

Allawuna Farm

Lots 4869, 5931, 9926 & 26934 Great Southern Highway
St Ronans, Shire of York

ALLAWUNA LANDFILL FACILITY

SITA Australia

November 2013

larry smith planning

urban and strategic planning & design

executive summary

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ALLAWUNA FARM LANDFILL

EXECUTIVE SUMMARY

for SITA Australia

November 2013

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executive summary

1. key elements

- SITA is a leader in sustainable resource recovery providing services to more than 56,000 commercial and industrial businesses Australia wide as well as over 3.7 million households.
- SITA operates a number of recycling and resource recovery facilities within WA recovering approximately 150,000 tonnes per annum of material that would otherwise be sent to landfill.
- Reduction of waste volumes to landfill will require major investments in Alternative Waste Treatment (AWT) technologies which are not without their problems and still require access to landfill to dispose of treatment residues which can represent up to 50% of the incoming waste stream tonnage.
- Existing and planned near Metropolitan landfills would be exhausted by circa 2042 at 50% recycling or circa 2045 at 65% recycling.
- Department of Environmental Regulation (DER) Guidelines effectively preclude future landfills on the Swan Coastal Plain.
- Allawuna Farm was selected following assessment of a total of 19 sites within the Shires of Boddington, Gingin, Toodyay and York against a range of criteria.
- The Allawuna Farm Landfill is located towards the western edge of the Shire of York, approximately 20km west of the York Townsite, on the southern side of Great Southern Highway.
- The landfill footprint is located centrally to the site in an area currently under crop. The landfill footprint comprises approximately 52ha or 3.5% of the total site area.
- The landfill provides a buffer of 600m which is significantly in excess of DER recommendations and is contained wholly within the site. The buffer will minimise any adverse impacts on surrounding residents, the closest of which is located 1.9km to the north-east.
- The landfill will incorporate a composite liner system and will be constructed over time as a series of cells (11 in total), with each cell having an approximate 2 to 3 year filling life. It is estimated that the facility will have a nominal life of 37 years based on between 150,000 and 250,000 tonnes of waste per annum. The facility will operate from 6 am to 5 pm Monday to Friday and from 6 am to 4 pm on Saturdays.
- Allawuna will accept only Class II waste being principally Municipal (Household) Solid Waste, waste from Commercial, Retail and Industrial premises and Construction Waste. No hazardous, liquid, noxious or radioactive waste or toxic chemicals will be accepted and exclusion of the general public will ensure that waste types accepted will be strictly controlled.
- Waste will be placed in layers of not more than 2.0 m deep. Emplaced waste will be completely covered at the end of each day.
- As the cells of the landfill fill with waste to their final design levels, they will be progressively capped and rehabilitated to provide long-term protection of the environment. The site will remain in SITA's ownership until monitoring confirms that the site is stable and inert and a certificate of completion is issued by the DER.

- In July 2013 the EPA advised that it considered that the environmental impacts of the proposed landfill were not so significant as to require EPA assessment of the proposal and that the potential environmental impacts can be regulated and managed effectively under through the works approval; environmental licence and clearing permit processes. The EPA's decision is currently under appeal.
- The landfill is located to the east of and outside the Mundaring Weir Catchment Area. The base of the landfill has been designed to maintain a minimum separation of 3m to the groundwater which is limited, flows to the north and is mostly saline. The Department of Water has advised the EPA that the proposal should have a low impact on groundwater and surface water resources over its operational life and beyond.
- The landfill will have a minimal impact on flora and fauna within the region, including Black Cockatoos.
- The landfill will not impact agricultural activities on adjacent lands and cropping / grazing activities on Allawuna Farm will continue in parallel with the operation of the landfill.
- Detailed odour modelling has shown that for the proposed operational times, procedures and waste volumes, all odour generated would be maintained well within the Farm boundary.
- A comprehensive noise assessment found that predicted noise levels at the nearest residence were within the guideline limits for times of day during both the construction and operational phases of the landfill.
- Landfill gas will be collected and flared to convert the methane into the less harmful carbon dioxide. When a sufficient quantity and quality of landfill gas is being produced the gas may be used as fuel for electricity generation.
- SITA waste will be transported by pocket road train with a maximum length of 27.5 m. A fleet of eight road trains doing three trips per day will be required and the trailers will be unmarked and fully sealed to prevent escape of litter and liquids.
- A detailed traffic impact assessment demonstrates that the increase in traffic resulting from the landfill will have minimal impact on traffic flows along Great Southern Highway and will increase the risk of a fatality only marginally and that the increased risk is still within the acceptable societal risk for fatalities.
- The landfill is fully screened from Mt Observation and Great Southern Highway by the landform and intervening vegetation and will not impact on tourism or the amenity and health of residents and visitors.
- The landfill has the potential to provide significant direct and indirect economic benefits to the broader York region through the generation of up to 90 full time jobs; equalling the total number of persons currently employed within tourist services industries within York.
- Local businesses will also benefit from direct and in-direct expenditure of up to \$14 million per annum.
- SITA remains fully committed to an open and inclusive consultation and reporting process throughout the construction and operation of Allawuna. SITA will establish a Community Reference Group as the principle point of reference and will prepare a series of management plans dealing with the construction and operation of the landfill by which the community may judge its on-going performance.

2. background

SITA Australia currently operates a landfill at Shale Road, South Cardup within the Shire of Serpentine Jarrahdale. The Landfill, which currently accepts approximately 250,000 tonnes annually of Class II waste, is approaching the end of its life. It is estimated that on current acceptance rates the landfill will be exhausted by 2016.

In May 2009 SITA commenced investigations to identify a new landfill site. Department of Environment Regulation (DER) Guidelines effectively preclude the development of landfills on the Swan Coastal Plain.

SITA undertook detailed investigations of 19 potential sites in the Shires of Gingin, Boddington, Toodyay and York against a range of criteria and concluded that a site at Lots 4869, 5931, 9926 and 26934, Great Southern Highway, Saint Ronans – Allawuna Farm – in the Shire of York was the most suitable.

In March 2013 the proposal for a Class II Landfill was referred to the Environmental Protection Authority (EPA). In July 2013, the EPA advised that the proposal did not require formal assessment as the environmental impacts and potential environmental impacts of the development and operation of the site as a landfill does not meet the threshold of significance for formal assessment. The EPA also considered advice from the DER and took the position that development and operation of the site can be appropriately regulated by the DER. The EPA's decision is currently under appeal.

The proposed landfill will have a footprint of 52ha and will accommodate approximately 11.1 million cubic metres of waste, equating to some 10.1 million tonnes. It is estimated that the facility will have a nominal life of 37 years based on between 150,000 and 250,000 tonnes of waste per annum.

Accordingly, SITA now seeks approval for the Allawuna Farm Landfill under the Shire of York Town Planning Scheme No 2.

3. proponent

SITA Australia Pty Limited (SITA) is a subsidiary of Suez Environnement SA, a leading multinational waste, recycling and resource recovery service provider.

SITA is a leader in sustainable resource recovery providing services to more than 56,000 commercial and industrial businesses Australia wide as well as over 3.7 million households. SITA currently operates seven engineered landfills around Australia accepting in excess of 2.5 million tonnes of waste per annum.

SITA has a significant presence in Western Australia and currently provides collection and disposal services to a variety of clients including local governments, service industries and commercial enterprises.

SITA also provides services to a range of commercial and industrial customers including all the major metropolitan hospitals, the Crown Casino Complex and was recently appointed as the sole waste management service provider to the new Fiona Stanley Hospital.

SITA operates a number of recycling and resource recovery facilities within WA recovering approximately 150,000 tonnes per annum of material that would otherwise be sent to landfill.

4. need for facility

The WA State Government “*Western Australian Waste Strategy – Creating the Right Environment*” (Waste Authority 2012) seeks to significantly reduce the volume of waste diverted to landfill with a target of 65% diversion by 2050.

Significant reduction of waste volumes to landfill will require major investments in Alternative Waste Treatment (AWT) technologies which are not without their problems and still require access to landfill to dispose of treatment residues which can represent up to 50% of the incoming waste stream tonnage.

Landfills are also required as a backup for when AWT plants need to be shut down due to malfunction, maintenance requirements or a surge in waste generation beyond the AWT plant’s operating capacity; such as after a major storm event or variations in seasonal metropolitan waste generation volumes.

Accordingly, there remains a need to ensure that sufficient landfill capacity exists within the system to provide for the safe management of those wastes that cannot be recovered and re-cycled economically from the waste stream.

Following the closure of a number of landfills in recent years, the Perth Metropolitan region is now serviced by only six major Metropolitan landfills. Based on current disposal tonnages, within 10 years there will effectively be only two Metropolitan landfill sites and specifically Red Hill and Rockingham. If after 10 years all current waste volumes were to be diverted to Redhill and Rockingham, both landfills would be exhausted by circa 2032, or sooner depending on the extent of reuse / recycling achieved in the interim.

DER Guidelines effectively preclude future landfills on the Swan Coastal Plain. Other considerations such as water catchments, basic raw materials and State Forest limit the siting of future landfills to locations further east of the Darling Scarp.

The WA Waste Strategy foreshadows Metropolitan landfill needs to accommodate a minimum of 870,000 tonnes per annum at 65% diversion increasing to 1,145,000 tonnes per annum at 50% diversion.

There are three “near” Metropolitan landfills that are in the advanced stages of approval but are not certain to be developed. If all three were developed and based on projected Waste Authority WA (WAWA) landfill requirements, these “near” Metropolitan sites would be exhausted by circa 2042 at 50% recycling or circa 2045 at 65% recycling.

There is clearly a need for additional landfill sites to be developed on an on-going basis to ensure an adequate supply of landfill airspace so as to maintain waste disposal costs at reasonable levels and given DER siting requirements future landfill development needs to concentrate on the development of options to the near east of the Darling Scarp.

5. site selection

Given the impending closure of its landfill at South Cardup, in March 2009 SITA commenced investigations for a new landfill site.

A total of 19 sites within the Shires of Boddington, Gingin, Toodyay and York were shortlisted for detailed assessment against a range of criteria.

Upon further investigation of site specific features, SITA in January 2012 selected Allawuna Farm as the best option as it provided full control over extended buffers; presented a low environmental risk; was directly accessible from Great Southern Hwy; was located west of the York Townsite; provided full



Source : Google Maps

ALLAWUNA FARM LANDFILL

Figure 1 : Location Plan

screening from the Highway and was within a reasonable travel distance and time to SITA's Transfer Stations.

In March 2012, SITA informed the Shire of York of its intentions and entered into an agreement with the owners to purchase the property conditional upon approval of the landfill.

6. site & surrounding land uses

The proposed Allawuna Farm Landfill is located towards the western edge of the Shire of York, approximately 20km west of the York Townsite [Figure 1 – Location Plan]. The property is known as Allawuna Farm and is described as:

Lots 4869, 5931, 9926 and 26934 in Certificate of Title Vol 285, Fol 78A, Great Southern Highway, Saint Ronans in the Shire of York.

The site is located on the southern side of Great Southern Highway approximately 80 km by road from Perth.

Allawuna Farm has a total area 1,516ha of which 75% has been cleared for farming. It is currently leased out for broad acre cropping. The site is characterised by a central North South valley containing a northward flowing, ephemeral creek – 13 Mile Brook [Figure 2 : Aerial View of Locality]. Extensive areas of remnant vegetation lay between the landfill site and the Highway which, in combination with the landform, fully screen the proposed landfill from Great Southern Highway.

The proposed landfill footprint is located centrally to the site in an area currently under crop. The landfill footprint comprises approximately 52ha or 3.5% of the total site area.

DER Guidelines recommend a buffer to sensitive uses varying from 150m in rural areas to 500m in urbanised areas. The siting of the footprint achieves a 600m buffer to the common boundary with the property to the east which is partially cleared and used for grazing and some cropping. The 600m buffer is contained wholly within Allawuna Farm.

The land to the south of the site is uncleared remnant bushland. Wandoo National Park, a large flora and fauna reserve and State Forest, abuts the western edge of the property.

The nearest residence is located 1.9km north-east of the landfill and is fully screened from the landfill by the landform and intervening remnant bushland. The next closest residence is located 2.4 km from the proposed landfill footprint.

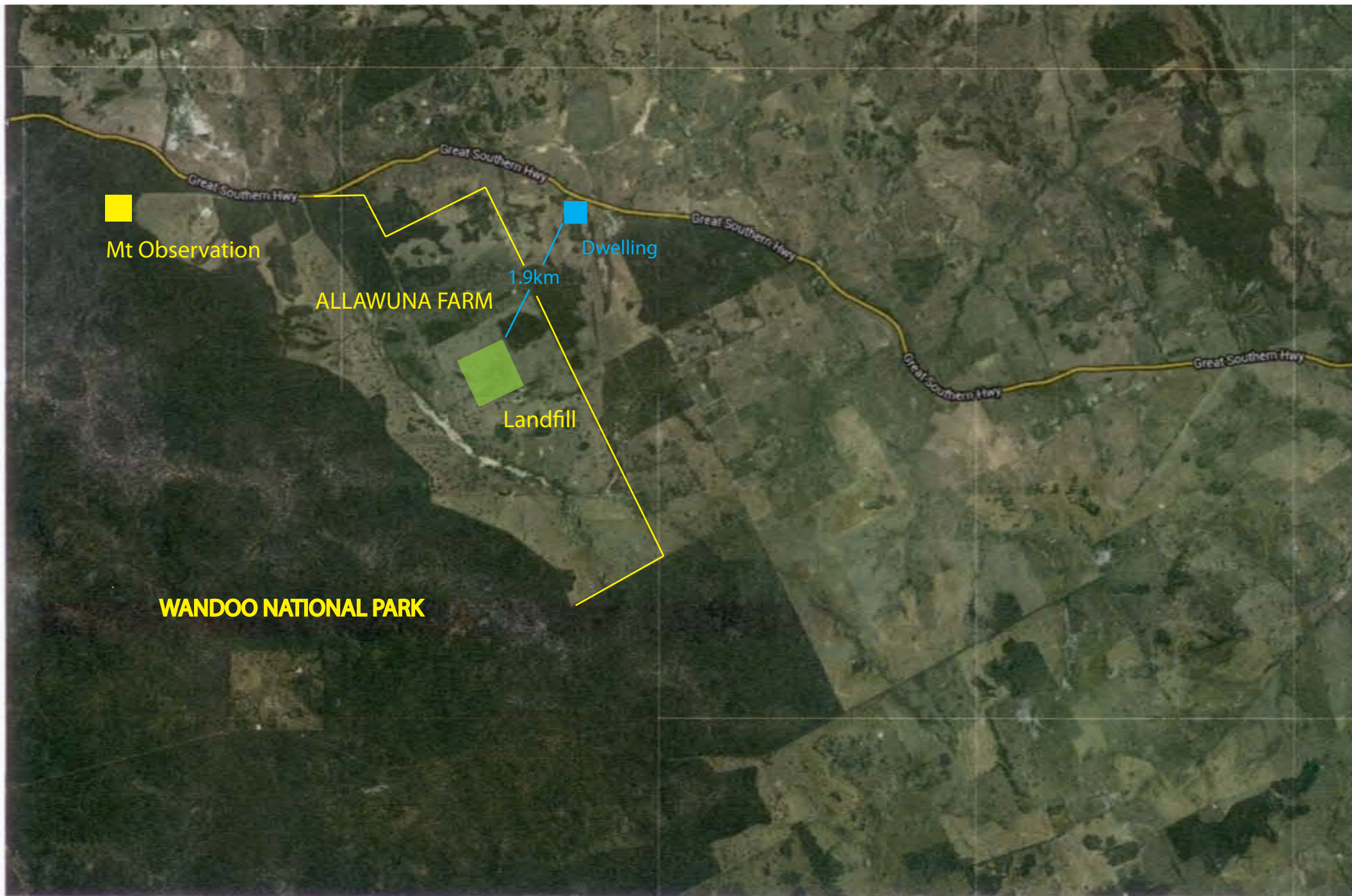
Allawuna Farm is accessed directly from Great Southern Highway, a sealed major road and an approved Restricted Access Vehicle Route.

7. local & regional planning context

7.1 state planning strategy 1997

The State Planning Strategy is a “..land use planning strategy for Western Australia's development..” to 2029.

The Strategy forecasted that the State's population would grow by 1.3% a year, increasing by one million people between 1996 and 2029 and noted that 2 million of the projected 2.7 million total population will be concentrated south-west of a line between Lancelin and Albany.



Source : Google Maps

ALLAWUNA FARM LANDFILL

Figure 2 : Aerial View of Locality

The Strategy identifies five key Principles including Economic and Infrastructure.

It is considered that Allawuna Farm is consistent with the State Planning Strategy, particularly from an economic and infrastructure planning perspective.

7.2 state planning strategy 2012 draft

The Draft State Planning Strategy 2012 envisages a doubling of Western Australia's current population to 5.4 million by 2056.

The Strategy identifies the need for:

"A network of strategically located waste management facilities and infrastructure [that] will assist recycling and stimulate innovation in reprocessing."

The Strategy further notes that:

"The siting, design, operation, and ongoing funding and management of waste management facilities is often complex. Planning for waste facilities will need to secure strategic sites and major corridors from the source to the waste facility."

Sites will need to be suitable in terms of buffers, transport access, relationship to existing waste facilities and producers, and the degree of risk of air, soil, groundwater, and surface water pollution."

Buffer areas surrounding some existing waste disposal facilities are also becoming inadequate as volumes of waste increase and sensitive land uses encroach on previously isolated facilities."

Though not adopted as yet, it is considered that the Draft 2012 State Planning Strategy is temporally more relevant than the 1997 Strategy.

It is considered that the proposal is consistent with the Draft 2012 State Planning Strategy as it builds on the current "network of strategically located waste management facilities".

7.3 avon arc sub-regional strategy 2001

The Avon Arc Sub-Regional Strategy provides a regional framework for long-term land use within the Avon Arc, which is predicted to increase in population by about 20,000 by 2030.

The strategy identifies a number of land planning units including the "Avon Valley and Zone of Rejuvenated Drainage" and identifies broadacre farming as the predominant use.

It does not preclude other appropriate uses and notes that various public uses and installations of regional or State importance, such as water treatment plants, waste disposal, prisons, airfields and utility corridors may need to be located in rural areas.

The Strategy further recognises the need to develop an integrated local and regional waste management strategy for the disposal and re-use of waste materials generated both within and outside the region. (Waste 2020 Strategy).

The Strategy recognises that tourism is a significant contributor to the local economy within the Avon Arc and has the potential to increase.

It is considered that the proposal is consistent with the Avon Arc Sub-Regional Strategy which clearly identifies the need for the location of regional waste disposal facilities in the rural areas of the Avon contingent upon access to basic raw materials, prime agricultural land or high tourism values not being compromised. The proposal does not compromise these values.

7.4 shire of york local planning strategy 2007

The Shire of York Local Planning Strategy was endorsed in August 2007. The Strategy identifies its Objectives under the key headings of Economic; Environmental; Sustainable Settlements; Servicing and Infrastructure and Heritage and Cultural.

More specifically the Strategy objectives include encouraging “...the development and diversification of businesses that will strengthen and broaden the economic base of the Shire and provide employment opportunities ..” and “... protecting broad scale agriculture..”.

The Strategy divides the Shire and Townsite into a number of Precincts. Allawuna Farm falls, for the most part, within Precinct 2b – Western Slopes Precinct (South of Great Southern Highway).

The objectives of the Precinct are to:

- *Preserve and enhance the environment and natural resources;*
- *Support continued sustainable agricultural production;*
- *Promote farm diversification; and*
- *Recognise the likelihood that existing lots may be developed.*

A number of Strategies for achieving the Precinct Objectives are identified, Those of relevance to Allawuna include:

- *A general presumption against subdivision of rural zoned land;*
- *Do not support the development of existing lots that are not adequately serviced;*
- *Any development to have regard for protection of views, particularly those from Great Southern Highway; and*
- *Ensure development has adequate setbacks and buffers from Avon River and any other designated waterways.*

It is significant that the provisions of the Precinct also recognise the potential presence of and the need to protect for future extraction “..high quality, high volume..” basic raw materials within the Precinct. In many respects the extraction of basic raw materials and landfill are similar land uses both in terms of their processes and potential impacts.

It is considered that the Allawuna proposal is consistent with the Shire of York Local Planning Strategy as it:

- Does not impact continued sustainable agricultural production;
- Does not require subdivision of Allawuna Farm;
- Will generate significant local employment opportunities;
- Will encourage the further development and diversification of businesses;

- Does not impact in any way Precinct 1a – Wandoo Nature Reserve;
- Does not impact the environment or natural resources;
- Is adequately serviced and accessed directly from Great Southern Highway;
- Is fully screened from the Highway; and
- Provides adequate setbacks to 13 Mile Brook.

7.5 shire of york town planning scheme no 2

The Shire of York TPS No 2 was Gazetted in May 1996. Allawuna Farm is located within the “General Agriculture” Zone. [Figure 3 : Scheme Map].

Table 1 – Zoning Table of the Scheme sets out a number of land uses and the “permissibility” of those uses within the various Zones of the Scheme. Table 1 does not specifically provide for the use of waste disposal / landfill.

Clause 3.2.4 of the Scheme makes provision for Council to consider uses not specifically mentioned in Table 1 – Zoning Table of the Scheme.

Accordingly, the Application for Planning Consent for Allawuna Farm Landfill is submitted under the provisions of Clause 3.2.4 as a Use Not Listed.

The Scheme notes the objectives of General Agriculture Zone as being;

- *To ensure the continuation of broad-hectare agriculture as the principal land use in the district encouraging where appropriate the retention and expansion of agricultural activities.*
- *To consider non-rural uses where they can be shown to be of benefit to the district and not detrimental to the natural resources or the environment.*
- *To allow for facilities for tourists and travellers, and for recreation uses.*
- *To have regard to residential use of adjoining land at the interface of the General Agriculture zone with other zones to avoid adverse effects on local amenities.*

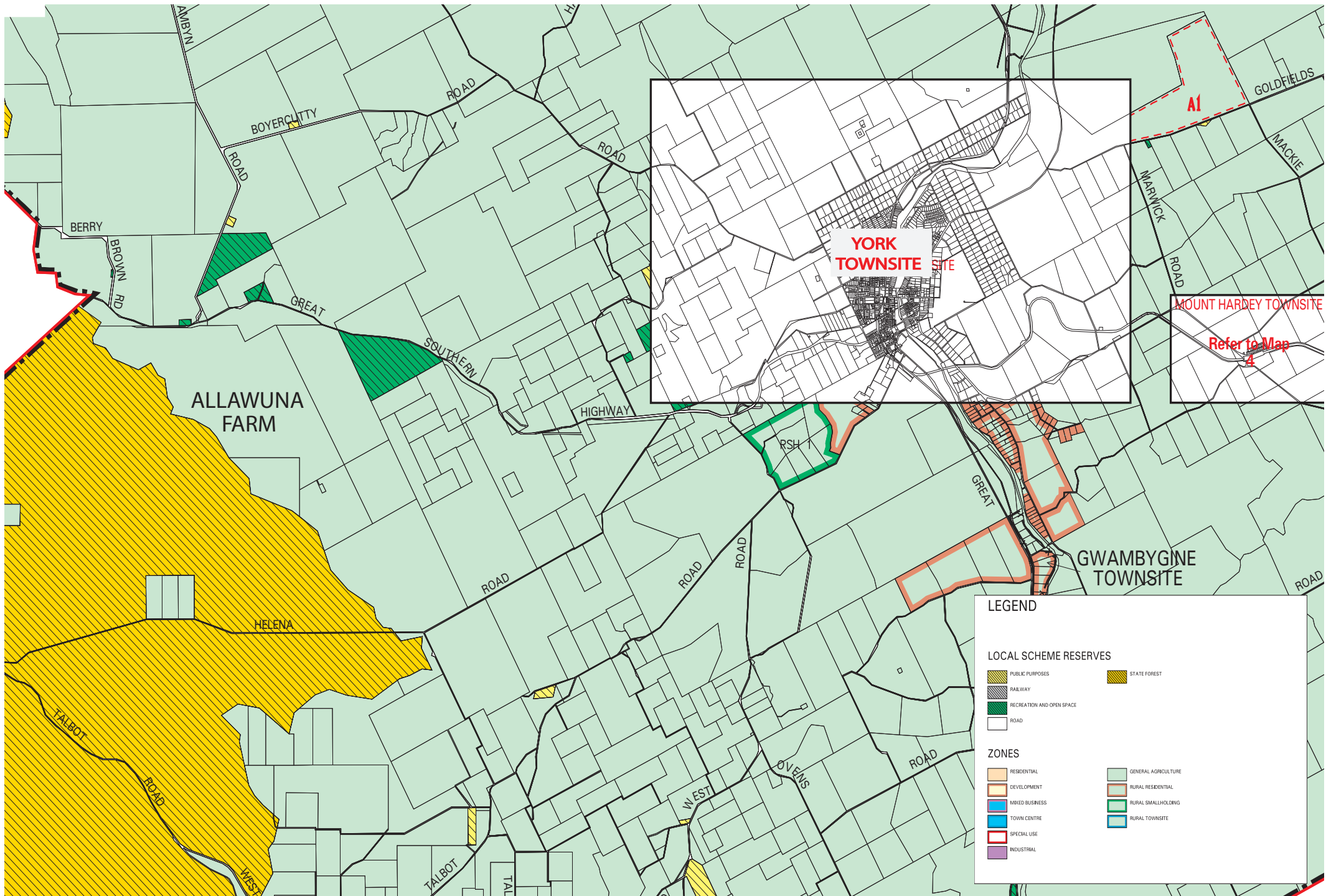
Allawuna does not impact the continuation of broad-hectare agriculture; and as a non-rural use, will generate significant local employment opportunities both directly and indirectly, including supporting businesses within the region through the purchase of operational goods and services.

The location and design of the proposed landfill will have minimal impact on the flora, fauna, surface water and groundwater of the local environment and modelling of the proposed landfill confirms that the significant on-site buffer together with the design and operational features of the landfill will result in minimal, if any, impact on the amenity of adjoining farms or local residents.

The use closest in form to waste disposal / landfill currently provided for under Table 1 is that of “Industry – Noxious” which is defined under the Scheme as:

“industry - noxious: means an industry which is subject to licensing as “Prescribed Premises” under the Environmental Protection Act, 1986 (as amended).”

Table 1 – Zoning Table identifies “Industry - Noxious” as an “SA” use within the General Agriculture Zone.



Source : Dept of Planning

ALLAWUNA FARM LANDFILL

Figure 3 : Scheme Map

An “SA” use under the Scheme has the following meaning:

“the use is not permitted unless the local government has exercised its discretion and has granted planning consent after giving special notice in accordance with Clause 7.2”.

Industry – Noxious represents a class of land uses that as a consequence of the nature of processes involved and / or the type of emissions produced, require licencing by the DER and include a range of industries from rural related industries such as abattoirs, paper and particle board production, tanneries and woolscouring to non-rural related industries such as chemical and pesticide manufacturing, brick and tile manufacturing, refineries and chemical plants; the latter two falling more correctly within the use class of Industry – Hazardous.

The Shire’s Town Planning Scheme contemplates and makes provision for a wide range of intensive agricultural and non-agricultural activities in the General Agriculture Zone, mostly with the need for a public comment period. The environmental and community issues and impacts associated with many potential uses equal or exceed those associated with the proposed landfill. Additionally, it is unlikely that the proposed landfill would have any more of a detrimental effect on the natural resources or the environment than a Piggery, Poultry Farm, Extractive Industry or most Noxious Industries, including Hazardous Industries.

Accordingly, it is reasonable to conclude that the proposed landfill is consistent with the range of non-agricultural land uses contemplated by the Scheme in the General Agriculture Zone.

Clause 4.15 of the Scheme sets out requirements for development within the General Agriculture Zone and Clause 4.15.2 provides that:

“Having regard to the scenic values of the district and the views from roads the local government may refuse an application for planning consent if, in the opinion of the local government, the development if approved will have a detrimental effect on the rural character and amenities.”

The Allawuna proposal complies with the provisions of Clause 4.15 and in respect of Clause 4.15.2 it is noted that the site of the landfill:

- Occupies only a small proportion of the overall farm – 52 ha out of farm area of 1516ha;
- Is well removed from Great Southern Highway;
- Is fully screened from the Great Southern Highway by both the intervening landform and remnant vegetation;
- Is fully screened from the nearest residence to the east and there are no residences to the south or west;
- Is fully screened from tourist viewing areas in the locality and particularly from Mt Observation;
- Additional traffic associated with the landfill is minimal in the context of existing vehicle numbers and vehicle types on Great Southern Highway;
- Operational procedures and practices will further minimise public awareness of the existence of the landfill;
- The location and design of the proposed landfill will have minimal impact on the natural resources of the local environment and modelling confirms that the significant on-site buffer together with

the design and operational features of the landfill will result in minimal, if any, impact on the amenity of adjoining farms or local;

- As a consequence, the proposed landfill will not impact public or community health in the local region of the landfill; and

therefore would not detrimentally affect the rural character or amenity of the area.

More importantly it would not have any more effect than an Extractive Industry and arguably less effect than a Piggery, Poultry Farm or Industry – Noxious or Hazardous.

Given the above, it is considered that the Allawuna Farm proposal is consistent with the objectives and purposes of the Scheme.

8. site environment

8.1 climate

The location is characterised by Mediterranean climate of hot, dry summers and cool, wet winters. The average annual rainfall recorded at York is 381mm, with the majority of precipitation occurring in winter.

8.2 geology

The site is classified as a dissected lateritic plateau. Granitic rock outcrops and fresh soils, with sandy and loamy gravel soils are prevalent across the site.

Many useful soil and geological resources are abundant on the site. Gravelly ridges and clayey depressions provide valuable construction materials for the future landfill. The typical lithology below the site is dominated by surface laterite gravels and deep white weathered granitic clays.

8.3 seismology

The area around Northam, from the Darling Scarp to Merredin is an area of notable seismic activity in Western Australia. The location of the landfill is to the south western edge of this zone of activity.

A search of the Geoscience Australia Earthquake Database (5/12/2012) showed no record of any earthquakes within 4 km of the site boundary, with the nearest being a magnitude 2.5 earthquake 4 km to the north east of the property. No earthquakes of magnitude greater than 3.8 have been detected within 20 km of the Allawuna site.

8.4 surface water

The Allawuna site is characterised by a dividing valley containing the 13 Mile Brook watercourse. The landfill is located 41.9 km upstream from the Spencers Brook/Avon River intersection.

A small seasonally dry creekline will be realigned 180 m to the south to facilitate the construction of the landfill and stormwater dam. The realigned channel will act as an overflow drainage channel for the stormwater dam.

Surface water is protected through safe design of infrastructure, appropriate location of development features, effective leachate management strategies and contingency planning.

8.5 surface water and groundwater interaction

The surface water and groundwater systems in the vicinity of the proposed landfill footprint are disconnected by the thick layer of surface clay that covers the area.

The 3.0 m of this surface clay formation that is to be maintained under the landfill footprint will act as a tertiary barrier, further protecting the groundwater should any damage or defect occur in the landfill lining system.

8.6 confined aquifer flow

The flow direction of the confined aquifer has been determined by direct measurement of the standing water levels in the monitoring bores.

The groundwater velocity between the bores is less than 0.01 m/day. At this flow rate it would take decades for any liquid entering the aquifer at the lowest point of the landfill to be detected adjacent to 13 Mile Brook.

8.7 water catchments

The site is not within a Prescribed Drinking Water Supply Area and is not within the Mundaring Weir Catchment Area. The catchment divide runs along the western boundary of the property, well to the west of the landfill footprint.

The investigations also show that the surface runoff and groundwater flow from the site do not interact with the drinking water catchment [Figure 4 : Surface Water Catchments].

8.8 flora

A comprehensive Level 2 flora investigation of the affected works areas was undertaken and found that the proposed development is likely to have minimal impact on the flora and fauna of the survey area and surrounds.

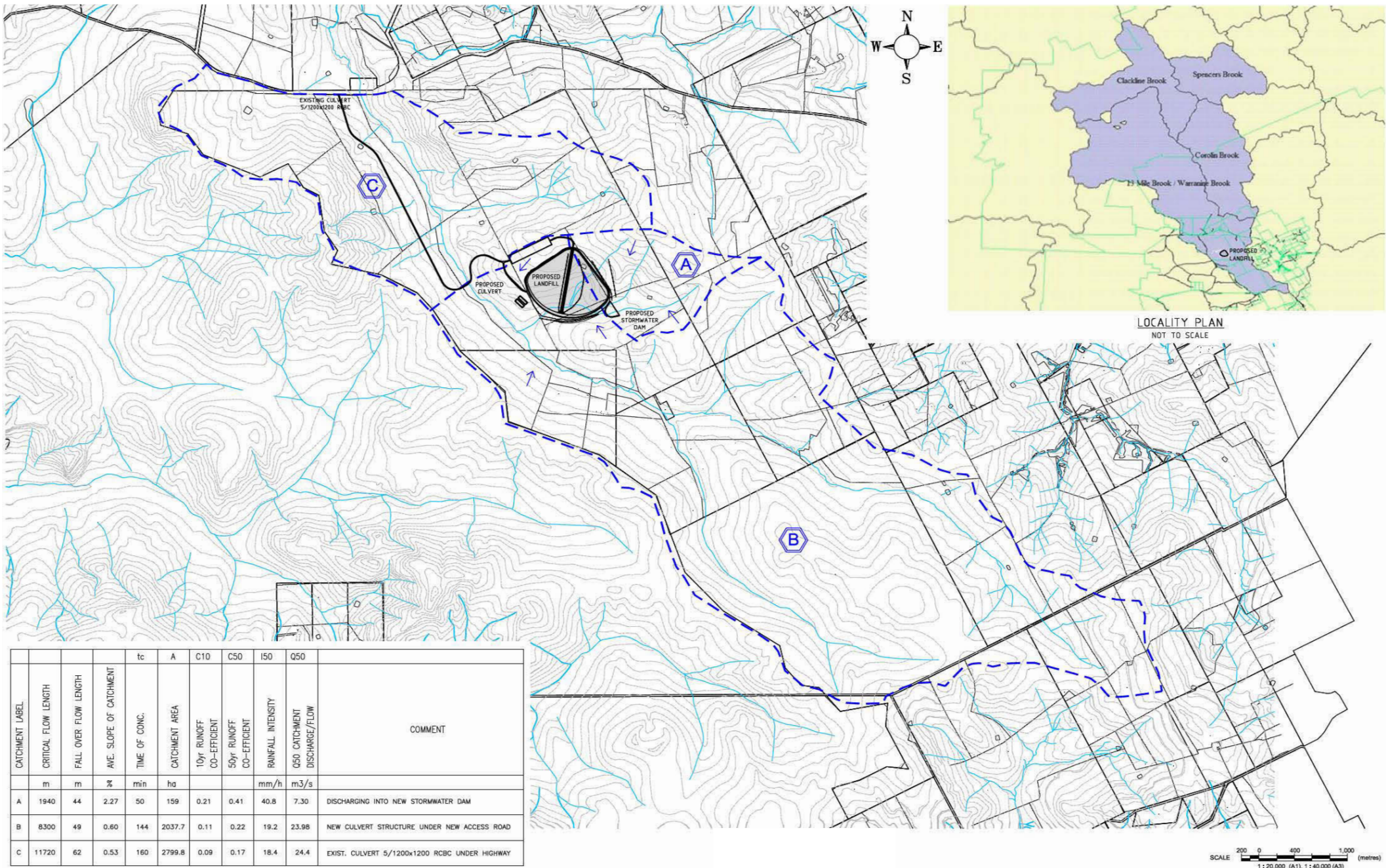
The landfill and support infrastructure has been specifically located to avoid clearing of any remnant bushland on the site. The scattered isolated Marri and Wandoo trees on the area have been carefully assessed and show no evidence of Black Cockatoo roosting or breeding. The scattered native vegetation of the footprint (4.16 ha) represents 0.009% of the total Black Cockatoo foraging habitat in the region.

8.9 fauna

A Level 1 fauna survey determined that both habitat types present in the landfill site are of low fauna habitat value. The survey identified minor evidence of Black Cockatoo foraging, no evidence of roosting or breeding and that the development will have no discernible impact on foraging availability or fauna amenity in the region.

8.10 aboriginal & european heritage

The site has previously been subject to extensive clearing and disturbance associated with sheep grazing and cereal production.



Source : Bowman & Assoc

ALLAWUNA FARM LANDFILL

Figure 4 : Surface Water Catchments

A review of the Aboriginal Heritage Inquiry System found no registered Aboriginal Sites or Heritage Places. Elders of the Local Indigenous Community indicated that the location of the landfill is not a place of significance for the local indigenous people.

There are no sites of European Heritage within the site.

8.11 potentially sensitive agriculture

A search was undertaken to determine if any farming practices in the vicinity of the Allawuna site may be especially sensitive to the establishment of a landfill.

Two properties in the vicinity of Allawuna have been identified in the Department of Agriculture and Food WA (DAFWA) sensitive sites database. One is listed as a Biodynamic site and the other as an organic site. The property boundary of the biodynamic site is 668 m from the Allawuna property boundary and 2,150 m from the proposed landfill footprint. The organic site is 1,280 m from the Allawuna property boundary and 1,975 m from the proposed landfill footprint. Given the very large buffer distances and proposed management strategies for potential emissions at the landfill site, the Allawuna development is expected to have no impact on the organic or biodynamic sites identified.

The land to the east is partially cleared for agricultural purposes with large pockets of remnant bushland in the southern and central western portions of the site. The majority of the cleared agricultural lands are located within the eastern and northern portions of that farm.

The Allawuna development will not impact agricultural activities on adjacent lands and cropping / grazing activities on Allawuna Farm will continue in parallel with the operation of the landfill.

9. proposed waste management facility

9.1 overview

The proposed Allawuna Landfill will incorporate a composite liner system to contain the leachate generated by the waste mass [Figure 5 –Landfill Site Plan].

It is estimated that the facility will have a nominal life of 37 years based on between 150,000 and 250,000 tonnes of waste per annum. The landfill will have a footprint of 52ha and will accommodate approximately 11.1 million cubic metres of waste, equating to some 10.1 million tonnes. The average depth of waste to be placed is 25m with a finished capped height of 327m AHD.

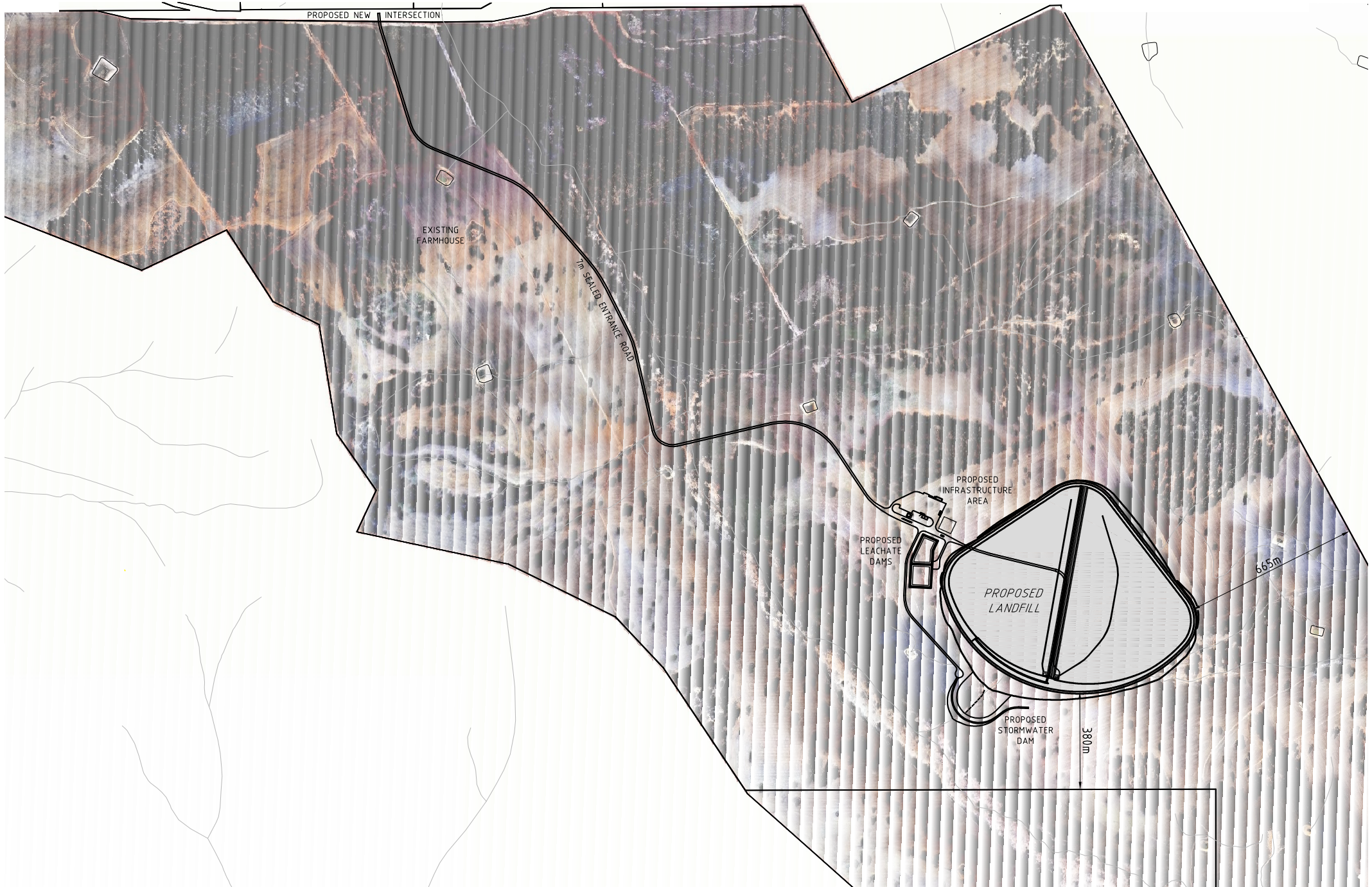
The landfill will be constructed as a series of cells, with each cell having an approximate 2 to 3 year filling life. The base of the landfill has been designed to maintain a minimum separation of 3 m from the depth of the confined groundwater.

The facility will operate from 6 am to 5 pm Monday to Friday and from 6 am to 4 pm on Saturdays.

9.2 waste type

Under DER requirements, Class II and III landfills which receive more than 20,000 tonnes of waste per annum are required to have a liner system.

Notwithstanding that the facility has been designed to Class II / III standards, Allawuna will accept only Class II waste being principally Municipal (Household) Solid Waste, waste from Commercial, Retail and Industrial premises and Construction Waste.



Source : Bowman & Assoc

ALLAWUNA FARM LANDFILL

Figure 5 : Landfill Site Plan

No hazardous, liquid, noxious or radioactive waste or toxic chemicals will be accepted at the facility and exclusion of the general public will ensure that waste types accepted will be strictly controlled.

9.3 waste acceptance

The majority of waste entering the site will originate from SITA's transfer stations. Waste from other commercial collectors operating in the York region, or local government collections may also be delivered to the Allawuna Landfill, subject to compliance with Class II waste acceptance criteria.

SITA waste will be transported by Restricted Access Vehicles (RAV) Class 2, Category 3 in a pocket road train configuration, with a maximum length of 27.5 m. A fleet of eight road trains will be required and the trailers will be unmarked and fully sealed to prevent escape of litter and liquids.

Random verification inspections of waste types delivered to the landfill will be performed. There will be waste isolation areas to hold any non-conforming waste and procedures will be implemented to deal with such wastes.

9.4 placement of waste

The waste will be placed by maintaining one active tipping area that is as small as possible. Emplaced waste will be completely covered at the end of each day. Waste will be placed in layers of not more than 2.0 m deep.

9.5 design & stability

The proposed facility consists of an engineered landfill comprising a series of individual cells. Each landfill cell will have an estimated two to three year lifespan [Figure 6 –Landfill Cell Layout].

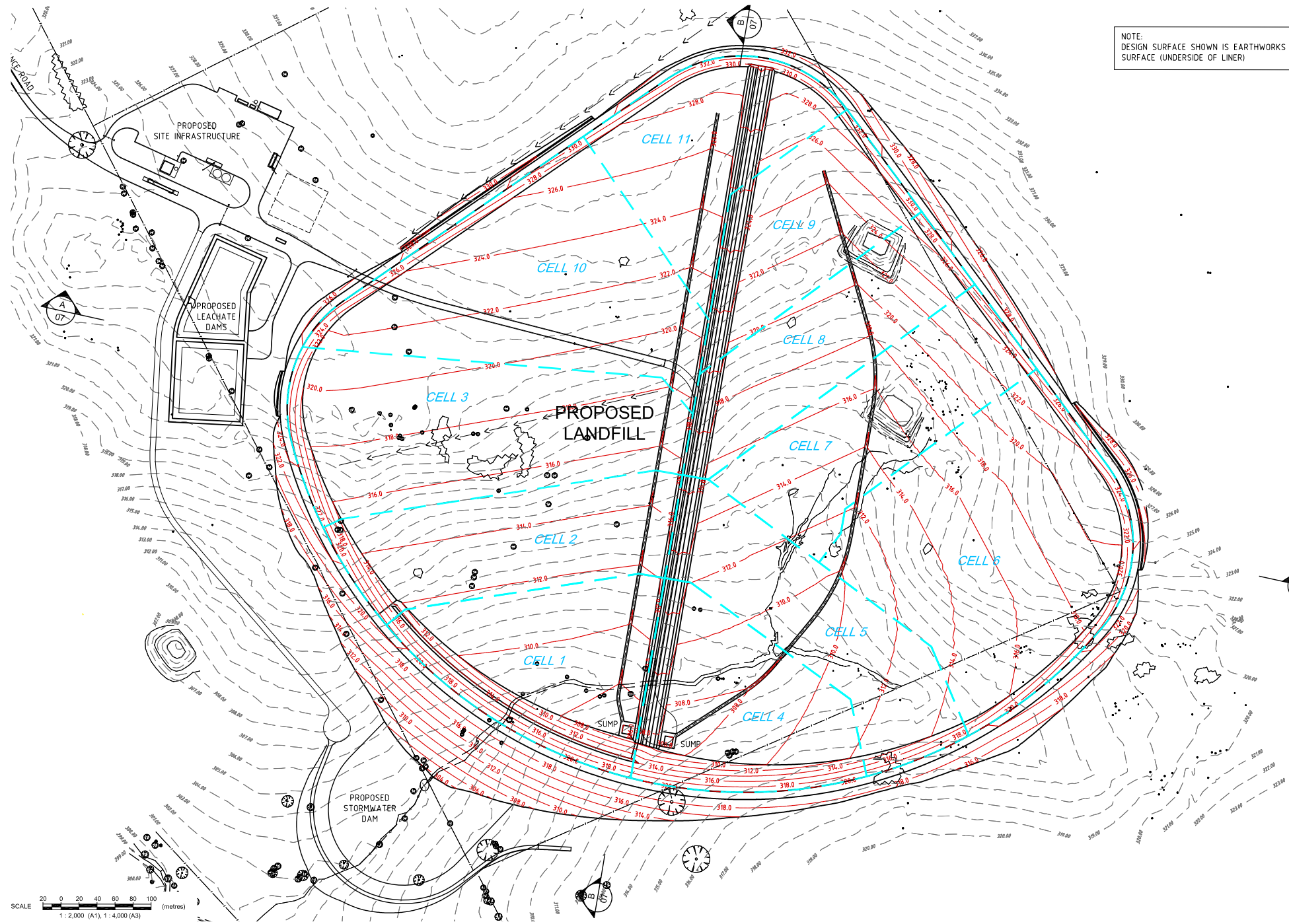
The stability of the landfill as it fills and as a completed final landform is an important consideration for environmental protection. Both circular slope and sliding block (shear) failure modes have been considered.

Modelling of the design surfaces of the proposed landfill indicate that the design well exceeds a minimum Factor of Safety of 1.5.

9.6 landfill liner

The liner is a composite environmental barrier system that protects the surrounding environment from the impacts of leachate and landfill gas migration. The liner will maintain a minimum 3m clearance to the underlying groundwater. The main engineering components of the proposed liner configuration will include a Geosynthetic Clay Liner (GCL) over the base of the landfill cells and on the side slopes; a 2.0 mm thick High Density Polyethylene (HDPE) membrane liner directly above the GCL; a non-woven geotextile cushion layer will be placed on top of the HDPE liner to serve as a protective layer and an aggregate drainage layer with embedded leachate collection pipes.

It is expected that the HDPE liner to be utilised at Allawuna will have a life of at least 100 years, during which time the waste will decompose completely. The waste composition itself will not degrade the liner.



Source : Bowman & Assoc

ALLAWUNA FARM LANDFILL

Figure 6 : Landfill Cell Layout

9.7 leachate management

Landfill leachate is a liquid generated within landfills as the result of the physical and biological decomposition of the deposited waste. Effective management of leachate is essential to protect the surrounding environment, especially surface waters and groundwater.

Each cell will be shaped to facilitate free draining of the floor for leachate collection from a sump area. The leachate will be collected and pumped back into the landfill to allow faster decomposition of waste. If the quantity of leachate produced is in excess of the recirculation requirement then it will be collected in a leachate dam for future recirculation or be allowed to evaporate.

Leachate levels within the landfill will be controlled by regular monitoring.

9.8 leachate dam

The leachate dam must be large enough to contain two consecutive wet (90th percentile) years of rainfall generated leachate.

The leachate dam design will consist of two 3,000 m² leachate retention and evaporation dams. The construction of two dams enables one to be kept in reserve.

If the leachate dams are filling above the design operational freeboard, leachate will either be recirculated into the waste mass or transported off site in a tanker for disposal by an appropriately licensed contractor.

The leachate dams will have the same composite lining system as the landfill of GCL and HDPE geomembrane above a low permeability subgrade.

9.9 groundwater monitoring system

A groundwater quality baseline dataset has been established by 6 monthly sampling of a series of bores on the site since August 2012.

A groundwater monitoring program will be established and implemented to identify any changes in groundwater quality as a result of site operations.

The groundwater on the site is protected by a thick confining clay layer. Surface water and groundwater interaction at the site is expected to be minimal. Regardless, a regular bore sampling and testing program, coupled with a detailed response plan for evidence of contamination will be included in the water management strategy for the site.

Groundwater monitoring will be undertaken periodically, as specified in the facility licence and results provided to the DER and Department of Water. Landfill leachate will also be tested for composition.

In the unlikely event that groundwater monitoring indicates landfill contaminants in the groundwater, this will be reported to the DER immediately and a contingency plan will be implemented to ensure any contamination is dealt with quickly and efficiently.

9.10 surface water management

The surface water drainage is designed to prevent the interaction of stormwater and leachate. Clean runoff is diverted around the landfill footprint to minimise the total volume of leachate that requires management.

The stormwater dam is designed to capture surface runoff from the small catchment to the east of the landfill footprint. The Stormwater dam will have an overflow channel capable of carrying a peak 1 in 50 year storm discharge of 7.30 m³/s into 13 Mile Brook.

9.11 landfill gas & carbon emissions

Landfill gas (LFG) is composed of a variety of gases which include methane, carbon dioxide, oxygen, nitrogen, hydrogen and water vapour.

Collection of landfill gas minimises emissions, prevents gas migration off site, facilitates the use of the recovered gas and greatly increases landfill site safety.

During the initial phase of operation a flaring facility may be utilised to control the landfill gas extracted. Once the volume of landfill gas generated in the decomposing waste mass increases to a sufficient quality and quantity an energy recovery facility may be used to generate electricity.

9.12 site security

A 1.8m high mesh, security fence with barbed wire will be erected around the perimeter of the landfill operations area to prevent unauthorised site access, capture windblown litter and prevent access by stock animals or kangaroos.

All trucks/vehicles entering the site to deposit waste will be stopped at the weighbridge.

The fence will have fire emergency access gates at appropriate locations along its perimeter. These gates will be locked securely outside of operating hours, with a key provided to the local fire authority.

9.13 services and utilities

The site is supplied with electric power and telecommunications. Water will be sourced from a dam developed adjacent to the landfill site. Sewerage and grey water will be directed to an on-site storage tank and leach drain system.

9.14 staging of construction

The construction of the landfill facility will be a staged. This will allow the progressive use of the landfill areas so that construction, operation, capping and leachate recirculation can occur simultaneously in different stages of the site.

The landfill is divided into eleven cells, each with an expected life of two to three years [Figure 6 –Landfill Cell Layout]. The initial construction works at the facility will include establishing site infrastructure (site access roads office, weighbridge, parking, etc.), bulk earthworks, leachate dams and the construction of Cell 1. Subsequent cells will be constructed as required.

The timing of construction of subsequent cells will be dependent on the volumes of waste received.

9.15 capping, landscaping and aftercare

As the cells of the landfill fill with waste to their final design levels, they will be progressively capped to seal in landfill gas and prevent the infiltration of stormwater.

The landfill cap provides long-term protection of the groundwater environment. The cap will meet the DER design requirements. The topography of the landfill cap will blend into the surrounding landscape.

The finished and capped landfill surface will be progressively rehabilitated to become suitable for post closure land use. It is envisaged that the site will require post-closure management for an extended period and typically in the range of 15-25 years. The site will remain in SITA's ownership until monitoring confirms that the site is deemed stable and non-polluting and a certificate of completion is issued by the DER.

10. environmental impacts

The proposed landfill was referred to the EPA under Part IV of the EP Act in March 2013.

In July 2013 the EPA advised the proponent that it considered that the environmental impacts of the proposed landfill were not so significant as to require EPA assessment of the proposal.

The EPA considered that the potential environmental impacts can be regulated and managed effectively under Part V of the EP Act, by the DER through the works approval; environmental licence and clearing permit processes.

The EPA's decision is currently under appeal.

10.1 *buffer requirements*

DER Guidelines recommend a buffer of 150m to a single rural dwelling and 500m between residential development and Class II landfills.

Allawuna achieves a 600m buffer within the site boundaries. The closest single dwelling to the landfill footprint is 1.9km to the north-east of the landfill and well screened from the landfill by the landform and intervening remnant bushland. The next closest residence is located 2.4 km from the proposed landfill footprint.

The buffer distances achieved are well in excess of DER recommendations for a Class II landfill and will minimise the impacts of the landfill on surrounding residents.

10.2 *flora & fauna*

The landfill site occupies 52 ha and is currently cleared and under crop. The landfill has been specifically located to avoid clearing of any remnant bushland on the site. The scattered isolated Marri and Wandoo trees on the area have been carefully assessed and show no evidence of Black Cockatoo roosting or breeding.

The Federal Department of Sustainability, Environment, Water, Population and Communities (DSEWPac) decided in August 2013 that the proposed clearing did not constitute a Controlled Action under the EPBC Act and did not require their assessment, confirming that they did not consider the proposed clearing will or be likely to have a significant impact on matters of national environmental significance (including Black Cockatoos).

The proposed landfill will have a minimal impact on flora and fauna within the region.

10.3 *dust & particulates*

The site is within a valley and is 1.9km from the nearest dwelling to the north-east.

In order to limit the potential for dust generation at the site, various measures will be adopted including covering of all vehicles, use of water for dust suppression on unsealed roads or exposed stockpiles when necessary.

Given the distance to the nearest dwelling, the intervening landform and remnant vegetation and the measures to be employed to limit dust, it is considered that dust and particulates will not present a health risk or nuisance.

10.4 odour

The landfill site is located 1.9km from the nearest dwelling which combined with the intervening landform and vegetation provides a considerable buffer minimising the risk of odour impacting the amenity of surrounding residents.

Detailed odour modelling for the proposed landfill was undertaken. The DER's criterion for acceptable odour impacts is 2.5ou (Odour Units) sustained over a one hour period. The model also calculated odour concentrations based on a more stringent short term criteria of 2ou and 4ou.

The investigation found that for the proposed operational times, procedures and waste volumes, all odour generated would be maintained well within the site boundary [Figure 7 – Predicted Odour Concentrations].

The EPA has concluded that a well-managed landfill is unlikely to cause odour impacts at the buffer distance achieved at Allawuna and detailed modelling has confirmed that all threshold odour levels are contained well within the property boundary. Accordingly, it is considered that odour emissions will not impact surrounding residents.

10.5 noise

The *Environmental Protection (Noise) Regulations 1997* stipulate the allowable noise levels that can be received at any noise sensitive premises as a result of activities occurring on another premise.

A comprehensive noise assessment was performed for both the construction and operational phases.

The noise investigation found that predicted noise levels at the nearest sensitive receivers were within the guideline limits for times of day during both the construction and operational phases of the landfill development.

To ensure that there is no loss of amenity to the surrounding properties due to noise from the landfill site, noise management procedures and technologies will be employed at the site.

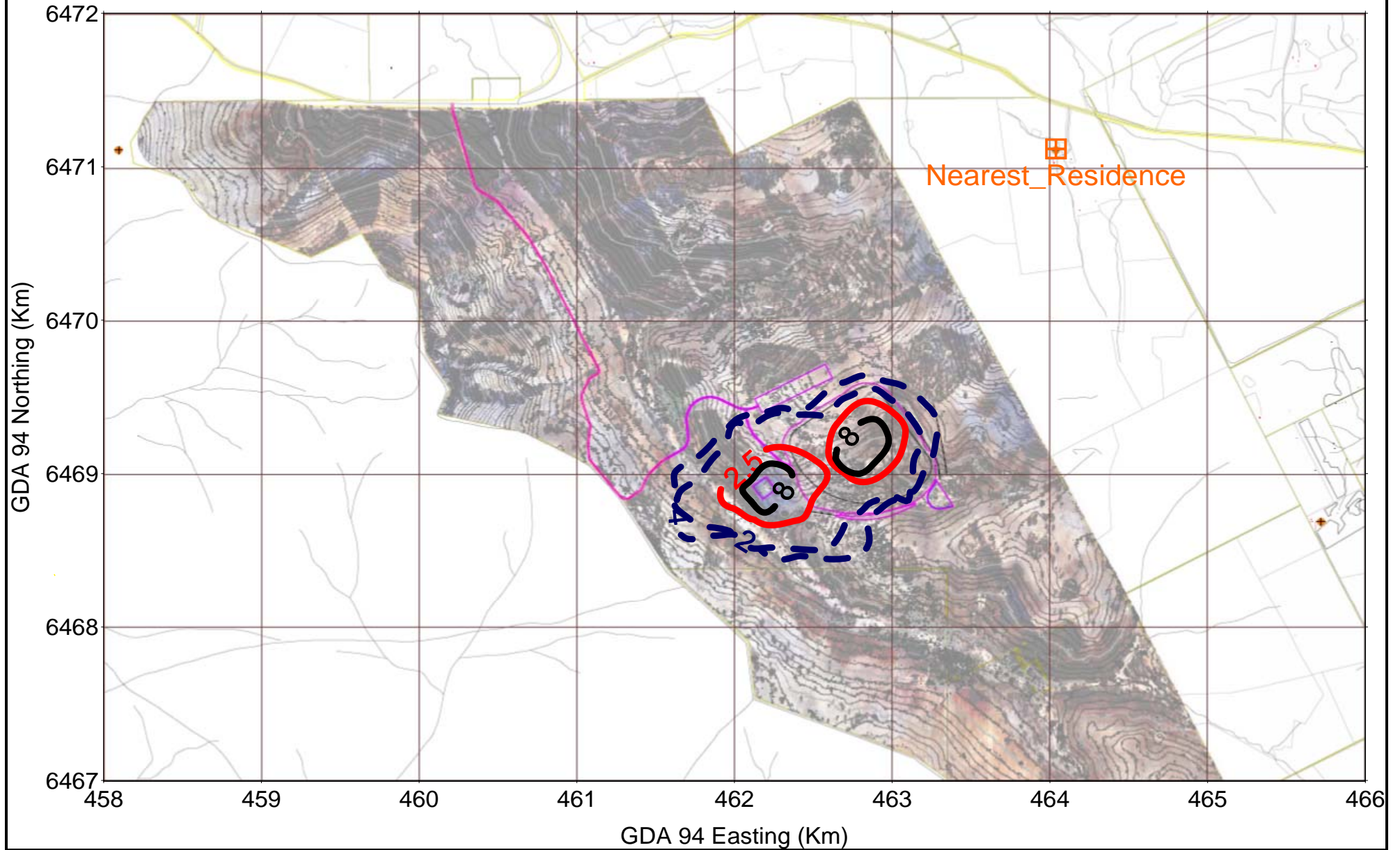
It is considered that acoustical treatment measures incorporated during construction and operation together with the distance to the nearest sensitive premises will minimise the impact of noise levels to acceptable limits or below.

10.6 landfill gas emissions

The decomposition of putrescible waste in an anaerobic environment produces landfill gas. The gas is a combination of methane and carbon dioxide. Both gasses pose an environmental risk as they contribute to the greenhouse effect.

Landfill gas will be collected and flared to convert the methane into the less harmful carbon dioxide. When a sufficient quantity and quality of landfill gas is being produced the gas may be used as fuel for electricity generation.

Predicted odour concentrations from proposed Allawuna landfill (ou)



Source : Environmental Alliances Pty Ltd

——— 2.5ou one hour
 2ou & 4ou three minute average

It is considered that with the design and management procedures proposed, landfill gas emissions can be appropriately managed and contained.

10.7 litter

The design, construction and operation of the landfill seek to ensure that no litter reaches beyond the boundary of the landfill or property.

The landfill will be designed and operated to minimise the potential for litter and particularly lightweight, windblown litter (paper, plastic bags, etc) including by use of enclosed and sealed trailers to transport waste, construction of a 1.8m high fencing around the site perimeter and regular litter patrols around the active cell fence and site fence to collect any windblown litter

It is considered that these measures will contain windblown litter during normal operating conditions. It may be necessary on particularly windy days to suspend operations for a short period.

10.8 groundwater & surface water quality

Leachate generated by the decomposing waste is the most mobile form of pollution that may be generated by landfilling activities. Control of leachate on the site is considered to be of paramount importance to the daily operations of the landfill.

Clean surface runoff from rainfall events is directed into either the stormwater dam or the existing 13 Mile Brook watercourse.

The groundwater on the site is protected by a thick confining clay layer. Surface water and groundwater interaction at the site is expected to be minimal.

Leachate on the site is managed through a hierarchy of minimising generation, effective capture and storage and removal.

The leachate dams have been designed to contain two consecutive wet (1 in 10) years of rain generated leachate and direct rainfall, while still maintaining a surge capacity for a 1 in 100 year 24 hour storm event. If the leachate dams are filling close to the design operational freeboard, leachate will either be recirculated into the waste mass or transported off site in a tanker for disposal by an appropriately licensed contractor.

The Department of Water has advised the EPA that the proposal should have a low impact on groundwater and surface water resources over its operational life and beyond. Accordingly, it is considered that the measures proposed will minimise the potential for unacceptable impacts on groundwater and surface water.

10.9 fire

A comprehensive Fire Management Plan will be developed in consultation with the Department of Fire and Emergency Services (DFES) and the local Fire Brigade to minimise the risk of fire.

The plan will aim to optimise the prevention of fire in the first instance and fire response for public safety and minimisation of related damage to the facility.

The operational measures to be developed in the Fire Management Plan will minimise the risk of fire.

10.10 *visual & landscape*

Allawuna Farm is situated on the south side of Great Southern Highway, 20km west of the York Townsite and immediately east of the Wandoo National Park which at its northern extremity includes the Mt Observation Picnic and Tourist stop.

The property is effectively at the western gateway to the York region and Great Southern Highway is the primary access route to York for residents, tourists and commercial traffic.

The landfill site is fully screened from the Highway by the intervening landform and vegetation.

Portable floodlighting may be used at the tipping face during heavily overcast winter days. However, as the landfill will only operate during business hours intermittent use of floodlighting will not impact on the ambient night sky for Highway traffic or surrounding neighbours.

Mt Observation, a tourist and picnic destination lies approximately 4.6km to the north west of the landfill site, adjoining the northern most paddock of Allawuna Farm. The prime tourist locations are the two picnic areas which face westward and southwards overlooking the National Park. Neither Allawuna Farm, nor the landfill site, is visible from these picnic areas as a consequence of the intervening landform and vegetation.

The exit portion of the loop provides views over the northern paddock of the Farm and longer range views. While Mt Observation is higher than the finished level of the landfill, the landfill site is screened from this location by intervening vegetation. Even if the site was visible from this location, it would comprise a very small proportion of the viewscape and given the distance, is unlikely to be readily discernible.

A public road – Catchment Road – broadly parallels the western boundary of Allawuna Farm. It would appear that it is used primarily for fire access as well as by beekeepers and residents harvesting firewood from the National Park. The track does not lead to any significant point of interest, is not signposted, nor is the entry to it obvious. It is unlikely to be used by many tourists. For significant portions of the track, the Farm and hence the landfill site is obscured by either the intervening landform or vegetation or both. It would be necessary to travel a considerable distance south along the track prior to reaching a point where the landfill site would be visible.

Given the above, the visual and landscape value of the location are not impacted by the proposed landfill as a consequence of its isolation and the topography and vegetation of the surrounding landscape which screens the site from all locations of social or tourist importance.

10.11 *fuel and chemical management*

Chemicals and fuels used for landfill operations will be stored appropriately to minimise the risk of impact on the environment. The storage and handling of chemicals and fuels will be in accordance with the *Dangerous Goods Safety (Storage and Handling of Non-explosives) Regulations 2007* and Australian Standard AS 1940 *The storage and handling of flammable and combustible liquids*.

The operational measures proposed will minimise the risk of contamination of the environment from fuels and chemicals stored on-site for operational requirements.

10.12 *dieback and weed management*

Dieback is of concern on the Darling Plateau due to perched water sitting above the laterite caprock. A Dieback and Weed Management Strategy will be developed and implemented at the site.

10.13 contingency planning

A suite of contingency plans will be developed for the landfill to ensure all reasonably conceivable incidents that have the potential to harm human health or the surrounding environment are considered.

11. community and social impacts

11.1 traffic

The development of the Allawuna Landfill will generate pocket road train vehicle movements between SITA's waste transfer stations at Kurnall Road, Welshpool and Atwell Street, Lansdale and the landfill site.

The transfer road trains will be Restricted Access Vehicles (RAV) Class 2, Category 3 in a pocket road train configuration, with a maximum length of 27.5 m. The trailers will be unmarked and fully sealed to prevent escape of litter and liquids. A fleet of eight pocket road trains will be required.

It is proposed that the waste transport operations be outsourced. The truck fleet will therefore be based either in the York region or Perth metropolitan region.

The intersection of the site access road and Great Southern Highway will be upgraded to the requirements of MRWA to provide a passing lane on the north side for through traffic as well as an acceleration lane on the south side for road trains exiting the site.

A detailed traffic impact assessment was undertaken by Shawmac Traffic Engineers [Appendix 1 : Allawuna Farm Landfill : Capacity, Capacity, Crash and Safety Assessment – Shawmac November, 2013].

The purpose of the traffic assessment is to assess the impacts of additional road trains on the Great Southern Highway (GSH) between Great Eastern Highway (GEH) and the Allawuna Landfill access on the safety of other road users and the surrounding community in terms of:

- Level of Service (LoS) and Road Capacity;
- Road Crashes;
- Road Safety; and
- Truck Cycle Times;

in the context of the following scenarios:

- Pre-Allawuna as the base case (2013); and
- Post-Allawuna (2014 onwards).

The objective of the roadway capacity study is to assess the impact the additional Allawuna Landfill RAV's will have on the Level of Service and capacity of the GSH which carries 2,264 vehicles per day between GEH and the BGC Quarry and 1,357 vehicles per day between the BGC Quarry and the Allawuna Farm entry.

LoS is a quantitative stratification of quality of service into six letter grades. Six levels of service are defined for the analysis. They are given letter designation A through to F, with LoS A representing the best range of operating conditions and LoS F the worst.

The existing GSH (pre-Allawuna) currently performs at a LoS “B” and will continue to operate at a LoS “B” post-Allawuna. These values are below the threshold of LoS “D” where improvements would be necessary to improve the LoS. A LoS of “B” describes reasonable free-flow operations.

The objective of the crash analysis study is to assess the impact the additional Allawuna Landfill RAV’s will have on the crash profile of the GSH, pre and post- Allawuna.

Existing crash data was sourced from the MRWA website and shows a total of 47 accidents in the five years to 2012 of which only seven accidents involved two or more vehicles; the balance being vehicles hitting animals, other objects or unknown cause.

Comparison of the risk and probability of each crash type occurring pre and post-Allawuna was calculated based on the accident history.

Criteria for acceptance of risk is based partly on the level of risk already present in the community, and partly on community expectations for the particular case. It is usual in assessing whether or not a risk is acceptable or warrants the implementation of controls to reduce either the likelihood of the event occurring or the consequences should the event occur, to draw comparison to risks that the community accepts.

Criteria for determining acceptable societal risk for fatalities are based on the event probability per year and the number of fatalities per event. A risk matrix was developed in the Netherlands and is an internationally recognised measure of acceptable and unacceptable societal risk and has been adopted for the assessment of acceptable and unacceptable societal risk of fatalities on the GSH pre and post-Allawuna.

The risk matrices demonstrate that the increase in traffic resulting from the Allawuna Farm Landfill will increase the risk of a fatality within each crash type only marginally and that the increased risk is still within the acceptable societal risk for fatalities.

The road safety audit considered the GSH in relation to constructed form, sight distances, roadside hazard and general road safety in an objective manner. The intent of the audit is to also review the safety of the road environment under current operating conditions and under a possible future scenario with an increase in road train traffic.

The audit concluded that the likelihood of risk associated with the identified hazards will increase marginally with an increase in traffic flow on GSH between GEH and the turnoff to the proposed waste facility. However, the risk profile would likely remain the same with the increased traffic flows, and as such it is considered that the response recommended by the audit is appropriate to satisfactorily manage risks under both traffic flow scenarios, and will remain the responsibility of the asset owner.

11.2 public health & vermin control

Disease vectors and vermin emanating from the landfill can pose a risk to public and environmental health. The disease vectors for a landfill site include flies, mosquitoes, mice, rats, cats, foxes and birds.

The four potential routes for infection are contaminated surface water, contaminated groundwater; airborne emissions and pests – insect or animal.

The risk of 13 Mile Brook being contaminated by leachate is low given the leachate management system proposed. Further, the Brook is seasonally dry, not used for drinking supplies and unlikely to be used for swimming.

The risk of groundwater contamination is low given the depth to groundwater, the clay layer siting above the groundwater and the composite landfill liner system. Additionally, the groundwater is limited and mostly saline and not used for human consumption and unlikely to be used for stock watering.

The landfill maintains a buffer within the site of 600m, considerably in excess of DER requirements and the nearest residence is 1.9km to the north-east.

By denying pests food and shelter the risk of harm to humans in the locality can be minimised. Management measures will be implemented including covering waste at the end of every day, highly odorous or decayed waste will be buried promptly and bird control measures such as anti-perch strips on buildings, acoustic bird scaring devices and other techniques will be implemented as required.

Given the above it is considered that the proposed landfill would present little or no risk to public health in the locality.

11.3 economic

The 2011 Census data indicates a total population for the Shire of York of 3,400 persons, an increase of approximately 300 persons since 2006. The total labour force within the Shire at 2011 was 1535 persons.

Agriculture is the largest employer within the region at approximately 17% followed by Retail (11%), Health and Social Care (10%) and Construction and Education and Training accounting for 7.5% each. Tourist Services (Accommodation and Food Services) employs 6% of the labour force (90 persons).

Allawuna will provide local employment opportunities during the operational and construction stages, both directly on-site and indirectly through the flow-on effects of sourcing of labour, plant and materials locally.

SITA is strongly committed to ensuring as far as practical, that labour, plant and materials are sourced from the broader York region.

Cumulatively, the operation of the landfill, including waste haulage drivers, will require 25.5 Full Time Equivalents (FTE) / persons, for which all positions could be filled locally.

The annual operating cost of the facility, including waste haulage, is estimated at approximately \$6.7 million. All materials and consumables required for the operation of the landfill are potentially able to be sourced locally.

Input / Output Multipliers for Western Australia prepared by the Economics Department of the University of WA indicate the potential for significant economic benefits for the broader York region and specifically:

- Up to 25.5 new local full time positions at the landfill and within the waste haulage operation;
- \$4.3 million in new direct expenditure with businesses and services in the region;
- A further 65.3 fulltime positions created as a consequence of the positions created by Allawuna in occupations such as trades, retail, education, administration and food services; and
- An additional \$9.6 million in expenditure by businesses and services in the region.

Significantly, the potential employment opportunities generated by Allawuna in the York region, both directly and in-directly, parallels current employment within the tourist services industries within York.

The estimated total construction cost of "Stage 1" of the facility is approximately \$8million of which it is estimated that \$4.2million in labour, plant and materials is potentially sourceable within the York region.

Clearly, the flow-on effects from the operation of the proposed facility and the construction of Stage 1 and subsequent cells will provide a significant impetus to the local and regional economy. Allawuna will encourage the development and diversification of businesses that will strengthen and broaden the economic base of the York region and provide significant employment opportunities for the community.

11.4 tourism

The proximity of York to the Perth Metropolitan Area together with its rural setting and built heritage has resulted in York becoming a significant tourist destination. As a consequence, tourism is an important contributor to the local economy both for day trips and extended stays.

No data is available on the economic contribution of tourism to the York economy, other than employment data from the 2011 Census which identifies approximately 90 people employed within tourism related industries.

The existence of a landfill may impact on tourism as a consequence of any or combination of the following factors:

- Allawuna is located effectively at the western end of the Shire which is the principal tourist gateway to the York townsite and region. It is important therefore that neither the site nor heavy vehicles hauling waste to the landfill indicate the presence of a landfill;
- Allawuna lies to the immediate east of Mt Observation, a tourist viewing and picnic area at the entry to the primary York rural area;
- Roadside litter and liquid emanating from waste haulage vehicles along Great Southern Highway; and
- Odour from the landfill impacting on Great Southern Highway or Mt Observation.

The landfill site is fully screened from Great Southern Highway by the intervening landform and vegetation. The landfill will only operate during business hours eliminating the impact of floodlighting on the ambient night sky on Highway traffic. There will be no signage at the entry to the Allawuna Farm property indicating the presence of the landfill and waste haulage trucks accessing the site will be unmarked and cleaned regularly.

Mt Observation rises to approximately 359m AHD. The prime tourist locations are the two picnic areas. The primary picnic area faces westward towards Perth, overlooking the National Park. A secondary smaller picnic area is situated on the southern slopes of Mt Observation likewise overlooking the National Park. Neither Allawuna Farm, least of all the landfill site, is visible from these picnic areas as a consequence of the intervening landform and vegetation. The exit portion of the loop provides an opportunity for views over the northern paddock of the Farm and longer range views. The landfill site is screened from this location by intervening vegetation.

A public road – Catchment Road – broadly parallels the western boundary of Allawuna Farm. It is a narrow gravel track of varying condition and would appear used primarily for fire access as well as by beekeepers and residents harvesting firewood from the National Park. The track does not lead to any significant point of interest, is not signposted, nor is the entry to it obvious. It is unlikely to be used by many tourists. For significant portions of the track, the Farm and hence the landfill site is obscured by either the intervening landform or vegetation or both. Catchment Road is clearly not significant in the context of the potential landscape and visual impacts of the proposed landfill.

Waste haulage trucks servicing the site will be fully enclosed and sealed eliminating the escape of litter or liquids along Great Southern Highway. The risk of litter and liquids impacting the Highway is therefore minimal.

The landfill maintains a 600m buffer wholly within the property boundary. Odour modelling of the landfill has demonstrated that the accepted odour limit where the presence of the landfill would be noticed is contained well within the property and would not impact the Highway or Mt Observation.

Given the above, it is considered that the landfill will have no impact on the tourism to York, notwithstanding the location of the landfill at the western gateway to the region.

Additionally, it could be reasonably expected that the potential direct and in-direct economic benefits of Allawuna would result in improved services within the York region, at least some of which could be expected to be of value to tourists and visitors to the region.

11.5 construction

Construction of the landfill will create short term impacts from construction vehicles travelling to and from the site and the possibility of some machinery noise. No blasting is anticipated.

Appropriate construction management practices will minimise disturbance to the locality as far as possible. Additionally, contractors will be required to comply with all relevant requirements including Noise and Dust management which minimise construction impacts.

11.6 amenity & quality of life for residents & visitors

The Allawuna Landfill is located approximately 20km west of the York Townsite. All SITA waste trucks to and from the landfill will access the site via Great Eastern Highway and Great Southern Highway.

The position of the landfill west of the Townsite combined with the separation between the landfill and York will ensure that there are no direct impacts from the facility on residents of the Townsite or those between the landfill and the Townsite. Further, the lands to the west of the site to Great Eastern Highway are, for the most part, bushland. The additional heavy vehicle traffic associated with the landfill is unlikely to be particularly noticeable in the context of existing vehicle numbers and vehicle size using this portion of Great Southern Highway.

The proposed landfill and associated infrastructure occupy only a small portion of the Allawuna Farm property and therefore will have a very minimal impact on the continuation of existing cropping operations on Allawuna Farm. As a consequence of the significant on-site buffers achieved, the design of the landfill and proposed operational practices; the proposed landfill will not impact the continuation of broad-hectare agriculture on adjoining farms or other farms in the locality; nor will it impact organic / sensitive agricultural activities in the locality.

The closest residents to the facility are approximately 1.9km to the North-East. The landfill achieves a buffer of 600m to the property boundary which is significantly in excess of the Class II landfills buffer recommendations of the DER. The landfill is fully screened from the nearest residence to the east and there are no residences to the south or west.

Modelling of the proposed landfill confirms that the significant on-site buffer together with the design and operational features of the landfill will result in minimal, if any, impact on the amenity of adjoining farms or local residents as a consequence of dust, noise, odour or other emissions. Accordingly, it is unlikely that the facility will impact in any way on the residents closest to the site and, as a consequence, other residents in the immediate locality

The location and design of the proposed landfill will have minimal impact on the flora and fauna of the locality. Groundwater and surface water investigations confirm that there is little likelihood of threat to either. Further, neither resource is used for human consumption nor it is likely that the groundwater resource is used for stock watering given the salinity and limited volume.

Given the buffers achieved and landfill management measures proposed it is unlikely that the proposed landfill would present any risk to public health in the locality as the pathways necessary for the communication of disease risk do not exist and vermin will be strictly managed.

The site of the landfill is well removed from Great Southern Highway and is fully screened from the Highway by both the intervening landform and remnant vegetation. It is also fully screened from tourist viewing areas in the locality and particularly from Mt Observation. Additional traffic associated with the landfill is unlikely to be particularly noticeable in the context of existing vehicle numbers and vehicle size on Great Southern Highway and operational procedures and practices will further minimise public awareness of the presence of the landfill. Accordingly, the landfill will not impact tourism to the locality or region and will not impact enjoyment of the visitor experience to York.

The site is located on the primary western route to York which is also an important tourist route. The isolation of the site will not impact the Highway or residents and tourists using the Highway. A comprehensive traffic impact assessment has demonstrated that the additional heavy vehicles will have little impact on the level of service on Great Southern Highway.

More importantly, it is clear that the eight pocket road trains proposed to service the landfill can complete three round trips per day comfortably and safely and without posing any significant increased risk to other road users. Accident risk analysis confirms that the increased risk arising from SITA heavy vehicles is minimal and well within generally accepted risk criteria.

Allawuna Landfill will generate significant local employment opportunities both directly, through the employment of on-site staff and waste truck drivers, and indirectly through the engagement of local trades and services required for the on-going operation of the landfill. Similarly, the on-going operational needs of the landfill including fuel, hardware, plant hire, office supplies and other consumables will provide a significant boost to local businesses.

It is evident that the proposed Allawuna Farm Landfill will not impact the amenity and quality of life of residents of and visitors to the Shire and surrounding districts. Further, it is conceivable that the potential economic benefits of Allawuna would result, in time, in an improvement of services and facilities within the York region, to the mutual benefit of both residents and visitors.

12. community consultation

SITA undertook a comprehensive program of face to face meetings, public presentation, information mail out, website advertisement, public display, newspaper editorials and a site tour was conducted as part of the development of the referral to the EPA under Part IV of the EP Act.

During the week of the 5th to the 9th November 2012 SITA sent a one page, double sided, unaddressed mail flyer to all residents in the Shire. The flyer contained a brief summary of the project, invitation to comment, contact details and an invitation to a public presentation on the 19th November, 2012. A total of 2,949 flyers were mailed out.

On the 19th November, 2012 SITA gave a presentation at the York Town Hall before the monthly Council meeting.

During November 2012, information on the proposed landfill appeared in both the Avon Valley Gazette and the Avon Valley Advocate to raise community awareness of the project and encourage contact with any concerns or comments. An article covering the York community response to the development was also published in the West Australian newspaper in December 2012.

On the 29th November, 2012 residents of the York community were invited to participate in a free tour of the SITA Welshpool resource recovery centre and SITA's Shale Road Landfill in order to gain a better understanding of the proposal. Only five attended the site tour.

An Allawuna site visit was conducted on the 15th February, 2013. Over the course of the day a total of 21 local community members were driven around the site in four wheel drive vehicles.

SITA has approached and engaged with a variety of government authorities, interest groups, members of the York community and members of the general public with concerns about the proposal.

SITA has sought to address specific community concerns relating to the impacts of the landfill in as comprehensive manner as possible both within this submission and the document referred to the EPA.

SITA continues to be committed to the community and stakeholder consultation process and will maintain the established rapport through the lifetime of the project and is currently developing a community reference group from a cross section of the local York population to represent the views, concerns and queries of the residents of the area.

13. SITA commitments

SITA is committed to ensuring that the proposed Allawuna Farm Landfill will have minimal off-site impacts both during the construction and operation phases. SITA is also committed to continuing an open community consultative process.

Accordingly, SITA makes the following commitments in respect of the construction and operation of the Allawuna Farm Landfill:

13.1 waste type

- SITA will accept only Class I and Class II waste for deposit at the landfill.

13.2 construction

- Prior to commencing construction of the landfill, SITA will prepare a Landfill Construction Management Plan to ensure that the off-site impacts of construction of the landfill and subsequent stages are minimised as far as possible.
- SITA will provide a copy to Council and post a copy on its website.
- As soon as practical following completion of Cell 1 and subsequent cells, SITA will provide certification to Council that construction of the landfill has been completed in accordance with the design and specifications approved by the DER and Council as the case may be .

13.3 operation

- Prior to commencing operation of the landfill, SITA will prepare a Landfill Operational Management Plan to ensure that the off-site impacts of operation of the landfill and subsequent stages are minimised as far as possible.
- SITA will provide a copy to Council and post a copy on its website.

13.4 waste haulage vehicles

- Prior to commencing operation of the landfill, SITA will prepare a Waste Haulage Vehicle Management Plan to ensure that the impacts of increased heavy haulage vehicles on Great Southern Highway are minimised as far as practical.
- SITA will provide a copy to Council and post a copy on its website.

13.5 consultation & reporting

- Prior to commencing construction of the landfill, SITA will prepare a Consultation and Reporting Strategy to ensure a high level of on-going consultation and interaction with Council and the Community.
- SITA will provide a copy to Council and post a copy on its website.

14. conclusion

Allawuna was selected following assessment of a total of 19 sites within the Shires of Boddington, Gingin, Toodyay and York against a range of criteria.

The need for Allawuna has been driven by the:

- Impending closure of SITA's current landfill at South Cardup, south of Perth;
- Need to develop new landfills to provide for the continuing waste disposal needs of the Perth and surrounding Regions, notwithstanding ongoing advances in waste recovery and recycling;
- Preclusion of new landfills on the Swan Coastal Plain; and
- Impact of various constraints forcing the search for new landfill sites to areas generally north and east of the Darling Scarp.

The proposed facility is consistent with State and Local Planning statements and has been the subject of extensive investigations to confirm its suitability.

The proposed facility is fully screened from Great Southern Highway and provides a significant buffer of 600m wholly within the site. The buffer will minimise any adverse impacts on surrounding residents, the closest of which is located 1.9km to the north-east.

The proposed landfill will have a minimal impact on flora and fauna within the region, including Black Cockatoos.

The landfill is located outside of drinking water protection areas and is well separated from the groundwater which is limited, flows to the north and is mostly saline.

Noise modelling has demonstrated that noise levels from the landfill can be maintained well within regulatory requirements and odour modelling has demonstrated that discernible odours will be contained within the site.

A detailed traffic impact assessment was undertaken by Shawmac Traffic Engineers and concluded that :

- The existing Great Southern Highway (GSH) (pre-Allawuna) currently performs at a Level of Service (LoS) “B” and will continue to operate at a LoS “B” post-Allawuna. These values are below the threshold of LoS “D” where improvements would be necessary to improve the LoS. A LoS of “B” describes reasonable free-flow operations;
- Existing crash data was sourced from the MRWA website and shows a total of 47 accidents in the five years to 2012 of which only seven accidents involved two or more vehicles; the balance being vehicles hitting animals, other objects or unknown causes;
- The increase in traffic resulting from the Allawuna Farm Landfill will increase the risk of a fatality within each crash type only marginally and that the increased risk is still within the acceptable societal risk for fatalities; and
- The change in risk profile of the safety of the road environment would likely remain the same with the increased traffic flows.

Assessment of the social and community impacts of Allawuna has clearly shown that Allawuna will not impact on tourism or the amenity of residents and visitors. Indeed, Allawuna has the potential to provide significant direct and indirect economic benefits to the broader York region through the generation of up to 90 full time jobs; paralleling the total number of persons currently employed within tourist services industries within York.

Local businesses will also benefit from direct and in-direct expenditure of up to \$14 million per annum.

SITA also remains fully committed to an open and inclusive consultation and reporting process throughout the construction and operation of Allawuna. SITA will establish a Community Reference Group as the principle point of reference and will prepare a series of management plans dealing with the construction and operation of the landfill by which the community may judge its on-going performance.

In conclusion, it is evident that the Allawuna Farm Landfill will have minimal impact on the environment, nearby residents, tourists to the York region and the broader York community while providing potentially significant benefits to the local and regional community.

Accordingly, SITA seeks the support of the council for the approval of the Allawuna Farm Landfill.