover canvas cover to prevent waste escaping. It became evident that the current covers were inadequate and SUEZ commenced modifying its fleet of trailers in early 2017 to improve waste containment and improve the roll-over canvas covers. In particular, the hydraulic arms of the trailers have been modified to accommodate longer and broader covers to provide greater overlap at the front, rear and sides of the trailer. Modification of the SUEZ trailer fleet is expected to be completed by late 2017 and it is expected that the modifications will significantly reduce fugitive litter. Initial indications from the trailers that have been modified so far are encouraging. SUEZ will continue to monitor the operation of the modified trailers and will undertake further enhancements, as required, to ensure fugitive litter is minimised.

2nd Party Waste Trailers:

SUEZ has established an inspection regime of 2nd Party waste trailers to ensure adequate cover of the load. Trailers that do not comply with SUEZ's requirements are banned from accessing the NBRRP until appropriate modifications have been undertaken and approved by SUEZ.

Albany Highway Litter Collection:

SUEZ has instituted a Roadside Litter Collection Team and has completed collection of all roadside litter from the NBRRP entry road to the top of Bedforddale Hill (Canning Dam Rd). SUEZ will now commence a fortnightly litter patrol along the length of Albany Highway from Bedforddale Hill to the NBRRP Entry Road.

Initial monitoring of Albany Highway from the entry road north to Bedforddale Hill indicates that measures taken to date in respect of the waste transfer trailers have been effective in reducing the fugitive litter with further improvements expected as the cover modifications to the balance of the waste trailer fleet are completed.

Initial monitoring has indicated a fortnightly collection regime as likely to be adequate with the possibility of an increased interval as further litter containment measures come into effect.

5. Fugitive Roadside Litter Management Plan:

While minimisable, SUEZ acknowledges that some fugitive roadside litter is unavoidable. In order to minimise the visual and amenity impacts of fugitive litter along Albany Highway, SUEZ will implement the following management regime.

FUGITIVE ROADSIDE LITTER MANAGEMENT PLAN

Waste Trailer Covers:

- SUEZ and 2nd Party Waste Trailers shall be required to maintain an effective cover to minimise escape of litter during the transport of waste to the NBRRP. Waste Trailers that do not comply with SUEZ cover requirements will be prohibited from accessing the NBRRP.
- SUEZ will inspect all trailers at least weekly, including 2nd Party trailers, to ensure that the covering is not damaged to the extent where fugitive litter may result during transportation. Waste Trailers covers that are damaged will be prohibited from accessing the NBRRP until repair or replacement of the faulty cover has been undertaken.

Loading of Waste Trailers:

- As far as practical, light waste such as paper and plastics that may become airborne during transportation, shall be limited to the lower three-quarters of the waste trailer with denser waste placed on top to minimise the risk of escape of litter.
- Following completion of loading, the surface of the waste will be tamped down as hard as practical to minimise the risk of escape of litter.
- Each load will be inspected for any loose surface materials prior to departure.

Roadside Litter Collection:

- SUEZ will retain at the NBRRP site a Roadside Litter Collection Team to undertake on-going roadside collections on both a regular and ad-hoc basis in the event of an incident.
- SUEZ will undertake fortnightly Litter Collection along the length of Albany Highway from Bedforddale Hill to the NBRRP Entry Road.
- SUEZ, in consultation with the Shire of Boddington, will review the frequency of the Roadside Litter Collection regime, initially every three months, to determine the effectiveness of the collection regime. SUEZ, with the agreement of the Shire, may increase or decrease the frequency of Roadside Litter Collection depending on the outcomes of monitoring over the previous quarter.
- SUEZ will, as soon as practical and within 24 hours, respond with a Collection Team to a particular litter problem reported to it by the Shire of Boddington or to an incident litter spill from either its waste trailers or those of 2nd Parties.

6. Odour; Aesthetics; Plants & Wildlife and Atmosphere Impacts

A Respondent to the Shire has sought information in respect of the above matters. In addition to the Planning Report, Attachment 2 prepared by SUEZ's Environmental Engineers – Golder Associates - provides a specific response to the concerns raised.

7. Boddington River Action Group

The Boddington River Action Group have raised concerns in respect of the following matters:

Shire has already set a precedent and will have greater difficulty in refusing the establishment of new properties for the purposes of dumping Perth waste – Approval of the proposed Expanded Footprint does not set a precedent for additional future landfills within the Shire. Any additional future landfill proposal will require a specific Development Application the Shire as well as approval of the DWER. Any such proposal will need to be considered by the Shire and DWER on its individual merits.

While country shires accept this external waste, there is no incentive for minimising/utilising waste stream resources – As noted in the Planning Report, the WA State Government "Western Australian Waste Strategy" aims to significantly reduce the volume of Metropolitan waste diverted to landfill by up to 65% by 2020. The WA Waste Authority primarily achieves these targets through setting disposal fees on waste taken to landfill which provides a significant incentive to minimise landfill waste streams. Current recycling rates are at approximately 40% of the Municipal Waste Stream and increasing. Notwithstanding, there is a significant portion of the waste stream that cannot currently be recycled either physically or economically, with WA's isolation adding further difficulties with access to recycled product markets. In respect of the location of future landfills, DWER siting requirements effectively limit future landfills to areas south of the Metropolitan Region, the foot of the Darling Scarp or areas inland thereof.

Leachate Containment and Odour – Part 2 above addresses the issue of leachate management. SUEZ has not received any complaints of odour from its current operations at the NBRRP.

We trust the above additional information and comments are of assistance.

Should you require any further information please do not hesitate to contact Mr Larry Smith of *Larry Smith Planning* on Mb : 0418-916908 or by Email at larryps@bigpond.com or Mr Craig Barker of SUEZ on Mb : 0408-633684 or by Email at craig.barker@suez.com.

Yours faithfully,

Larry Smith

Director

ATTACHMENT 1 :

BIBBULMUN FOUNDATION ADVICE - EXPANDED FOOTPRINT

PO Box 7605, Cloisters Square, Perth, Western Australia 6850
1st Floor, Mountain Designs Adventure Building, 862 Hay St, Perth, WA
Phone: +61 (08) 9481 0551 or +61 (08) 9321 0649 Fax: +61 (08) 9481 0546
Email: friends@bibbulmuntrack.org.au Web: bibbulmuntrack.org.au



6 November 2017

Mr Craig Barker
State Infrastructure Manager – WA
SUEZ Recycling & Recovery Australia
116 Kurnall Road
WELSHPOOL WA 6106

Dear Craig

RE: Expansion of North Bannister Resource Recovery Facility, Lot 2, Albany Highway

Thank you for advising the Foundation of the application to extend the above facility and for the visual impact assessment conducted by Golder Associates.

The Board considered the expansion and offered no objection provided that the concerns originally raised by the Foundation continued to be addressed. Namely:

- Maintain screening of the facility, and establish a 'green wall' along the western edge of the landfill cell to minimise visual impact from the Bibbulmun Track.
- Progressive capping and planting of vegetation to take place as sections of the landfill are completed to minimise the visual impact from Boonering Hill.
- Consideration of noise and smell impacts.

We understand that once this vegetation has been established the landfill will blend with the surrounding topography and visual impact will be minimal.

I am pleased to advise the BTF has not received any complaints regarding the operation from walkers.

Yours sincerely

Linda Daniels
Executive Director

"Supporting the management of the Bibbulmun Track so that it becomes and remains a long distance walk trail of international significance and quality."

ABN: 17 097 317 481

ATTACHMENT 2 :

ODOUR; AESTHETICS; PLANTS & WILDLIFE AND ATMOSPHERE IMPACTS
GOLDER ASSOCIATES

RESPONSE TO COMMUNITY CONCERNS

Table 1: Response to Community Concerns

Community Concern	Response	Reference
<p>Odour – Please explain and provide pertinent details of the applicant’s plan to mitigate the effects of the odour from the rubbish dump and proposed expansion</p>	<p>The landfill site is located 4.4 km from the nearest sensitive receptor (residence) which combined with the intervening landform and vegetation provides a considerable buffer minimising the risk of odour impacting the amenity of the surrounding environment. Note: A proposed putrescible landfill site (Class II and III) is subject to a recommended separation distance of 1000 m (1 km) (EPA, 2015).</p> <p>The following management and mitigation measures are adopted to minimise odour emissions during the operation of the facility:</p> <ul style="list-style-type: none"> ■ All wastes delivered to the site are contained in a covered vehicle to minimise potential odour emissions. ■ Daily covering of the active landfill cell with 150 mm thick soil cover or alternative cover materials. ■ Progressive covering of waste to limit oxygen availability and aerobic decomposition. ■ Odorous waste is covered immediately upon placement. ■ Check areas previously covered regularly and apply more cover where necessary. ■ Only one tipping face is active at any time and the surface area of the active tipping face is kept as small as possible. ■ Operational procedures adopted at the tipping face will aim to prevent surface ponding of water which can potentially emit odours. ■ Effective compaction of the waste will also act to minimise the release of odours from recently tipped waste. ■ Implementation of a landfill gas collection system. ■ Effective collection and management of leachate. ■ Progressive capping of landfill cells to contain landfill gas. ■ Monitoring landfill gas within the gas extraction system. ■ Maintenance of on-site buffers. 	<ul style="list-style-type: none"> ■ Golder (2017). <i>SUEZ recycling and Recovery Environmental Impact Assessment for North Bannister Landfill Expansion</i>, August 2017, 1671227-002-R-Rev0. Golder Associates Pty Ltd. ■ Environmental Protection Authority (EPA) (2015). <i>Draft Environmental Assessment Guideline for Separation Distances between Industrial and Sensitive Land Uses</i>, Western Australia, September 2015. ■ Perthwaste Green Recycling (2015). <i>NBRFF Operations Management Plan</i>. North Bannister Resource Recovery Facility. 2015. ■ DWER (2016). Licence L8871/2014/1 North Bannister Waste Facility Pty Ltd.
<p>Runoff – Please explain and provide pertinent details of the applicant’s plan to mitigate the effect of its proposed expansion on natural runoff of water during heavy rain or storms. Specifically, you are urged to request details as to how the applicant plans to address the contamination of drinking water supplies such as lakes and rivers.</p>	<p>Odour is also managed through the implementation of the relevant conditions within Licence L8871/2014/1.</p> <p>The landfill is positioned within the Hotham Catchment and located on the southern side of a ridge line dividing the Hotham and Upper Serpentine Catchments. This location means that the risk of groundwater or surface water impact from the site on the nearest and most substantial watercourse/tributary is negligible due to the directional flow of water into the Hotham Catchment (DWER, 2016). The nearest creek to the landfill is Gringer Creek, approximately 6 km south-east of the landfill, which flows into the Hotham River.</p> <p>Surface water on site is channelled from around the southern and eastern edges of the existing landfill to Stormwater Dam 1. Overflow from Stormwater Dam 1 (SD1) drains along a natural drainage channel toward Stormwater Dam 2 (SD2), which in turn overflows into Stormwater Dam 3 (SD3). Surface water also drains east across the southern part of the proposed landfill extension along existing, indistinct water courses. Stormwater Dam 4 (SD4) is located in the south-eastern corner of the site and overflow from this dam drains east along an existing water course until its confluence with the south-easterly flowing drainage line between SD2 and SD3.</p> <p>Surface water data collected from SD1, SD2 and SD3 between July 2012 and September 2016 indicates that collected surface water run-off from the site is fresh, slightly acidic and has a low nutrient content (average total nitrogen = 2.3 mg/L). The relatively good water quality and the absence of key landfill indicators, such as elevated potassium to chloride ratios and elevated nitrogen species, supports the view that surface water is currently not impacted by the landfill. The historic surface water laboratory data (since 2012) indicates some variability in laboratory results which may reflect seasonal influences due to evaporation and rainfall effects.</p> <p>Surface water will be managed in accordance with a site specific Surface Water, Drainage and Sediment Control Plan, which will include the following management measures:</p> <ul style="list-style-type: none"> ■ Manage the storage of chemicals and hazardous materials in accordance with industry best practice and manufacturer’s recommendations. ■ Divert undisturbed (uncontaminated) surface run-off in a manner to prevent erosion. ■ Prevent stormwater from disturbed areas flowing offsite or entering waterways. ■ Store all waste materials (drums, chemical containers, etc.) in a protected, bunded area well away from waterways. 	<ul style="list-style-type: none"> ■ Golder (2017). <i>SUEZ recycling and Recovery Environmental Impact Assessment for North Bannister Landfill Expansion</i>, August 2017, 1671227-002-R-Rev0. Golder Associates Pty Ltd. ■ DWER (2016). Licence L8871/2014/1 North Bannister Waste Facility Pty Ltd.

RESPONSE TO COMMUNITY CONCERNS

Community Concern	Response	Reference
<p>Aesthetics – please explain and provide pertinent details of the applicant’s plan to mitigate aesthetic effects of a large-scale rubbish dump in our local community. In addition, you are urged to provide specific details on how you plan to mitigate its impact on tourism and ensuring minimal impact to community revenue.</p>	<ul style="list-style-type: none"> ■ Ensure all spills and leaks are cleaned up immediately and waste correctly disposed of. ■ Ensure all contaminated soil/water is removed by licensed contractor. ■ Position stockpiles in a suitable area away from stormwater/surface water flow. <p>Ambient surface water quality is monitored biannually, in accordance with conditions in Licence L887/12014/1.</p> <p>The landfill site is located in a remote bushland area (approximately 4.4 km from the nearest sensitive reception), which combined with the intervening landform and vegetation, provides a considerable buffer minimising impacts to visual and landscape amenity.</p> <p>A small section of the 1000 km Bibbulmun Track passes the northern and western boundaries of Lot 2 and is approximately 400-500 m to the northern boundary of the existing facility.</p> <p>The landfill will be visually obstructed from the track due to its positioning beyond the crest of a hill and the regrowth of the harvested Blue Gum Plantation. Following the 2023 Blue Gum harvest, a 20 m screening barrier of trees will be retained to maintain visual obstruction.</p> <p>A Visual Impact Assessment (Perthwaste, 2011 and Golder, 2017), conducted in discussion with the Bibbulmun Track Foundation found the landfill will be visible from the summit of Boonering Hill. Boonering Hill is located approximately 1 km west of the landfill. Visual amenity of the landfill, including capping and revegetation will be managed in accordance with the Licence L887/12014/1 and NBRRF Environmental Management Plan.</p>	<ul style="list-style-type: none"> ■ Perthwaste (2011). <i>Bibbulmun Track Visual Impact Assessment</i>. 2011. ■ Golder (2017). <i>SUEZ recycling and Recovery Environmental Impact Assessment for North Bannister Landfill Expansion</i>. August 2017. ■ DWER (2016). Licence L887/12014/1 North Bannister Waste Facility Pty Ltd. ■ SUEZ (2017). NBRRF Environmental Management Plan. DRAFT.
<p>Plants and wildlife – please explain and provide pertinent details of the applicant’s plan to mitigate the effects of the intended expansion on native species of plants and animals, as a result of clearing of native habitats. Additionally, please provide details of the applicant’s plan to mitigate health complications and the potential death of plants and animals, and the destruction of food sources for local animals.</p>	<p>Flora</p> <p>A Flora and Vegetation survey (ENV Australia Pty Ltd (ENV), 2011) and a desktop ecological survey (Animal Plant Mineral (APM), 2017) was conducted for the Project. Whilst the 2011 survey was conducted in an area outside of the proposed expansion zone (<100 m to the north), the findings are considered applicable to the expansion. This is due to the degree of likeness between the vegetation complexes with both areas being dominated by Tasmanian Blue Gum (<i>Eucalyptus globulus</i>) plantation with isolated patches of disturbed remnant vegetation. A summary of survey findings is presented below:</p> <ul style="list-style-type: none"> ■ The proposed expansion area extends into Tasmanian Blue Gum plantation. There are two adjoining patches of remnant vegetation that could potentially be foraging and or breeding habitat, but the final landform design footprint avoids these areas. ■ The dominant vegetation complex of the proposed project area is Dwellingup 4 (D4) (Matiske and Havel, 1998), <i>Allocasuarina fraseriana</i>. The D4 vegetation complex is found to be well represented in the greater region. ■ No species of conservation significance were recorded within the survey area. All species of conservation significance that were identified as potentially occurring in the survey area are perennial and would have been identified during the survey if present. ■ The database search determined that no Threatened Ecological Communities (TECs) or Priority Ecological Communities (PECs) are known to occur within the Project area. ■ Department of Water and Environmental Regulation (DWER), Department of Biodiversity, Conservation and Attractions (DPCA) and the Federal Department of Environment and Energy (DEE) databases have no record of groundwater dependant ecosystems within the catchment in which the landfill is located (within a 15 km search radius). ■ Vegetation condition within the survey area varied from ‘Degraded’ to ‘Completely Degraded’. Known disturbances include historical logging, fire and invasion by introduced species. ■ Areas that have been entirely altered from their natural state were described as being ‘Completely Degraded’ and are represented by the Tasmanian Blue Gum (<i>Eucalyptus globulus</i>) plantation. ■ As none of the conservation significant species were identified during the survey and the vegetation was recorded as ‘Degraded’ it is considered unlikely that Lot 2 Albany Highway supports species of conservation significance. <p>The landfill has been specifically located to avoid clearing of remnant bushland on the site. Limited clearing will be required, within plantation forest only. The following flora management measures will be included in a site specific management plan:</p> <ul style="list-style-type: none"> ■ Restrict vegetation clearing to the minimum area required for works and clearly demarcate limits of vegetation clearing and disturbance (including marking on site map). 	<ul style="list-style-type: none"> ■ Golder (2017). <i>SUEZ recycling and Recovery Environmental Impact Assessment for North Bannister Landfill Expansion</i>. August 2017. ■ 1671227-002-R-Rev0, Golder Associates Pty Ltd. ■ Animal Plant Mineral Pty Ltd (2017). <i>North Bannister Landfill Fauna Survey</i>. Animal Plant Mineral. Ellenbrook WA. ■ Matiske E.M; Havel, J.J., (1998). <i>Vegetation Complexes of the South-west Forest Region of Western Australia. Maps and report prepared as part of the Regional Forest Agreement</i>. Western Australia for the Department of Environment and Conservation and Environment Australia. Western Australia. ■ ENV (2011). <i>Lot 2 Albany Highway, North Bannister, Flora and Vegetation Assessment</i>. ENV 2013 11/003. ENV, Western Australia. ■ ENV (2011). <i>Lot 2 Albany Highway North Bannister Black Cockatoo Habitat Assessment</i>. 10.232 11/016. ENV, Western Australia.

RESPONSE TO COMMUNITY CONCERNS

Community Concern	Response	Reference
<p>Atmosphere – please explain and provide pertinent details of the applicant’s plan to mitigate the effects of harmful chemicals found in household appliances and other litter, which can be extremely damaging when released. Specifically, please provide details of the applicant’s planned treatment of refrigerators and freezers that contain either tetrafluoroethene (sic) or chloro-fluoro-carbon, both of which have harmful effects on the ozone layer.</p>	<ul style="list-style-type: none"> ■ Carry out progressive and approved revegetation as per the Operations Management Plan. ■ Implement dust management measures. ■ Educate site personnel on practices to avoid damage to native flora, minimise soil disruption, and appropriate weed management. ■ Ensure spoil piles with weeds are at least 25 m from native vegetation. ■ Ensure civil machinery and equipment are free of plant matter and soil when entering the site. <p>Fauna</p> <p>The desktop ecological survey (APM, 2017) identified that up to 27 fauna species have the potential to occur within the project area. The fauna species of conservation significance are:</p> <ul style="list-style-type: none"> ■ Chuditch (<i>Dasyurus geoffroi</i>) is listed as Vulnerable under the Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act) and the Wildlife Conservation Act 1950 (WC Act) ■ Carnaby’s Black Cockatoo (<i>Calyptorhynchus latirostris</i>) endangered under the EPBC Act and WC Act ■ Baudin’s Black Cockatoo (<i>Calyptorhynchus baudinii</i>) endangered under the EPBC Act and WC Act ■ Forest Red-tailed Black Cockatoo (<i>Calyptorhynchus banksii naso</i>) is listed as Vulnerable under the EPBC Act and WC Act ■ Western brush wallaby (<i>Macropus irma</i>) is listed as a P4 under the WC Act. <p>All three Black Cockatoo species found in the State’s south-west are considered <i>likely</i> to occur in the area (DOE, 2012). The Chuditch and the Western brush wallaby are <i>known</i> to occur in the greater area (DEE, 2017). Potentially suitable feeding, refuge and maternal denning habitats for the Chuditch and Western Brush Wallaby; and nesting habitat for the Black Cockatoos, were identified in the remnant vegetation found <i>adjacent to and outside of</i> the proposed expansion footprint. However, the small size and disturbed/absent understorey limits the diversity of native fauna potentially occupying the area (APM, 2017).</p> <p>The following fauna management measures will be included in a site specific management plan:</p> <ul style="list-style-type: none"> ■ Relocate native fauna if discovered on site/ff required during site works. Fauna can only be handled by qualified and licensed personnel. ■ Restrict access to Project Area to prevent community and fauna access. ■ Adequately contain/cover all waste and make landfill areas inaccessible to fauna, including feral animals. ■ Implement traffic control measures for the Project e.g. speed limits to prevent fauna accidents. ■ Implement dust and noise management measures as specified within the Operations Management Plan. ■ Fill excavations as soon as practicable. ■ Conduct inspections of excavations each morning to locate any trapped fauna and relocate if necessary. <p>Metropolitan local councils specifically target whitegoods for recycling, offering free verge collection services, diverting this waste from landfill. Additionally, SUEZ endeavours to recover and recycle valuable materials before landfill disposal.</p> <p>The landfill will only accept waste (type and quantity) permitted under L8871/2014/1. Waste accepted at the landfill will be processed and disposed of in accordance with L8871/2014/1 License conditions.</p> <p>The following chemical and hazardous waste management measures will be included in a site specific management plan:</p> <ul style="list-style-type: none"> ■ Store all chemicals and hazardous materials in containment appropriate for the volume and nature of the chemicals. ■ Assess the location, contents, specification/suitability and integrity of the chemical storage areas as required (i.e. not near waterways or drains). ■ Contain and appropriately manage spills using absorbent materials and spill kits. ■ Store spill control equipment in critical locations to allow for a quick response. ■ Educate site personnel as to spill response and kit locations. ■ Manage contents of spill kits to ensure adequate supplies are available. 	<ul style="list-style-type: none"> ■ Golder (2017). <i>SUEZ recycling and Recovery Environmental Impact Assessment for North Bannister Landfill Expansion</i>, August 2017, 1671227-002-R-Rev0. Golder Associates Pty Ltd. ■ DWER (2016). Licence L8871/2014/1 North Bannister Waste Facility Pty Ltd.

RESPONSE TO COMMUNITY CONCERNS

Community Concern	Response	Reference												
<p>Composting Area</p>	<p>Current and proposed composting volumes:</p> <table border="1" data-bbox="287 884 470 1534"> <thead> <tr> <th>Material Type</th> <th>Existing Quantity</th> <th>Proposed Quantity</th> </tr> </thead> <tbody> <tr> <td>Greenwaste, Food Waste and Biosolids</td> <td>33,000 tpa compost produced, with a max. of 10,000 tpa biosolids accepted</td> <td>100,000 tpa compost produced, with a max. of 30,000 tpa biosolids accepted</td> </tr> <tr> <td>Liquid Waste – K110 Grease Trap Waste</td> <td>2,000 tpa</td> <td>10,000 tpa</td> </tr> <tr> <td>Total</td> <td>35,000 tpa</td> <td>110,000 tpa</td> </tr> </tbody> </table> <p>Materials accepted at composting facility:</p> <ul style="list-style-type: none"> ■ Green waste from vergeside bulk collections; ■ Green waste from organics bin kerbside collections; ■ Food waste from market gardens and retail fruit and vegetable markets; ■ Biosolids; and, ■ Grease trap liquid waste. <p>Description of facility:</p> <p>The existing facility incorporates the following infrastructure and activity areas:</p> <ul style="list-style-type: none"> ■ Assess roads, stormwater drains and perimeter fencing ■ Concrete hardstand (625 m²) for initial mixing of input feedstock ■ Bitumen/asphalt sealed area (13,375 m²) for composting ■ Gravel area for compost screening and storage (6,000 m²) ■ Leachate collection drains and leachate pond (Leachate Pond No. 2) ■ Services: <ul style="list-style-type: none"> ■ Leachate ■ Water ■ Power ■ Three groundwater monitoring bores (MW04a, MW07 and MW08). <p>The proposed expanded facility includes the following:</p> <ul style="list-style-type: none"> ■ Laying asphalt over the existing gravel area (5,000 m²) ■ Constructing six concrete lined storage bunkers (400 m³ each) for the storage of the finished product ■ Loading ramp ■ New concrete hardstand (7,720 m²) for initial mixing of input feedstock ■ Expanded asphalt sealed area (10,350 m²) ■ Additional leachate pond (Leachate Pond No. 4) ■ Relocation of the two monitoring bores (MW07 and MW08) ■ Extension of services: <ul style="list-style-type: none"> ■ Leachate ■ Water ■ Power ■ Drainage ■ Fencing. <p>Drainage of the composting area has been designed around a 2% gradient, which is double the required minimum. The proposed design incorporates a minimum of 200 mm of well compacted gravel overlaid by 40 mm of asphalt or minimum 110 mm of reinforced concrete.</p> <p>The leachate pond and associated freeboard is easily able to cater for a 1 in 20 year, 24 hour storm event. The facility operating licence requires that the pond be designed to cater for a 1 in 100 year storm event, to which the design</p>	Material Type	Existing Quantity	Proposed Quantity	Greenwaste, Food Waste and Biosolids	33,000 tpa compost produced, with a max. of 10,000 tpa biosolids accepted	100,000 tpa compost produced, with a max. of 30,000 tpa biosolids accepted	Liquid Waste – K110 Grease Trap Waste	2,000 tpa	10,000 tpa	Total	35,000 tpa	110,000 tpa	<p>IW Projects (2017), North Bannister Resource Recovery Park – Composting Facility, Licence Amendment Supporting Documentation, Revision – Final, 23 August 2017</p>
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<p>Tyre Storage</p>	<p>complies. The actual pond sizing has been based for capturing and retaining runoff for use in the composting process as opposed to simply controlling the minimum required storm event. In addition, both the existing and new leachate ponds (Pond No. 2 and Pond No. 4) are connected to the main landfill leachate ponds, where excess leachate can be pumped if the pond freeboard cannot be maintained. All leachate is stored in ponds and the ponds are lined. A pond lining of minimum 1.5 mm thick HDPE is required by regulation, whereas the new pond incorporates a 2 mm lining, which is 30% thicker than the minimum requirement.</p> <p>Description of Facility:</p> <p>The existing facility incorporates the following:</p> <ul style="list-style-type: none"> ■ Vehicle staging area and used tyre storage area (6,000 m²). <p>The proposed expanded facility:</p> <ul style="list-style-type: none"> ■ New used tyre area (2,200 m²) ■ New vehicle staging area (7,900 m²) <p>As per licence L8871/2014/1 the maximum number of tyres that can be stored on site is 1000. In practice the number of tyres on site is generally significantly less than this. Tyres are only stored temporarily prior to being transported to Perth for recycling by a tyre recycler. Surface water contamination from the tyres stored on site is not considered a risk as the number of tyres are typically less than 50.</p>	<ul style="list-style-type: none"> ■ IW Projects (2017), North Bannister Resource Recovery Park – Composting Facility, Licence Amendment Supporting Documentation, Revision – Final, 23 August 2017 ■ DWER, North Bannister Waste Facility Pty Ltd, Licence No L8871/2014/1, Issued 6 March 2015
<p>Leachate Ponds</p>	<p>The leachate ponds are designed to hold the normal operating liquid volume as well as a 1 in 20 yr Annual Recurrence Interval (ARI) 24 hr duration rainfall event. The leachate ponds are viewed as a combined system and hence freeboard allowance to contain the design rainfall event may be allowed for in different ponds. The minimum freeboard allowance for any pond will be 300mm.</p>	<ul style="list-style-type: none"> ■ DWER, North Bannister Waste Facility Pty Ltd, Licence No L8871/2014/1, Amendment Notice Issued 12 June 2017

