Resource Recovery Facility, Lot 505, Neerabup Industrial Area

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Mindarie Regional Council

Report and recommendations
of the Environmental Protection Authority

Environmental Protection Authority
Perth, Western Australia
Bulletin1142
July 2004

Environmental Impact Assessment Process Timelines

Date	Progress stages	Time (weeks)
2-Dec-02	**Level of Assessment set (following any appeals upheld)**	
26- Jan-04	**Proponent Document Released for Public Comment**	**60 weeks**
22-Mar-04	**Public Comment Period Closed**	**8 weeks**
6-May-04	**Final Proponent response to the issues raised**	**6 weeks**
12-Jul-04	**EPA report to the Minister for the Environment**	**9 weeks**

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Summary and recommendations

Mindarie Regional Council (MRC) proposes to establish a Resource Recovery Facility (RRF) in the Neerabup Industrial Area (NIA). This report provides the Environmental Protection Authority's (EPA's) advice and recommendations to the Minister for the Environment on the environmental factors relevant to the proposal.

Section 44 of the *Environmental Protection Act 1986* requires the EPA to report to the Minister for the Environment on the environmental factors relevant to the proposal and on the conditions and procedures to which the proposal should be subject, if implemented. In addition, the EPA may make recommendations as it sees fit.

Relevant environmental factors

The EPA decided that the following environmental factors relevant to the proposal required detailed evaluation or discussion in the report:

(a) odour;

(b) air emissions; and

(c) flora and fauna habitat.

There were a number of other factors which were relevant to the proposal, but the EPA is of the view that the information set out in Appendix 3 provides sufficient evaluation.

Conclusion

The EPA has considered the proposal by the MRC to establish a RRF.

The EPA notes that to be accepted by the community, waste treatment facilities must not only address technical issues but must also take account of the social issues. In progressing this proposal, the MRC has undertaken a comprehensive consultation program which has set new standards for involving the community in the decision making process. The EPA commends the MRC for the substantial time and effort put into this consultation.

The EPA notes that this proposal represents a significant step toward the State Government's goal of reducing the amount of waste disposed to landfill and commends the MRC on its proactive approach to waste management.

The EPA has concluded that it is unlikely that the EPA's objectives would be compromised provided there is satisfactory implementation by the proponent of its commitments and the recommended conditions set out in Appendix 4 and summarised in Section 4.

Recommendations

The EPA submits the following recommendations to the Minister for the Environment:

1. That the Minister notes that the proposal being assessed is for a Resource Recovery Facility;
2. That the Minister considers the report on the relevant environmental factors as set out in Section 3;
3. That the Minister notes that the EPA has concluded that it is unlikely that the EPA's objectives would be compromised, provided there is satisfactory implementation by the proponent of the recommended conditions set out in Appendix 4, and summarised in Section 4, including the proponent's commitments.
4. That the Minister imposes the conditions and procedures recommended in Appendix 4 of this report.

Conditions

Having considered the proponent's commitments and information provided in this report, the EPA has developed a set of conditions that the EPA recommends be imposed if the proposal by Mindarie Regional Council to establish a Resource Recovery Facility is approved for implementation. These conditions are presented in Appendix 4. Matters addressed in the conditions include the following:

(a) that the proponent shall fulfil the commitments in the Consolidated Commitments statement set out as an attachment to the recommended conditions in Appendix 4;

(b) a requirement to have the design of the odour control system peer reviewed by an independent expert, and

(c) a requirement for an Odour Management Plan.

Contents

1. Introduction and background

This report provides the advice and recommendations of the Environmental Protection Authority (EPA) to the Minister for the Environment on the environmental factors relevant to the proposal by the Mindarie Regional Council (MRC), to establish a Resource Recovery Facility (RRF) to process 100 000 tonnes per annum of municipal solid waste (MSW) in the Neerabup Industrial Area (NIA).

The proposal was referred to the EPA in December 2002, at which time the MRC intended to submit four technology options to the EPA for assessment. The four technology options were:

- biological - composting;
- biological - digestion with biogas energy recovery;
- waste to energy – gasification; and
- waste to energy – combustion.

Due to the potential introduction of technology new to Western Australia and public apprehension about waste processing facilities, the Level of Assessment was set at Public Environmental Review (PER) with an 8 week public review period.

Following a comprehensive community consultation process, the MRC decided to drop the two "waste to energy" options and proceed to EPA assessment with only the two "biological" options.

The proponents PER document was released for public review in January and submissions closed on 23 March 2004. There were 18 submissions received, 8 from local government authorities (supporting the proposal), 9 public submissions and a submission from the Health Department of Western Australia. The issues raised in the submissions included:

- philosophy of waste management;
- flora and fauna;
- air emissions – including odour and greenhouse gas;
- other pollution issues – including surface water quality, dust and noise;
- visual amenity; and
- public health, risk and safety.

Further details of the proposal are presented in Section 2 of this report. Section 3 discusses the environmental factors relevant to the proposal. The Conditions and Commitments to which the proposal should be subject, if the Minister determines that it may be implemented, are set out in Section 4. Section 5 provides Other Advice by the EPA, Section 6 presents the EPA's conclusions and Section 7, the EPA's Recommendations.

Appendix 5 contains a summary of submissions and the proponent's response to submissions. It is included as a matter of information only and does not form part of the EPA's report and recommendations. Issues arising from this process, and which have been taken into account by the EPA, appear in the report itself.

2. The proposal

The proposed location is one of three site options in the NIA just north of Flynn Drive and about 30 kilometres north of Perth (Figure 1). The nearest residences are approximately 1.2 kilometres to the southwest of site option 2, although a future residential area is located approximately 685 metres south of site option 3. (Figure 2).

The proposal is for the construction and operation of a RRF for the separation/processing of waste. This development is an integral part of the MRC's waste management strategy. The MRC is seeking environmental approval for two technologies:

- biological – composting, and
- biological – digestion with biogas recovery.

The MRC has identified six tenderers who will be invited to bid on the project (using one or both of the technologies) once the approval has been obtained.

The majority of waste delivered to the site will be Municipal Solid Waste (MSW) collected each week from residences in the municipalities. This waste stream may be mixed with biosolids.

The plant would consist of an enclosed waste receival area where waste collection trucks would enter to tip the waste. The waste would be sorted to remove oversized and other items not suitable for the process.

The waste would then be processed in enclosed vessels where it is broken down by bacteria before having any remaining inorganic material removed. The resulting compost would then be left to mature in windrows inside the building.

For the option with biogas recovery, the gas (predominately methane) would be collected and used in one or more reciprocating motors to produce electricity. Because this electricity is produced from a renewable resource, it is considered "green" electricity.

All materials handling areas of the plant would be enclosed and maintained under negative pressure, with the extracted air being directed to a biological filter (biofilter) to remove odour.

The main characteristics of the proposal are summarised in Table 1. A detailed description of the proposal is provided in Section 3 of the PER (BSD, 2004).

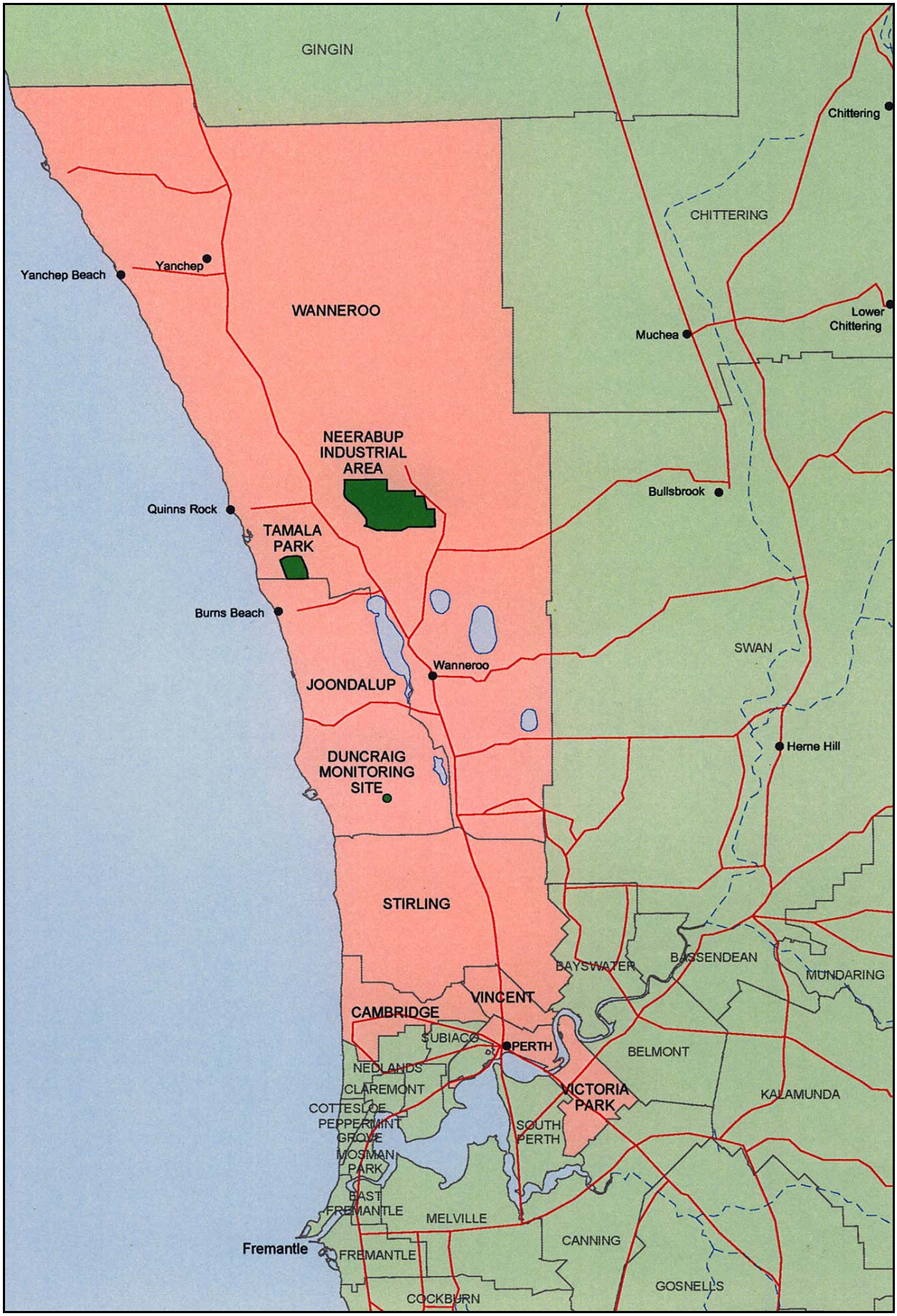

Figure 1: Proposal Location.

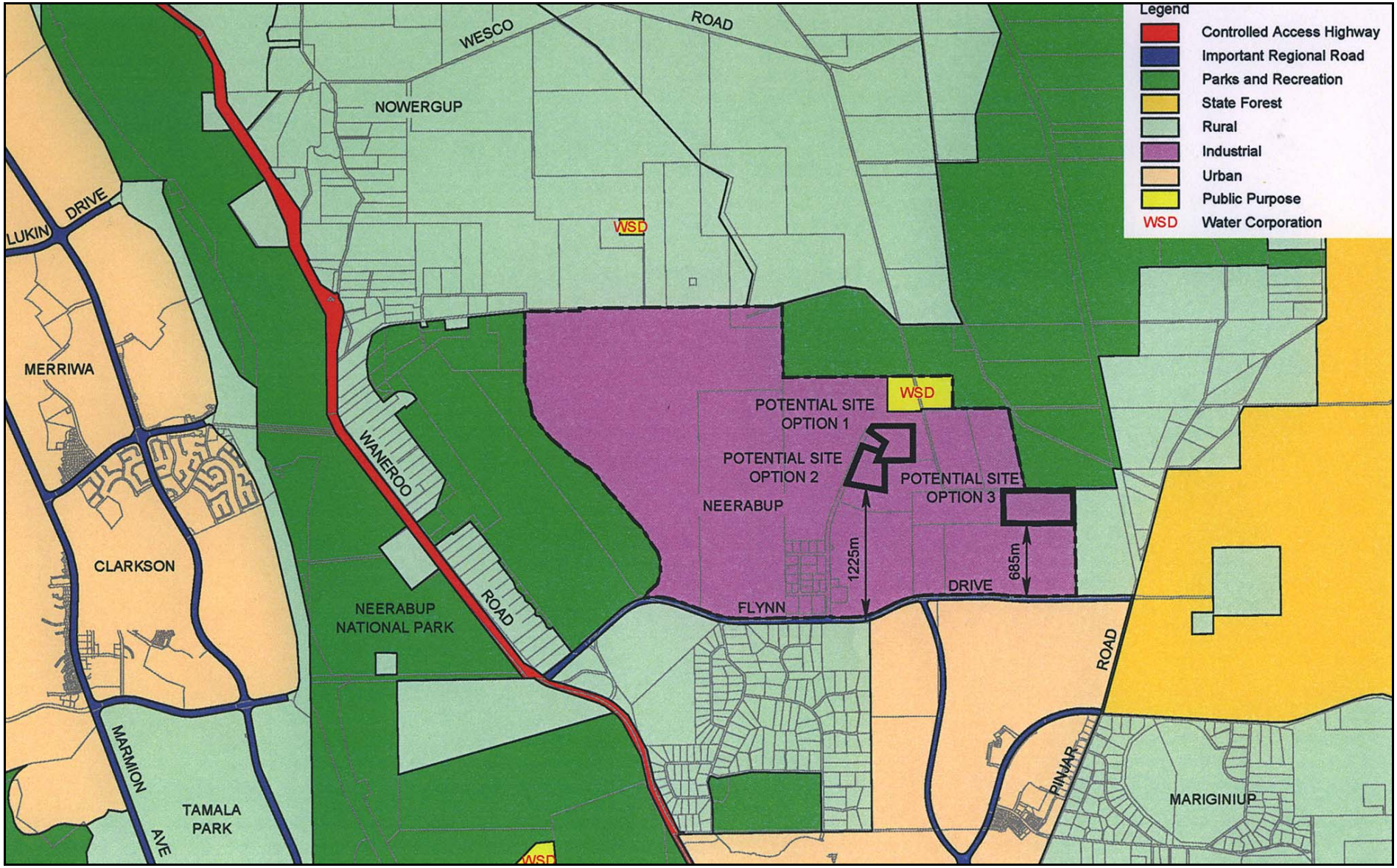

Figure 2: Neerabup Industrial Area

Table 1: Summary of key proposal characteristics

Element	Description/Quantities
Location	Lot 505, Neerabup Industrial Area.
Nature of operation	Resource recovery, including recycling and waste processing.
Areas serviced by the facility (Note: this is indicative only as the areas may be subject to change)	• Town of Cambridge; • City of Joondalup; • City of Perth; • City of Stirling; • Town of Victoria Park; • Town of Vincent; and • City of Wanneroo.
Total area of site:	20 hectares.
Area required:	approximately 10 hectares.
Inputs	• municipal solid waste (MSW) - up to 100 000 tonnes per annum (excluding co-mingled dry recyclables); • biosolids – up to 33 000 tonnes per annum; and • animal manure – up to 7 000 tonnes per annum.
Outputs/products	• stabilised compost; • segregated recyclables (paper, plastic, glass, ferrous and non ferrous metals); • residual waste (to landfill); and • electricity (optional).
List of major components	• enclosed waste receival building of up to approximately 6 000 square metres, which is maintained under negative pressure; • various vessels/digesters for biological decomposition of organic waste (dependant on final technology provider) capable of processing 100 000 tonnes of waste and 40 000 tonnes of biosolids and animal manure per annum; • associated conveyors and screening equipment; • enclosed compost refining/maturation building of up to approximately 10 000 square metres, which is maintained under negative pressure; • external sealed compost (mature) storage area; • one or more biofilters consisting of two or more cells; • biogas treatment and storage cleanup; • up to three reciprocating engines; and

Element	Description/Quantities
	• electrical generating equipment capable of producing up to 3 Mega watts.
Process water:	up to 150 000 kilolitres per annum.
Other infrastructure	• administration building; • weighbridge/s; and • access roads and car parks.

Since release of the PER, a number of modifications to the proposal have been made by the proponent. These include:

- three potential site options were identified in the NIA – the MRC has now confirmed that it has chosen the third site option (Figure 2). This means the nearest current residences are 1875 metres away and the nearest future residential area is 685 metres away.

The potential impacts of the proposal initially predicted by the proponent in the PER document (BSD, 2004) and their proposed management are summarised in Section 3 of the PER.

3. Relevant environmental factors

Section 44 of the *Environmental Protection Act 1986* requires the EPA to report to the Minister for the Environment on the environmental factors relevant to the proposal and the conditions and procedures, if any, to which the proposal should be subject. In addition, the EPA may make recommendations as it sees fit.

The identification process for the relevant factors selected for detailed evaluation in this report is summarised in Appendix 3. The reader is referred to Appendix 3 for the evaluation of factors not discussed below. A number of these factors, such as noise, transport, are relevant to the proposal, but the EPA is of the view that the information set out in Appendix 3 provides sufficient evaluation.

It is the EPA's opinion that the following environmental factors relevant to the proposal require detailed evaluation or discussion in this report:

(a) odour;

(b) air emissions; and

(c) flora and fauna habitat.

The above relevant factors were identified from the EPA's consideration and review of all environmental factors generated from the PER document and the submissions received, in conjunction with the proposal characteristics.

Details on the relevant environmental factors and their assessment are contained in Sections 3.1 - 3.3. The description of each factor shows why it is relevant to the

proposal and how it will be affected by the proposal. The assessment of each factor is where the EPA decides whether or not a proposal meets the environmental objective set for that factor.

3.1 Odour

Description

The proposed waste stream (MSW and possibly biosolids) is inherently odorous and has the potential to cause nuisance to people on surrounding properties. Proposed measures to manage the odours are outlined in the PER. These include:

- all waste handling and processing operations to be conducted within enclosed buildings;
- the building to be kept as airtight as possible and maintained under negative pressure;
- the doors to be kept closed except when trucks are entering or leaving the building;
- exhaust air from potential odour sources and off-gases from the process to be ducted to a biofilter;
- the compost maturation area to be enclosed (external storage area only to be used for mature compost).

The nearest residences are approximately 1875 metres southwest of the site boundary, however there is a future residential area approximately 685 metres south of the site boundary. The Draft Guidelines for the Storage, Processing and Recycling of Organic Wastes (DEP, 1997) specifies a buffer distance of 150 metres for a processing facility using an in-vessel system with sophisticated odour control. The 150 metre buffer distance falls within the industrial zoning.

The PER included the results of site specific odour modelling undertaken by four of the tenderers. Each of these results predicted compliance with the EPA's odour criterion in Guidance No. 47 (EPA, 2002) at the nearest future residential area.

Submissions

Submissions related to the validity of the odour modelling and the assumptions used.

Assessment

The area considered for assessment of this factor is the proposal area and surrounding properties including nearby residences.

The EPA's environmental objective for this factor is to ensure that odour emissions do not cause unreasonable impact, including nuisance to surrounding land users.

The EPA notes the generic design features of the facility, specifically it being fully enclosed and kept under negative pressure with all exhaust air treated through one or more biofilters. The facility also meets the recommended buffer distance of 150 metres which is secure within industrial zoning.

The Department of Environment (DoE) advised that each of the tenderers has used different assumptions and levels of conservatism in the odour modelling. As such

caution should be used in comparing the odour contours and the predictions should not be used to rank the technologies on their odour performance but should be viewed as the range of likely odour impacts for the proposal as a whole. The modelling undertaken is acceptable and predicts that the facility can comply with the EPA's criterion at the nearest potential future residences.

The EPA notes that the odour criterion given in Guidance No. 47 is appropriate for this assessment and notes the DoE's advice above.

The EPA believes that, in order to meet community expectations for a facility of this type and location, extra vigilance is required to ensure that odour does not cause a nuisance. While biofilters are a proven and effective way of controlling odour, they need to be designed correctly and operated and monitored in a proactive manner to ensure efficient performance.

Recently the Southern Metropolitan Regional Council (SMRC) experienced significant odour problems during the commissioning of its Bedminster anaerobic digestion facility in Canning Vale. The SMRC facility uses similar odour control to that proposed by the MRC. The problem was apparently caused by excessive volumes and temperature of exhaust air which killed the micro-organisms in the biofilter thus making it ineffective. However, the EPA notes that the MRC will have greater leeway to sort out any commissioning problems without affecting amenity due to the greater distance to existing residences (1875 metres compared with 300 metres).

To provide the necessary assurance that the odour control system can function adequately at all times, the EPA believes that the total odour control system should incorporate:

- a detailed design which takes special account of Western Australia's hot, dry climate and the lessons learned from the commissioning of the SMRC facility,
- redundant (i.e. backup/standby) design features (including multiple blowers, ducting and biofilter cells) which can operate independently to allow the odour control system to continue to function should any one item fail or be down for maintenance,
- automated process control which monitors critical parameters such as exhaust flow rate, humidity, temperature, biofilter moisture content, and adjusts the system (flow rate, humidification/cooling, irrigation etc) to ensure that the exhaust air is maintained within the parameters that the biofilter can handle,
- a standby power supply, which allows the odour control system to continue to function in the event of a power failure,
- an automated alarm and out of hours notification system to notify a responsible person in the event of upset conditions, and
- an Odour Management Plan (OMP) which covers all aspects of the operations.

The EPA has thus recommended a condition requiring the proponent to:

1) have an independent expert undertake a peer review of the detailed design of the total odour control system with particular emphasis on the design of the biofilter and the process control, and
2) prepare an OMP which addresses:
    - the biofilter acclimation period,
    - biofilter media change out,
    - an initial dynamic olfactometry assessment,
    - regular checks of biofilter loading to ensure the biofilter is balanced and identify any short circuits (eg surface flow rate measurements and smoke tests),
    - regular qualitative assessments of odour from the facility,
    - contingency plans during upset or maintenance conditions, and
    - complaint registration, investigation and response.

Summary

Having particular regard to the:

(a) general features of the odour control system proposed;

(b) recommended condition requiring peer review of design; and

(c) recommended condition requiring preparation of an OMP,

it is the EPA's opinion that the proposal can be managed to meet the EPA's environmental objective for this factor provided that the recommended conditions are made legally enforceable.

3.2 Air emissions

Description

Waste to energy plants have the potential to emit significant quantities of air pollutants, however the dropping of the waste to energy options has significantly reduced the quantities of NO_x and SO_2 likely to be emitted and the potential for toxic emissions. The technology options with biogas recovery propose to use the biogas as a fuel in reciprocating motors (to power generators and produce electricity) and there will be some exhaust emissions from these motors.

Only enough biogas to generate electricity in the 1.1 to 2.65 Mega Watt (MW) range would be produced. This is similar in size to a typical landfill gas recovery system (eg the MRC's Tamala Park landfill has 3 MW of generating capacity) and the biogas produced is also expected to be a cleaner fuel than landfill gas.

Due to the small capacity of the generators, the emissions of NO_x and SO_2 are minimal (less than 1.5 grams per second) and the PER included dispersion modelling which predicts that the resultant ambient concentrations are within the NEPM air quality criteria (NEPC, 1998).

Submissions

Submissions questioned various aspects of the emissions detailed in the PER but were adequately answered and clarified in the proponent's response to public submissions (Appendix 5).

Assessment

The area considered for assessment of this factor is the proposal area and surrounding properties including nearby residences.

The EPA's environmental objective for this factor is to ensure that gaseous emissions from the plant; meet air quality standards and limits stated in relevant air quality standards/guidelines including the NEPM for ambient air quality; do not cause an environmental or human health/amenity problem; and are minimised using best practicable technology.

The DoE advised that while the modelling included some simplifications, conservative assumptions were used and the predicted concentrations of NO_x and SO_2 were well below the NEPM air quality criteria.

The EPA notes that although the biogas is expected to be a cleaner fuel than landfill gas, the proponent has made a commitment to undertake stack testing to fully characterise the emissions to confirm they are as described in the PER.

The EPA notes that the RRF will also need a DoE Part V licence under the *Environmental Protection Act 1986* and this licence could specify any required emission monitoring and reporting requirements.

Summary

The EPA considers the issue of air emissions has been adequately addressed and can meet the EPA's objectives for this factor.

3.3 Flora and fauna habitat

Description

The PER provided information on three site options. Options 1 and 2 both have remnant native vegetation over the entire site and option 3 has its western half cleared but includes Bush Forever Site 295 on its eastern half.

Submissions

Submissions related to the adequacy of the flora and fauna surveys on site options 1 and 2 and what impact the proposal would have on the Bush Forever site.

In its response to submissions, the MRC has confirmed that it has purchased the third site option in the NIA. The matter of adequacy of the flora and fauna surveys on site options 1 and 2 is thus no longer relevant.

Assessment

The area considered for assessment of this factor is the proposal site (option 3) which includes Bush Forever Site 295.

The EPA's environmental objective for this factor is to ensure that the ecological values of the Bush Forever Site are protected.

Although the chosen site includes Bush Forever Site 295 on its eastern half, the MRC has confirmed that the RRF will be constructed only on the western half which has already been cleared through previous sand mining activities.

The EPA notes that the MRC has chosen the most environmentally suitable site option with respect to vegetation. Since the Bush Forever Site will be protected and there will be no significant clearing of remnant vegetation or habitat loss, this issue becomes one of management of the Bush Forever site.

The EPA notes that the proponent has made a commitment to maintain the integrity and values of the Bush Forever site on an ongoing basis. Key aspects will be weed and pest control (eg the need to keep weed seeds and pests from entering the Bush Forever site) and prevent native animals from scavenging at the RRF.

Summary

The EPA considers the issue of flora and fauna habitat has been adequately addressed and can meet the EPA's objectives for this factor.

4. Conditions and Commitments

Section 44 of the *Environmental Protection Act 1986* requires the EPA to report to the Minister for the Environment on the environmental factors relevant to the proposal and on the conditions and procedures to which the proposal should be subject, if implemented. In addition, the EPA may make recommendations as it sees fit.

In developing recommended conditions for each project, the EPA's preferred course of action is to have the proponent provide an array of commitments to ameliorate the impacts of the proposal on the environment. The commitments are considered by the EPA as part of its assessment of the proposal and, following discussion with the proponent, the EPA may seek additional commitments.

The EPA recognises that not all of the commitments are written in a form which makes them readily enforceable, but they do provide a clear statement of the action to be taken as part of the proponent's responsibility for, and commitment to, continuous improvement in environmental performance. The commitments, modified if necessary to ensure enforceability, then form part of the conditions to which the proposal should be subject, if it is to be implemented.

4.1 Proponent's commitments

The proponent's commitments as set in the PER and subsequently modified, as shown in Appendix 4, should be made enforceable. These include:

- establishing an Environmental Management System which covers both construction and operation;
- undertaking monitoring to characterise stack emissions; and
- maintaining the integrity and values of Bush Forever Site 295 on an ongoing basis.

4.2 Recommended conditions

Having considered the proponent's commitments and the information provided in this report, the EPA has developed a set of conditions that the EPA recommends be imposed if the proposal by the Mindarie Regional Council to establish a Resource Recovery Facility, is approved for implementation.

These conditions are presented in Appendix 4. Matters addressed in the conditions include the following:

(a) that the proponent shall fulfil the commitments in the Consolidated Commitments statement set out as an attachment to the recommended conditions in Appendix 4;

(b) a requirement to have the design of the odour control system peer reviewed by an independent expert; and

(c) a requirement for an Odour Management Plan.

It should be noted that other regulatory mechanisms relevant to the proposal are:

- DoE Part V licence,
- Water and River Commission ground water abstraction licence, and
- Health Department of Western Australia may have involvement if raw sewage is to be used in the process.

5. Other Advice

5.1 Compost quality

The EPA is aware that to be successful, the chosen waste treatment technology must be carefully matched to the waste and the waste collection method. It is also important to produce a useful end product eg a high quality compost and/or reliable power generation. The EPA notes the MRC's commitment to monitor compost quality to ensure the compost is appropriate for its end use and would direct any contaminated compost to landfill. However it is pointless to produce contaminated compost that needs to be disposed to landfill on an ongoing basis and the EPA notes that while commercial failure would be unlikely to cause an adverse environmental impact (waste would continue to go to landfill as it does now), it would mean that the environmental benefits of the proposal would not be realised.

5.2 Water usage

The EPA notes that with the current water shortage being experienced in Perth, both surface and groundwater aquifers are depleted, and as such, all water users should be doing their best to minimise consumption. While it is understood the MRC has purchased a ground water licence allocation sufficient for the proposal, the MRC has also committed to investigate ways to minimise groundwater use and the EPA encourages the MRC to fully investigate options such as storm water retention and reuse as process water.

6. Conclusions

The EPA has considered the proposal by the MRC to establish a RRF.

The EPA notes that to be accepted by the community, waste treatment facilities must not only address technical issues but must also take account of the social issues. In progressing this proposal, the MRC has undertaken a comprehensive consultation program which has set new standards for involving the community in the decision making process. The EPA commends the MRC for the substantial time and effort put into this consultation.

The EPA notes that this proposal represents a significant step toward the State Government's goal of reducing the amount of waste disposed to landfill and commends the MRC on its proactive approach to waste management.

The EPA has concluded that it is unlikely that the EPA's objectives would be compromised provided there is satisfactory implementation by the proponent of their commitments and the recommended conditions set out in Appendix 4 and summarised in Section 4.

7. Recommendations

The EPA submits the following recommendations to the Minister for the Environment:

1. That the Minister notes that the proposal being assessed is for a Resource Recovery Facility;
2. That the Minister considers the report on the relevant environmental factors as set out in Section 3;
3. That the Minister notes that the EPA has concluded that it is unlikely that the EPA's objectives would be compromised, provided there is satisfactory implementation by the proponent of the recommended conditions set out in Appendix 4, and summarised in Section 4, including the proponent's commitments.
4. That the Minister imposes the conditions and procedures recommended in Appendix 4 of this report.

Appendix 1

List of submitters

Organisations:

Health Department of WA
Eastern Metropolitan Regional Council
Town of Cambridge
Town of Vic Park
Town of Vincent
City of Joondalup
City of Perth
City of Stirling
City of Wanneroo
Community Engagement Advisory Group (CEAG)
Carrimar Residents Association
Stirling Regional Council of Greens

Individuals:

T Darbyshire
C Gillett
N Hewar
P Marwood
T Scarrott
G Tatum

Appendix 2

References

BSD (2004) *Resource Recovery Facility – Public Environmental Review*. BSD/Meinhardt Joint Venture, January 2004.

DEP (1997) *Guidelines for the Storage, Processing and Recycling of Organic Waste*. Department of Environmental Protection, Government of Western Australia, December 1997.

EPA (2002) *Guidance for the Assessment of Environmental Factors No. 47 – Assessment of Odour Impacts from new Proposals*. Environmental Protection Authority, March 2002.

NEPC (1998) *National Environment Protection Council (Ambient Air Quality) Measure*. National Environmental Protection Council, June 1998.

Appendix 3

Summary of identification of relevant environmental factors

Summary of identification of relevant Environmental Factors

FACTOR	RELEVANT AREA	PROPOSAL CHARACTERISTICS	GOVERNMENT AGENCY AND PUBLIC COMMENTS	IDENTIFICATION OF RELEVANT FACTORS
BIOPHYSICAL				
Flora and fauna habitat	Proposal site of approximately 20 hectares.	Vegetation on the western half of the site is predominantly cleared. The eastern half of the site is Bush Forever Site 295. There would be some revegetation and landscaping of the area using native species indigenous to the area. The site is zoned for general industry under the Metropolitan Regional Scheme.	A submitter thought the flora survey was carried out at the wrong time of the year. Submitters questioned how the Bush Forever site would be protected.	**Considered to be a relevant factor.**
POLLUTION				
Groundwater quality and quantity	Proposal area and superficial aquifer down hydraulic gradient from the plant within the site boundaries.	Site is underlain by sandy soils and a shallow unconfined aquifer at depths of 1-15m. Groundwater flows west toward the coast. All waste handling facilities (and internal roads) would be sealed. All process areas would be enclosed and bunded with drainage sumps to collect potentially contaminated water.	Submissions related to the potential impact on groundwater quality and quantity and the amount of process water required.	Part V licence would ensure proposal is carried out in accordance with the DEP's Draft Guidelines for the Storage, Processing and Recycling of Organic wastes (December 1997). The design features of the plant makes the possibility of Groundwater contamination unlikely. The EPA will comment on water usage in the "other advice" section. **Factor does not require further EPA evaluation as factor managed by Part V of the *Environmental Protection Act 1986*.**

POLLUTION				
Odour	Proposal area and surrounding properties including nearby residences.	All waste handling facilities would be enclosed and maintained under negative pressure. Exhaust air from potential odour sources would be ducted to a biofilter.	Submitter sought clarification and further information relating to odour emissions and odour management.	**Considered to be a relevant Factor.**
Dust	Proposal area and surrounding properties.	Construction activities have the potential to create dust emissions. During Operation, all waste handling facilities would be enclosed and all internal roads would be sealed.	A submitter asked about dust monitoring locations.	Submitter had misinterpreted purpose of monitoring station. Can be managed under Part V of the *Environmental Protection Act 1986*. **Factor does not require further EPA evaluation as factor managed by Part V of the *Environmental Protection Act 1986*.**
Greenhouse gases	Western Australia.	The facility would divert waste from landfill. Processing the waste gives off carbon dioxide whereas landfilling the same waste results in methane gas. Since methane has 21 times more Global Warming Potential than carbon dioxide, the proposal would result in a reduction of greenhouse gas emissions. Biogas recovery option would produce power from a renewable resource (eg green energy).	Submitters questioned the basis of the greenhouse gas calculations.	Information was adequate to demonstrate that greenhouse gas emissions would be reduced. **Reduction in emissions so factor does not require further EPA evaluation.**
Noise	Proposal area and surrounding properties including nearby residences.	The facility has buildings which contain significant noise sources along with several items of mobile equipment. The noisiest items are the trommels and the mobile equipment. The MRC undertook modelling shows that the proposal can comply with the noise regulations at all times as long as the plant operating hours stated in the PER are adhered to.	Submitters asked questions about the noise modelling.	The DoE notes that the modelling has been performed in accordance with the Draft "Guidance for EIA No. 8 - Environmental Noise". **Factor does not require further EPA evaluation as factor managed by Part V of the *Environmental Protection Act 1986*.**

Wastes and waste management philosophy	Surrounding communities serviced by the facility.	The facility would result in a 70-90% reduction in the amount of domestic waste going to landfill. Co-mingled dry recyclables (paper, plastic, glass, ferrous and non ferrous metals) would be segregated for recycling. Putrescible wastes would be processed into compost and sold. The remaining residue would be disposed of to landfill. The proponent has committed to compost quality monitoring to ensure that the compost meets criteria applicable to the end use end use of the compost to ensure that relevant standards are complied with.	Submitters questioned various aspects of the waste management philosophy and the appropriateness of the RRF.	Comment on the appropriateness of waste philosophy is outside the scope of the EPA's assessment of this individual proposal. The DoE notes that the proposal would significantly contribute to the State Government's goal of reducing waste to landfill. The EPA will comment on compost quality in the "other advice" section. **Factor does not require further EPA evaluation.**
SOCIAL SURROUNDINGS				
Public Health and Safety	Proposal area and surrounding areas including nearby roads and residences.	Road Traffic -Site would be accessed by major roads, and approximately 150 trucks movements per day would enter the facility. Flammable/Explosive gases - methane is produced in the process. Gas detectors would be fitted.	A submitter was concerned about the possibility of the storage of large quantities of chemicals as at Brookdale.	The RRF is for processing MSW and possibly biosolids and not industrial chemicals. **Factor does not require further EPA evaluation.**
Visual amenity	Surrounding area.	Proposal is located in an industrial area.	A submitter questioned whether the building would meet council guidelines.	MRC advised building codes would be complied with. **Factor does not require further EPA evaluation.**
Communication	Surrounding community.	Potential for adverse public reaction to waste handling facilities. Proponent carried out a community consultation program.	A submitter questioned the adequacy of the consultation.	The DoE notes that the proponent undertook a comprehensive community consultation program. **Factor does not require further EPA evaluation.**

Appendix 4

Recommended Environmental Conditions and Proponent's Consolidated Commitments

Statement No.

RECOMMENDED CONDITIONS AND PROCEDURES

STATEMENT THAT A PROPOSAL MAY BE IMPLEMENTED (PURSUANT TO THE PROVISIONS OF THE ENVIRONMENTAL PROTECTION ACT 1986)

REGIONAL RESOURCE RECOVERY FACILITY, LOT 505, NEERABUP INDUSTRIAL AREA, CITY OF WANNEROO

Proposal: The construction and operation of a Resource Recovery Facility on Lot 505 in the Neerabup Industrial Area to process up to 100 000 tonnes per annum of municipal solid waste and up to 40 000 tonnes per annum of biosolids and animal manure. There may also be biogas capture and power generation, as documented in schedule 1 of this statement.

Proponent: Mindarie Regional Council

Proponent Address: Lot 17, Marmion Avenue, MINDARIE WA 6030

Assessment Number: 1461

Report of the Environmental Protection Authority: Bulletin 1142

The proposal referred to above may be implemented by the proponent subject to the following conditions and procedures:

1 Implementation

1-1 The proponent shall implement the proposal as documented in schedule 1 of this statement subject to the conditions of this statement.

2 Proponent Commitments

2-1 The proponent shall implement the environmental management commitments documented in schedule 2 of this statement.

3 Proponent Nomination and Contact Details

3-1 The proponent for the time being nominated by the Minister for the Environment under section 38(6) or (7) of the *Environmental Protection Act 1986* is responsible for the implementation of the proposal until such time as the Minister for the Environment has exercised the Minister's power under section

38(7) of the Act to revoke the nomination of that proponent and nominate another person as the proponent for the proposal.

3-2 If the proponent wishes to relinquish the nomination, the proponent shall apply for the transfer of proponent and provide a letter with a copy of this statement endorsed by the proposed replacement proponent that the proposal will be carried out in accordance with this statement. Contact details and appropriate documentation on the capability of the proposed replacement proponent to carry out the proposal shall also be provided.

3-3 The nominated proponent shall notify the Department of Environment of any change of contact name and address within 60 days of such change.

4 Commencement and Time Limit of Approval

4-1 The proponent shall substantially commence the proposal within five years of the date of this statement or the approval granted in this statement shall lapse and be void.

Note: The Minister for the Environment will determine any dispute as to whether the proposal has been substantially commenced.

4-2 The proponent shall make application for any extension of approval for the substantial commencement of the proposal beyond five years from the date of this statement to the Minister for the Environment, prior to the expiration of the five-year period referred to in condition 4-1.

The application shall demonstrate that:

1. the environmental factors of the proposal have not changed significantly;

2. new, significant, environmental issues have not arisen; and

3. all relevant government authorities have been consulted.

Note: The Minister for the Environment may consider the grant of an extension of the time limit of approval not exceeding five years for the substantial commencement of the proposal.

5 Compliance Audit and Performance Review

5-1 The proponent shall prepare an audit program and submit compliance reports to the Department of Environment which address:

1. the status of implementation of the proposal as defined in schedule 1 of this statement;

2. evidence of compliance with the conditions and commitments; and

3. the performance of the environmental management plans and programs.

Note: Under sections 48(1) and 47(2) of the *Environmental Protection Act 1986*, the Chief Executive Officer of the Department of Environment is empowered to audit the compliance of the proponent with the statement and should directly receive the compliance documentation, including environmental management plans, related to the conditions, procedures and commitments contained in this statement.

5-2 The proponent shall submit a performance review report every five years after the start of operations, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority, which addresses:

1. the major environmental issues associated with the project; the targets for those issues; the methodologies used to achieve these; and the key indicators of environmental performance measured against those targets;

2. the level of progress in the achievement of sound environmental performance, including industry benchmarking, and the use of best available technology where practicable;

3. significant improvements gained in environmental management, including the use of external peer reviews;

4. stakeholder and community consultation about environmental performance and the outcomes of that consultation, including a report of any on-going concerns being expressed; and

5. the proposed environmental targets over the next five years, including improvements in technology and management processes.

5-3 The proponent may submit a report prepared by an auditor approved by the Department of Environment under the "Compliance Auditor Accreditation Scheme" to the Chief Executive Office of the Department of Environment on each condition/commitment of this statement which requires the preparation of a management plan, programme, strategy or system, stating that the requirements of each condition/commitment have been fulfilled within the timeframe stated within each condition/commitment.

6 Air Emissions

6-1 Prior to commencement of construction of the facility, the proponent shall have an independent expert undertake a peer review of the detailed design of the total odour control system with particular emphasis on the design of the biofilter and the process control, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

Note: The peer review will be included with the Works Approval application

7 Odour

7-1 Prior to the commencement of operation, the proponent shall prepare an Odour Management Plan which addresses:

- the biofilter acclimation period;
- biofilter media change out;
- an initial dynamic olfactometry assessment;
- regular checks of biofilter loading to ensure the biofilter is balanced and identify any short circuits (eg surface flow rate measurements and smoke tests);
- regular qualitative assessments of odour from the facility;
- contingency plans during upset or maintenance conditions; and
- complaint registration, investigation and response,

to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority

7-2 The proponent shall implement the Odour Management Plan, required by condition 7-1, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

7-3 The proponent shall make the Odour Management Plan, required by condition 7-1, publicly available, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

8 Decommissioning Plans

8-1 Prior to construction, the proponent shall prepare a Preliminary Decommissioning Plan, which provides the framework to ensure that the site is left in an environmentally acceptable condition to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

The Preliminary Decommissioning Plan shall address:

1 rationale for the siting and design of plant and infrastructure as relevant to environmental protection, and conceptual plans for the removal or, if appropriate, retention of plant and infrastructure;

2 a conceptual rehabilitation plan for all disturbed areas and a description of a process to agree on the end land use(s) with all stakeholders;

3 a conceptual plan for a care and maintenance phase; and

4 management of noxious materials to avoid the creation of contaminated areas.

8-2 At least 12 months prior to the anticipated date of decommissioning, or at a time agreed with the Environmental Protection Authority, the proponent shall prepare a Final Decommissioning Plan designed to ensure that the site is left in an environmentally acceptable condition to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

The Final Decommissioning Plan shall address:

1 removal or, if appropriate, retention of plant and infrastructure in consultation with relevant stakeholders;

2 rehabilitation of all disturbed areas to a standard suitable for the agreed new land use(s); and

3 identification of contaminated areas, including provision of evidence of notification and proposed management measures to relevant statutory authorities.

8-3 The proponent shall implement the Final Decommissioning Plan required by condition 8-2 until such time as the Minister for the Environment determines, on advice of the Environmental Protection Authority, that the proponent's decommissioning responsibilities have been fulfilled.

8-4 The proponent shall make the Final Decommissioning Plan required by condition 8-2 publicly available, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

Procedures

1 Where a condition states "to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority", the Environmental Protection Authority will provide that advice to the Department of Environment for the preparation of written notice to the proponent.

2 The Environmental Protection Authority may seek advice from other agencies or organisations, as required, in order to provide its advice to the Department of Environment.

3 Where a condition lists advisory bodies, it is expected that the proponent will obtain the advice of those listed as part of its compliance reporting to the Department of Environment.

Notes

1 The Minister for the Environment will determine any dispute between the proponent and the Environmental Protection Authority or the Department of Environment over the fulfilment of the requirements of the conditions.

2 The proponent is required to apply for a Works Approval and Licence and Registration for this project under the provisions of Part V of the *Environmental Protection Act 1986*.

3 Within this statement, to "have in place" means to "prepare, implement and maintain for the duration of the proposal".

Schedule 1

Resource Recovery Facility, Neerabup Industrial Area (Assessment No. 1461)

The proposal is for the construction and operation of a Resource Recovery Facility for the separation/processing of waste. The environmental approval is for two generic technologies:

- biological – composting, and
- biological – digestion with biogas recovery.

The majority of waste delivered to the site will be Municipal Solid Waste collected each week from residences in the municipalities. This waste stream may be mixed with biosolids.

The plant would consist of an enclosed waste receival area where waste collection trucks would enter to tip the waste. The waste would be sorted to remove oversized and other items not suitable for the process.

The waste would then be processed in enclosed vessels where it is broken down by bacteria before having any remaining inorganic material removed. The resulting compost would then be left to mature in windrows inside the building.

For the option with biogas recovery, the gas (predominately methane) would be collected and used in one or more reciprocating motors to produce electricity.

All materials handling areas of the plant would be enclosed and maintained under negative pressure, with the extracted air being directed to a biological filter (biofilter) to remove odour.

Table 1 – Key Proposal Characteristics

Element	**Description/Quantities**
Location	Lot 505, Neerabup Industrial Area.
Nature of operation	Resource recovery, including recycling and waste processing.
Total area of site:	approximately 20 hectares.
Area required:	approximately 10 hectares.
Inputs	• municipal solid waste (MSW) - up to 100 000 tonnes per annum (excluding co-mingled dry recyclables); • biosolids – up to 33 000 tonnes per annum; and • animal manure – up to 7 000 tonnes per annum.
Outputs/products	• stabilised compost; • segregated recyclables (paper, plastic, glass, ferrous and non ferrous metals); • residual waste (to landfill); and • electricity (optional).

List of major components	• enclosed waste receival building of up to approximately 6 000 square metres, which is maintained under negative pressure; • various vessels/digesters for biological decomposition of organic waste (dependant on final technology provider) capable of processing 100 000 tonnes of waste and 40 000 tonnes of biosolids and animal manure per annum; • associated conveyors and screening equipment; • enclosed compost refining/maturation building of up to approximately 10 000 square metres, which is maintained under negative pressure; • external sealed compost (mature) storage area; • one or more biofilters consisting of two or more cells; • biogas treatment and storage cleanup; • up to three reciprocating engines; and • electrical generating equipment capable of producing up to 3 Mega watts.
Process water:	up to 150 000 kilolitres per annum.
Other infrastructure	• administration building; • weighbridge/s; and • access roads and car parks.

Schedule 2

Proponent's Environmental Management Commitments

6 July 2004

RESOURCE RECOVERY FACILITY, LOT 505, NEERABUP INDUSTRIAL AREA

(Assessment No. 1461)

Mindarie Regional Council

Proponent's Environmental Management Commitments – July 2004

RESOURCE RECOVERY FACILITY, NEERABUP INDUSTRIAL AREA (Assessment No. 1461)

Note: The term "commitment" as used in this schedule includes the entire row of the table and its six separate parts as follows:

- a commitment number;
- a commitment topic;
- the objective of the commitment;
- the 'action' to be undertaken by the proponent;
- the timing requirements of the commitment; and
- the body/agency to provide technical advice to the Department of Environment.

	Topic	Action	Objective	Timing	Advice
1.	Construction	Prepare and Implement a **Construction Environmental Management Plan** which addresses: **Design:** • Measures to limit vegetation clearing; • Water supply; • Drainage design; • Evaluate and where practical implement options to harvest and use stormwater; and • Noise management measures. **Construction:** • Works Approval conditions • Measures to limit vegetation clearing;	To ensure that the environmental requirements are integrated and built into project design. Ensure that construction impacts (direct and indirect) are minimised. Ensure Works Approval conditions issued by the DoE pursuant to Part V of the *Environmental Protection Act* are complied with at all times. Ensure environmental approval granted by the Minister for the	Prior to site preparation work commencing.	DoE

	Topic	Action	Objective	Timing	Advice
		• Construction noise and vibration; • Dust management; • Noise management; • Fire management; • Movement, storage and refuelling of machinery during construction; • Storage and handling procedures for all construction materials; • Description of environmental standards, safeguards and emergency responses; • Licensing requirements and approvals; • Public relations and communication; • Monitoring; and • Progress and compliance reporting.	granted by the Minister for the Environment pursuant to Part IV of the *Environmental Protection Act* is complied with at all times. Minimise the abstraction and use of groundwater.		

	Topic	Action	Objective	Timing	Advice
2.	Operation	Prepare an **Environmental Management System** which addresses: **Air Emissions** • Monitoring air emissions in accordance with Licence conditions issued pursuant to Part V of the Environmental Protection Act. **Compost Quality Monitoring:** • Compost criteria (including contaminants); • Method of compost monitoring; • Waste collection method; • Waste pre-sorting, compost screening and separation methods; • Monitoring (OHS and environmental); • Batch/quality control measures; • Compatibility of compost with end use; • Contingency plan for non-conforming compost; and • Reporting. **Odour Monitoring:** • Proposed criteria; • Odour monitoring methodology; • Odour control measures; • Monitoring and maintenance of odour control equipment; and • Reporting. **Surface Water Quality:** • Stormwater treatment and disposal; • Separation of water stormwater and process water; • Management of excess process water;	Ensure the proposal is operated in accordance with 'Best Practice' and emissions to the environment are below relevant criteria. Ensure monitoring results are available to the community. Ensure Licence conditions issued by the DoE pursuant to Part V of the *Environmental Protection Act* are complied with at all times. Ensure environmental approval granted by the Minister for the Environment pursuant to Part IV of the *Environmental Protection Act* is complied with at all times.	Prior to commissioning	DoE

	Topic	Action	Objective	Timing	Advice
		• Maintenance of stormwater equipment, treatment and disposal equipment; and • Spills management and clean-up procedures. **Noise Monitoring:** • Proposed criteria; • Noise monitoring methodology; • Noise control measures; and • Reporting. **Emergency Response and Contingency Measures:** • The risks associated with operation of the RRF; • Method of monitoring the risks; • The measures to control risk; • Emergency response and contingency procedures; • Public complaints and response procedures; • Public relations and communication; and • Reporting. **Review and Improvement of Environmental Management System:** • Public consultation; • Review period and innovation process; • Education and training of employees; • Procedures and practices; • Allocation of employee roles and responsibilities; and • Reporting and communication mechanisms.			

	Topic	Action	Objective	Timing	Advice
3	Operation	Release the **Environmental Management System** for a four-week public review period.	Ensure that the community is consulted and given the opportunity to provide input into the Environmental Management System.	Prior to commissioning	DoE
4	Operation	Implement the **Environmental Management System**.	Ensure the proposal is operated in accordance with 'Best Practice' and emissions to the environment are below relevant criteria. Ensure monitoring results are available to the community. Ensure Licence conditions issued by the DoE pursuant to Part V of the *Environmental Protection Act* are complied with at all times. Ensure environmental approval granted by the Minister for the Environment pursuant to Part IV of the *Environmental Protection Act* is complied with at all times.	Prior to commissioning	DoE
5	Waste Collection	Prepare and Implement a **Regional Waste Management Strategy** which addresses: • The advantages and disadvantages of a one-bin and multi-bin system for maximising recycling and homogenising the waste stream for the RRF; • Identifying which bin collection system is most suitable for the different RRF technology options; and	To maximise recycling rates, waste separation and consistency of waste for processing in the RFF	Prior to tender award	DoE

	Topic	Action	Objective	Timing	Advice
		• Community consultation and education.			
6	Bush Forever Site	The MRC will maintain the native vegetation on the eastern portion of Lot 505 Pedrick Road Neerabup, as delineated by Bush Forever Site 295.	To maintain the integrity and values of Bush Forever Site 295.	On going	Bush Forever Office
7	Air Emissions	Undertake an air emissions characterisation study (stack concentrations) for nitrogen and sulphur compounds, volatile organic compounds, metals and other pollutants that might pose a significant health risk.	To characterise air emissions from exhaust stacks.	During commissioning	DoE

Appendix 5

Summary of Submissions and
Proponent's Response to Submissions

Resource Recovery Facility Public Environmental Review

Summary And Response To Submissions

Prepared for: Mindarie Regional Council

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July 2004

DOCUMENT ISSUE AUTHORISATION

Issue	Rev	Date	Description	Checked By	Approved By
1		**6/5/04**	**Public Environmental Review – Response to Submissions**	**GMP**	**ASV**
2		**22/6/04**	**Public Environmental Review – Response to Submissions**	**GMP**	**ASV**
3		**7/7/04**	**Public Environmental Review – Response to Submissions**	**GMP**	**ASV**

BSD Consultants Pty Ltd

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1. INTRODUCTION

In October 2002, the BSD/Meinhardt JV (JV) referred a proposal to the Environmental Protection Authority (EPA) to construct a Resource Recovery Facility (RRF), pursuant to Section 38 of the *Environmental Protection Act, 1986*. The JV submitted an Environmental Scoping Report (ESR) to the EPA providing specific and general information on the form, content and scope of the Public Environmental Review (PER). The PER was subsequently prepared in accordance with the ESR and in compliance with Part IV (Environmental Impact Assessment) of the *Environmental Protection Act, 1986*. The PER described the proposal, the existing environment and the potential environmental impacts of the proposal.

The PER was released for an eight-week public submission period between 27 January and 23 March 2004.

2. SUBMISSIONS OVERVIEW

A total of seventeen submissions were received during the public submission period. A break-down of the submitters are provided below:

- Eight were from local government (Town of Cambridge, City of Joondalup, City of Perth, City of Stirling, Town of Victoria Park, Town of Vincent and City of Wanneroo) and regional council (Eastern Metropolitan Regional Council);
- The Stirling Greens;
- The project Community Engagement and Advisory Group;
- The Carramar Ratepayers Association;
- The Department of Environment and the Department of Health; and
- Four submissions from members of the public.

The submissions were summarised into their main points (aerial italic font) and divided into their appropriate section. The MRC has provided a response to each point (times new roman font) as follows.

3. GENERAL SUBMISSIONS

1. *The RRF is lessening individual responsibility, takes away the visual presence of our over-consumerism, does not contribute to education and research, and does not offer incentives.*

Response:
The role of the MRC has been laid-out in accordance with the Local Government Act. Its designated function is "the orderly and efficient treatment and/or disposal of waste delivered to a building or a place provided, managed or controlled for those purposes by the Regional Council." This essentially means that the MRC is responsible for treating and/or disposing of waste, while local governments are responsible for waste collection and transport to the RRF. There is also a joint responsibility between all levels of government, industry and the community to reduce the production of waste, and encourage recycling and resource recovery.

However, given the MRC's responsibility of treating and/or disposing of waste, it has sought to establish a RRF as a sustainable alternative to landfilling. But unlike landfilling the RRF options treat the MSW as a resource and produce a marketable compost product and in the case of digestion technology, 'green' electricity is produced and made available for sale on the electricity grid. The RRF will also significantly improve the amount of recyclables recovered in the region and create large greenhouse gas savings.

On top of this, the MRC intends to use the RRF to facilitate a general Community Education Strategy on waste issues, including the benefits associated with reducing waste production, and is currently considering a range of options to maximise the educational benefit associated with the facility. The RRF will therefore be a key feature in educating the public, minimising the production of waste, maximising recycling and diverting MSW from landfill.

2. *Each neighbourhood or council should manage their own waste and recycling. This would see many smaller scale composting facilities, which are more manageable and safer.*

Response:
Each member council of the MRC is responsible for managing the collection of waste within their boundary and then delivering this waste to the MRC (Tamala Park). It is the designated function of the MRC to treat and/or dispose of the incoming waste from the member council's. Therefore, the responsibility of the member councils and the MRC is clearly laid-out: the member councils manage the collection and transportation of the waste, and the MRC treats and/or disposes of that waste (these responsibilities have been determined in accordance with the Local Government Act). In light of this, the MRC is responsible for the approximately 278,000 tonnes of waste generated within its boundary each year. This quantity of waste, combined with the significant cost and planning issues associated with developing a RRF, means that it would be particularly inefficient and costly for the MRC to develop seven smaller-scale RRF's in each member council (which would involve obtaining seven environmental approvals and establishing a contract with each RRF operator). This RRF allows the MRC to treat up to 100,000 tonnes of MSW per year in a sustainable and efficient manner while achieving large economies of scale.

However, it should be highlighted that most regional councils in Perth recognise the benefit of treating waste as a resource and many are (to a varying degree) on the path towards establishing a RRF, with the Southern Metropolitan Regional Council having already established a RRF using the composting technology. This movement towards resource recovery means that Perth may in the future have a number RRF's treating MSW in an integrated approach to waste management. Thus, while each neighbourhood or council is unlikely to operate a RRF, there is the real potential for resource recovery processes to be established within many regional councils. The movement towards resource recovery processes will generate significant environmental advantages over landfilling, and will increase the recycling rate in the region compared to continuing with the status quo.

3. *The RRF is too large and too removed from the source to be relevant, useful or healthy.*

Response:
The size of the RRF allows it to efficiently process up to 100,000 tonnes of MSW per annum in a sustainable and cost-effective manner. It will be located within the MRC region and will process the municipal waste generated by households in the MRC member councils. The alternative to the RRF is landfilling at the Tamala Park landfill facility, which is also located in the MRC region.

The community engagement activity undertaken by the MRC shows that the community is supportive of the RRF process, with 99.3 percent of survey respondents indicating that resource recovery is a critical activity. Not only will the RRF divert up to 100,000 tonnes of MSW per annum from landfill, but it will significantly improve the recycling rate in the region, generate greenhouse gas savings compared to landfilling and assist the State Government in meeting its objectives laid-out in WAste 2020 and *Strategic Direction for Waste Management in Western Australia*. The PER also demonstrates through the health risk assessment and the site-specific air, odour and noise modelling that the RRF will not adversely impact on human health.

4. *A number of submissions relate to the site selection process. The main points in these submissions are that:*
    - *The site selection process is not valid and has not taken into account community concerns and environmental issues;*
    - *The RRF should be located at Tamala Park because this site has significant benefits over the Neerabup Industrial Area (NIA); and*
    - *The RRF should not be located in the NIA because it is a quiet rural area with bushland.*

Response:
The process of determining a site for the RRF began in 2001 and has involved considerable community engagement. The MRC has followed a transparent and robust process that has encouraged community feedback. Any comments or concerns from the community were openly documented, considered and responded to and they played a direct role in influencing the site selection process.

As noted in *Secondary Waste Treatment Plant – Site Assessment Study Update* (2001), consideration was given to the potential for siting the RRF at Tamala Park. However, locating the RRF at Tamala Park generated a number of concerns, and the City of Wanneroo formally expressed their opposition on 11 December 2001 in a letter to the MRC.

Following this, the MRC continued to assess potential sites for the RRF in association with a comprehensive Community Engagement Strategy. This Strategy sought community input about siting the facility through a number of forums (including meetings with community groups, public forums, information evenings, public displays, questionnaires and surveys) with the specific aim of involving the community in the decision-making process. This approach has meant that the community:

- Increased the number of sites that were assessed in the site selection process;
- Increased the number of selection criteria used in the site selection process, and altered the scoring of each criteria; and
- Determined the weightings for each of the selection criteria used in the site selection process.

Taking into account the community input, the *Site Selection Report* recommended the NIA for the RRF. As noted on page 4 in the PER, the NIA is currently a small industrial area. However, the NIA is zoned 'industrial' under both the Metropolitan Regional Scheme and the City of Wanneroo's Town Planning Scheme. This essentially means that the NIA is planned to be developed into a large industrial estate on a similar scale to Canning Vale. Having said that however, significant areas of bushland exist in the NIA. Indeed, the site that the MRC recently (conditionally) purchased for the RRF (Lot 505, referred to as site option 3 in the PER) contains a large Bush Forever Site. This Bush Forever Site is on the eastern portion of Lot 505 and will be protected and managed so that its conservation values are maintained.

5. *A submitter notes that Neerabup is not the most appropriate location for an industrial estate like that at Canning Vale.*

Response:
The proponent is not required to address regional planning issues (such as the location of industrial areas) in the PER. The purpose of the PER is to demonstrate to the EPA that there are no fatal flaws associated with the proposal, that each environmental issue can be adequately managed and that best endeavours have been made to minimise and avoid environmental impacts. The location of industrial areas are determined by the State's planning authorities and the NIA has been zoned 'industrial' under both the Metropolitan Regional Scheme and the City of Wanneroo's Town Planning Scheme. In addition, a structure plan was produced for the NIA and was open to community review. The RRF is a compatible with the Metropolitan Regional Scheme and the City of Wanneroo's Town Planning Scheme zoning and the intend land use in the *Neerabup Industrial Area Structure Plan* (Sinclair Knight Merz, 2002).

6. *The Neerabup Industrial Area Structure Plan identifies a number of additional studies required and/or issues to be resolved prior to subdivision or development occurring. These include servicing infrastructure issues and preparation of services concept plans and developer contribution arrangements, final surface levels (post-resource extraction), and environmental issues such as drainage, karst landform and Bush Forever Sites.*

Response:
The MRC notes this point and recognises that these matters need to be addressed prior to subdivision or development occurring.

7. *A number of submissions have questioned the appropriateness of having a RRF in a general industrial area when it will produce electricity (in the case of the digestion technology).*

Response:
This proposal is a permitted use in the NIA given its 'industrial' zoning under both the Metropolitan Regional Scheme and the City of Wanneroo's Town Planning Scheme, and the NIA structure plan indicates that it will be compatible with other operations in the area, such as the Laminated Veneer Lumber plant. The siting of the RRF in an 'industrial' zoned area is also comparable to the siting other already operating waste treatment facilities in 'industrial' zoned areas, for example the Canning Vale RRF and the Balcatta Waste Transfer Station. The PER has demonstrated through site-specific air, odour and noise modelling that both technology options will not produce a significant environmental impact and is therefore an appropriate use in a general industrial area.

8. *The PER falls short in not recommending the best technology and the best site. Having considered all technology options and sites the proponent should have indicated their preference. Because of this, some issues were not addressed in detail.*

Response:
The principle goal of this project is to achieve the most optimal waste management solution at the lowest environmental and financial cost. However, when this project was initially conceived in 2001, the resource recovery industry in Australia was still developing. The proponent therefore considered that to achieve its objective it would be beneficial to delay the tender assessment process for as long as possible. This approach has maximised the MRC's ability to gain from the emerging experience with assessing, selecting, building and operating RRF's in Australia. Indeed, since the calling of Expressions of Interest, the Canning Vale and Carins RRF's have been established, the Eastern Creek RRF has gained approval (and will be operational around the period proposed for the tender assessment process), and further experience has been gained through proposed and established RRF's on the east coast. The MRC has thus had the opportunity to gain knowledge through the establishment and operation of other RRF's in Australia.

The MRC's approach to the tender assessment process also meant that the community was not presented with a fait accompli. Rather, a range of technology options were put forward to the community and the Community Engagement Strategy has provided the community with the opportunity to gain knowledge about the social, economic and environmental costs of these

technology options before a final technology is selected. The MRC has actively sought to take into account community comment and concern on the technology options, and when the community engagement process revealed strong community opposition to the thermal technologies, they were removed from the tender assessment process.

Taking into account the above benefits of conducting the tender assessment late in the project, the PER has sought environmental approval for the composting and digestion technologies. The requirements stemming from this environmental approvals process will be incorporated into the tender document and will assist in ensuring that the best environmental outcome is achieved. The preferred tenderer and technology will be identified during the tender selection process (which will likely take place in mid-2004). The site of the RRF was selected following the publication of the RRF and a (conditional) purchase agreement has been concluded for Lot 505 (site option 3).

It should be pointed out however, that the approach adopted by the MRC has not limited the detail in the PER. The PER is a comprehensive document that has assessed the environmental impact of the RRF through site-specific air, odour and noise modelling and a health risk assessment. The contents of the PER complies with the EPA's scope of work.

9. *A number of submissions have noted that the PER considers the environmental impact of issues (such as air, odour and noise emissions) in relation to the nearest future residential properties, but does not take into account the impact on the premises located, and employees working, within the NIA.*

Response:
The PER uses site-specific air, odour and noise modelling to assess the likely RRF emissions against established EPA guidelines or regulations. Whereas the guideline used for the air emission assessment (the National Environment Protection Measure) measures concentrations in the background ambient environment, the guideline used for the odour emission assessment (*Assessment of Odour Impacts from New Proposals No. 47*) and the regulation used for the noise emission assessment (*Environmental Protection [Noise] Regulation, 1997*) specify the odour concentration and noise level at sensitive premises. In this case, the nearest sensitive premises are the future residential properties located south of Flynn Drive. The relevant odour guideline and noise regulation does not define other industrial premises and residential properties located within an industrial area as sensitive premises. To this end, the PER assessed the odour concentration and noise levels at the nearest residential properties south of Flynn Drive and found that the relevant odour guideline and noise regulation is met. The site-specific air emission modelling showed that the emission concentrations fell below the National Environment Protection Measure guideline within 50 metres of the exhaust stack. This approach is consistent with other environmental assessments carried-out throughout Australia.

10. The RRF should operate efficiently and be financially viable. Will the proponent be undertaking financial modelling for each technology, and will this be available to the community for review?

Response:
The MRC agrees with this point and aims to create a viable facility that meets all the requirements of the 'triple bottom line': social, environmental and financial. The MRC seeks to establish a RRF that satisfies the community, generates significant environmental benefits and is financially acceptable. Although financial matters are not a factor that is considered by the EPA during the environmental assessment process, financial modelling will be undertaken by the MRC during the tender assessment phase of the project. But given the confidential nature of the financial considerations, the financial data presented by each short-listed company will likely be limited to the MRC councillors.

11. Several submissions have questioned the environmental impact of an onsite materials recovery facility and greenwaste processing facility (similar to those at the Canning Vale RRF) and why this was not addressed in the PER.

Response:
This proposal does not involve a separate (onsite) materials recovery facility and/or uncovered greenwaste processing facility similar those at the Canning Vale RRF. Rather, all processing will be undertaken within a single facility, involving a combination of sorting upfront and throughout the composting and digestion processes. It is therefore inappropriate to assess the environmental impact of an onsite materials recovery facility and/or greenwaste processing facility when it does not form part of this proposal.

12. Will the tender specify the requirements of the RRF and how it should be designed to incorporate redundancy? What contingency plans will the successful tenderer adopt to maintain the environmental requirements laid-out in the PER?

Response:
The tender document will specify the requirements of the RRF and outline the roles and responsibilities of the successful tenderer. One of the tenderer responsibilities will be the establishment of a RRF that meets all of the environmental requirements stemming from this environmental assessment process. The successful tenderer will comply with the legally binding Environmental Management System, which will identify emergency response and contingency measures (TABLE ES1), and the legally binding conditions laid-out in the Works Approval and operating Licence. A legally binding contract will also exist between the MRC and the successful contractor, which will oblige the successful contractor to maintain the environment requirements identified in the PER. The facility will also undergo regular scheduled maintenance similar to other industrial facilities. However, the MRC will not specify the design of the RRF: it is considered that the short-listed tenderers are most suited (given their experience) to design the facility in line with the environmental and technology requirements, and the specifications in the tender document.

13. *The WAste 2020 document proposes measures for waste reduction at source. Does this have the potential to impact on the long-term sustainability of the facility?*

Response:
This proposal is consistent with the WAste 2020 document and represents a sustainable alternative to the current practice of waste disposal (i.e. landfilling). The WAste 2020 document recognises the need to recover and re-use the MSW resource through RRF's and has as a key outcome the development of "a thriving industry based on the recovery and re-use of resources from all of the community's waste streams" (WAste 2020, 2001: 9). The accompanying WAste 2020 Taskforce Recommendations document also has as a key outcome the establishment of "facilities which process the community's waste streams securely located in dedicated resource recovery precincts" (EPA, 2001: 7) and notes that "for Western Australia as a whole, and Perth in particular, it would be preferable if a range of [resource recovery] technologies were adopted" (EPA, 2001: 3). Overall, the WAste 2020 document and the accompanying WAste 2020 Taskforce Recommendations document both recognise the need to establish RRF's to recover and re-use MSW, rather than continuing with the current practice of landfilling. The MRC considers that this proposal is consistent with the WAste 2020 document and the accompanying WAste 2020 Taskforce Recommendations document.

14. *WAste 2020 outlines a policy that aims to have zero waste to landfill by 2020. The process outlined in the PER, however, shows that there are by-products which will potentially have to be diverted to landfill. How is the disposal of residuals to landfill reconciled with the WAste 2020 policy?*

Response:
The WAste 2020 document seeks to reduce waste production and outlines a vision of moving towards zero waste to landfill by 2020. As noted above, the WAste 2020 document proposes a range of measures and key outcomes, including the development of "a thriving industry based on the recovery and re-use of resources from all of the community's waste streams" (WAste 2020, 2001: 9). The accompanying WAste 2020 Taskforce Recommendations document also has as a key outcome the establishment of "facilities which process the community's waste streams securely located in dedicated resource recovery precincts" (EPA, 2001: 7) and notes that "for Western Australia as a whole, and Perth in particular, it would be preferable if a range of [resource recovery] technologies were adopted" (EPA, 2001: 3). But while the RRF will significantly reduce the amount of waste disposed to landfill and assist in fulfilling the WAste 2020's vision, it is likely that some residual will require landfilling. This outcome is acknowledged in the *Strategic Direction for Waste Management in Western Australia*: "while moving towards zero waste, we may still need to retain some landfill capacity. It may be necessary to accept waste that cannot be currently treated or recycled…" (Department of Environment, 2001: 9). This proposal will significantly reduce the amount of waste that is disposed to landfill and assist the State government in achieving its WAste 2020's vision.

15. The PER does not provide information on the layout of the RRF.

Response:
It was not considered necessary to have the final RRF layout to demonstrate to the EPA that the technology options meet established guidelines and standards: the site-specific air, odour and noise modelling carried-out for the PER used inputs consistent with previous operating experience and/or knowledge and all models showed that the technology options satisfy the relevant criteria. For this reason, the PER did not include specific information on the layout of the RRF. This information will be known once a successful tenderer has been identified and prior to facility construction additional site-specific air and odour emission modelling will be conducted (taking into account the RRF layout) to confirm the results in the PER.

16. The PER notes that this proposal is for Stage 1 of a resource recovery precinct that will treat around 100,000 tonnes of MSW per year. Will this RRF be expanded in the future to treat the remainder of the MRC's waste, how will the facility be expanded, and what will be the associated environmental impact?

Response:
The current proposal is for the establishment of a RRF to treat up to 100,000 tonnes of MSW per year. This proposal does not involve future RRF expansion or expansion to treat addition quantities of MSW. In light of this, it is not appropriate to assess the environmental impact of any facility expansion. Should the MRC seek to expand the RRF in the future then it will follow all requirements and if necessary refer the proposal to the EPA for assessment.

17. No details are given in the PER on what other operations will occur onsite in the future, whether recycling businesses will be encouraged to participate in the resource recovery precinct, and what their environmental impact will be.

Response:
The current proposal is for the establishment of a RRF to treat up to 100,000 tonnes of MSW per year. Thus, the PER has not considered, or sought environmental approval for, any other potential onsite operations. Future onsite activities are still speculative, although the MRC does seek an integrated solution to regional waste management issues and is willing to consider future opportunities to maximise resource recovery. Should the MRC wish to undertake any additional operations, or businesses seek to create a premise onsite, then the relevant proposals will be considered on their merits and if necessary referred to the EPA.

18. Why hasn't the PER considered the environmental impact of the nearby Laminated Veneer Lumber plant?

Response:
The environmental impact of activities relating to the Laminated Veneer Lumber plant or other premises in the NIA are not within the scope of the PER. The PER is only required to addresses the proposal, which is the establishment of a RRF to treat up to 100,000 tonnes of MSW per year.

19. *The PER does not articulate the MRC's desired or proposed waste collection system for the RRF.*

Response:
The MRC is responsible only for treating and/or disposing of waste within its region, and has no involvement in waste collection or choosing waste collection systems (the individual member council's choose their own waste collection system). On top of this, the Environmental Scoping Report did not require the identification of a particular waste collection system. Taking the above into account, the waste collection system is not part of the proposal and is not a factor that the EPA can consider during the environmental assessment process.

However, each member council of the MRC will consider as part of their ongoing operations the appropriate waste collection system for their future requirements. The individual member council's will take into account a number of factors when deciding on its future waste collection system, including community opinion, financial costs, and the ability to maximise recycling, waste separation and waste homogenisation. The Regional Waste Management Strategy (TABLE ES1) will also provide input into the decision-making process. Ultimately though, the comprehensive manual and mechanical separation process means that the technology options can effectively deal with any MSW stream regardless of whether it is sourced from a one-bin or multi-bin collection system.

20. *The PER does not attempt to compare the quality of recycled products produced by single-bin and multi-bin systems and it appears that the proponent does not value the separation of recyclables.*

Response:
The MRC is responsible only for treating and/or disposing of waste within its region, and has no involvement in waste collection or choosing waste collection systems (the individual member council's choose their own waste collection system). On top of this, the Environmental Scoping Report does not require the PER to consider the benefits of the different waste collection systems. Taking the above into account, the waste collection system is not part of the proposal and the different waste collection systems were not thoroughly assessed in the PER. However, by establishing the RRF the MRC will significantly contribute to increasing the amount of recyclables that are recovered in the region. The successful tenderer will also have a commercial incentive to ensure that the manual and mechanical separation processes capture the maximum amount of recyclables: the recovered recyclables will be on-sold and will assist in improving the quality of the compost product. The recovery of recyclables will be a major factor during the tender assessment process in line with Objective 3 of the Customer Partnership Agreement (CPA).

The MRC aims to maximise the amount of recyclables recovered in the region and is committed to establishing a Regional Waste Management Strategy that will "assess the advantages and disadvantages of a one-bin and a multi-bin system for maximising recycling and homogenising the waste stream for the RRF" (TABLE ES1). This Regional Waste Management Strategy will provide

input into the decision-making process for MRC member council's when they consider the appropriate waste collection system for their future requirements.

21. *A submitter suggests that the aim of the Regional Waste Management Strategy is to produce suitable feed for the RRF, not to maximise resource recovery by recycling as promoted in Strategic Direction for Waste Management in Western Australia.*

Response:
The Regional Waste Management Strategy will consider the advantages and disadvantages of a one-bin and multi-bin system in order to meet the objective "to maximise recycling rates, waste separation and consistency of waste for processing in the RRF" (TABLE ES1). Therefore, a key aim of the Regional Waste Management Strategy will be to maximise the amount of recyclables that are captured. It should also be recognised that the recovery of recyclables will also occur during the RRF process. The manual and mechanical separation process means that the recyclable items will be removed from the waste stream and recycled appropriately. The RRF will also recover and re-use other streams of waste in the MSW, including the large amount of organic waste which is currently being disposed to landfill. The benefit of the resource recovery and re-use offered by the RRF is acknowledged in the WAste 2020 document and the accompanying WAste 2020 Taskforce Recommendations document. The RRF will also assist the State government in meeting Outcome 5 in the *Strategic Direction for Waste Management in Western Australia*, which aims to have "a comprehensive and diverse range of sustainable treatment facilities exist to treat and recover resources from all waste streams and manage residuals in an environmentally acceptable manner" (Department of Environment, 2003).

22. *The proposal is premised on a RRF treating MSW. Why then is TABLE ES1 committing the proponent to consider the waste collection system after the preferred technology is chosen and implemented, given that MSW impacts on compost and recyclable quality?*

Response:
The Regional Waste Management Strategy will consider a variety of issues, including whether different waste collection systems have an impact on the compost quality and the recycling rates. **TABLE ES1** commits the proponent to prepare and implement this Strategy "prior to tender award". Thus, the Regional Waste Management Strategy will be undertaken before a short-listed company is awarded the contract and prior to any particular technology being chosen and implemented. Ultimately though, the comprehensive manual and mechanical sorting process means that both technology options can effectively deal with any MSW stream, and maximise the recovery of recyclables, regardless of whether it is sourced from a one-bin or multi-bin collection system.

23. The dominant criteria for evaluating waste collection processes should be the level of waste recovery and the quality and marketability of recovered recyclable material.

Response:
The MRC is responsible only for treating and/or disposing of waste within its region, and has no involvement in waste collection or choosing waste collection systems (the individual member council's choose their own waste collection system). On top of this, the Environmental Scoping Report did not require the PER to evaluate the different waste collection systems. Taking the above into account, the waste collection system is not part of the proposal and the different waste collection systems were not thoroughly assessed in the PER.

However as noted earlier, each member council of the MRC will consider as part of their ongoing operations the appropriate waste collection system for their future requirements. When deciding on their future waste collection system, the member councils will take into account financial costs and the ability to maximise recycling, waste separation and waste homogenisation. The MRC recognises that members of the community are also eager to put forward their comments on the appropriate criteria for ranking the various waste collection systems, and have those comments used as input into determining the most appropriate waste collection system. For this reason, the MRC has commissioned an independent telephone survey which will allow randomly selected residents in the MRC region to comment on their preferred waste collection system and criteria for ranking the waste collection systems. This independent telephone survey will commence in the near future.

24. Page 28 of the PER notes that "the waste collection method that is chosen will be done so following an investigation into the financial, social, environmental and technical benefits of each system." When will this investigation be carried-out and will this be available for community review?

Response:
As noted in TABLE ES1, the Regional Waste Management Strategy will be completed prior to tender award. Because some aspects of the Strategy are considered to be confidential the document will be limited to the MRC Councillors. However, randomly selected members of the community will have the ability to comment on their preferred waste collection system and criteria for ranking waste collection systems via an independent telephone survey that will be conducted in the MRC region in the near future.

25. *A number of submissions relate to the Environmental Management System (EMS) in TABLE ES1. The main points in these submissions are that the EMS does not:*
    - *Make mention of a monitoring plan for pathogens and dioxins and furans;*
    - *Clearly identify the objectives to be met;*
    - *Represent a risk management plan;*
    - *Identify any response procedures;*
    - *Outline the measures to be employed to manage an adverse environmental impact;*
    - *Identify the contingencies that would be in place for machine breakdown, cleaning and/or replacement; and*
    - *Represent an adequate monitoring plan.*

Response:
The PER is not in itself a document designed to provide specific management detail regarding each environmental issue. The PER is designed to demonstrate to the EPA that there are no fatal flaws, that each environmental issue can be adequately managed and best endeavours have been made to minimise and avoid environmental impacts. An assessment of environmental acceptability is made against established environmental standards or criteria, Government policy and established EPA positions.

The PER provides legally binding commitments that set-out the specific matters which various plans need to address as part of the Part V environmental approvals process (i.e. Works Approval and annual operation Licence). These must be prepared and implemented to the satisfaction of the Minister for the Environment. Preparation of the plans will involve consultation with all relevant stakeholders and the Environmental Management System will be released for a four-week public review period. Ultimately, the Environmental Management System will address the issues outlined in the PER and take into account community input received during the public review period.

26. *Who will have input into the creation of the Environmental Management System in TABLE ES1?*

Response:
Although the successful tenderer will be responsible for establishing the Environmental Management System in accordance with DoE requirements, the community will have the opportunity to comment on the Environmental Management System via the four-week public review period.

27. The recent odour problem experienced at the Canning Vale RRF needs to be explained as the facility has been referred to in the PER.

Response:

The Southern Metropolitan Regional Council (SMRC) has been in a process of testing and commissioning the Canning Vale RRF to ensure its successful operation, and compliance with the appropriate guidelines and plans. Discussions with the SMRC and the DoE indicate that during this testing period (in March 2004) the facility experienced an odour problem. The SMRC has been active in managing the odour problem: they contacted residents that they believed had been affected by the odour and ceased processing the feedstock, which has consequently reduced the odour levels by a significant amount. The SMRC has also been undertaking a rigorous testing process to identify the source of the odour problem. In short, there appears to be two inter-related problems:

- The negative pressure has not been working optimally. During some periods the negative pressure has forced too much dry air into the building and through the biofilter. This has dried the biofilter and destroyed desirable microogranisms. On other occasions, the negative pressure has not forced enough air into the building, meaning that air is not circulated and it subsequently escapes from the building without first being processed in the biofilter. The SMRC is currently testing the negative pressure system to determine its appropriate setting to maximise efficiency and ensure optimal biofilter operation; and
- The moisture system for the biofilter has not been working optimally, which has meant that some areas of the biofilter have been too dry and a preferential air flow stream has been created. This mitigates the normal odour reducing benefits associated with the biofilter process. The SMRC is now investigating measures to improve the biofilter moisture system.

The problems outlined above are essentially 'teething' problems that have been encountered as the SMRC has sought to identify the correct operating settings for the Perth climate. Similar problems were identified and solved at the Port Stephens RRF and the Cairns RRF during their testing and commissioning phase. Indeed, these problems at the Canning Vale RRF have been appropriately identified during the testing and commissioning phase and can be overcome through further testing in following weeks. These problems do not indicate a fault with the technology itself, which is highlighted by the many RRF's that are currently operating in Australia and overseas without any issue.

Ultimately, the experience gained by the SMRC during this testing and commissioning phase will be particularly valuable for the MRC and the short-listed tenderers. They have had the opportunity to witness the minor issues associated with establishing a RRF in Perth and can use this experience to further identify the most suitable operating settings for the Neerabup facility. The MRC will continue to liaise with the SMRC to gain knowledge from their experience and will usefully apply this during the construction and commissioning of the RRF. The MRC considers that the odour problems experienced at the SMRC does not adversely influence the environmental and technical acceptability of this proposal and expects that the knowledge gained from the Canning Vale RRF will assist in creating a successful facility in Neerabup.

4. THE PROPOSAL

28. *TABLE 3.2.2 lists the key characteristics of comparative RRFs referred to in the PER. The table does not state their climatic conditions, location, age or feedstock.*

Response:
These RRF's are located in Tracey (Canada), Perth (Western Australia), Cobb County (United States) and Eastern Creek (New South Wales), respectively. Their ages are outlined in the 'year of commissioning' row and all facilities treat MSW. While it is reasonable to expect that the climatic conditions will vary between each RRF, these facilities have only been used to provide further information on particular environmental factors. The monitoring and/or modelling results from these facilities (used to provide indicative estimates of the likely environmental impact at the Neerabup RRF) have been confirmed with site-specific air, odour and noise modelling that incorporates local topographical and meteorological conditions.

29. *Several submissions are concerned about the definition of 'composting' on page 7. These submissions basically regard the definition as inadequate and misleading.*

Response:
The introductory remarks on composting (page 7 of the PER) aimed to provide the reader with a general understanding of what composting is, and what happens during the composting process. The US EPA states that "composting is the controlled decomposition of organic materials, such as leaves, grass, and food scraps, by microorganisms. The result of this decomposition process is compost, a crumbly, earthy-smelling, soil-like material" (US EPA, 2004), while EcoRecycle Victoria similarly note that "composting is the breaking down of waste organic materials (food and garden waste) ... composting can convert food and garden waste into dark coloured soil (humus) in a matter of a few weeks" (EcoRecycle Victoria, 2004). These definitions of the composting process are considered relevant for the proposal.

30. Page 8 states that "if a batch of compost is contaminated it can be removed from the process." How will it be assessed that the compost is contaminated? Where will the compost that is contaminated be disposed?

Response:
There is ongoing and rigorous monitoring of the waste stream throughout the entire RRF process by the successful tenderer. The composting and digestion technologies involve highly controlled procedures and the waste stream will be regularly monitored for potentially harmful contaminants. If a batch of raw compost is identified as carrying such contaminants, at a level such that there is no market for the product, then it will be removed and likely disposed to landfill.

The MRC is committed to diverting the maximum amount of MSW from landfill and aims to raise awareness of the items constituting hazardous waste during the extensive Community Education Strategy that will be implemented for the RRF. In doing so, it is anticipated that the receival of hazardous waste will be kept to a minimum and there will be few experiences of raw compost contamination.

31. How is the leachate produced in the RRF process collected and managed?

Response:
Leachate is collected from a number of sources during the composting and digestion processes, including wash-down from the floor of the waste receival/pre-sorting area, periodic cleaning of the gas scrubbers that clean and humidify odorous air entering the biofilters, excess percolated fluid from the biofilters and excess sprinkler run-off from the aeration floor on which the compost is matured. The aeration floor run-off is collected in the gutters and then reticulated, along with leachate from other sources, to holding tanks where it is collected for re-use in the process.

Some short-listed companies propose to possibly introduce leachate at the front-end of the process to adjust the moisture content of the raw compost. The sludge dosing lines are used as the means of direct injection into the biodigesters alongside the raw waste stream. Leachate can also be used during the early stages of the compost process when moisture content needs to be adjusted to optimise the composting process.

32. The PER states that two of the short-listed companies propose the use of biosolids, with one in particular having animal manure input. The definition of biosolids on page 11 of the PER is inconsistent with those of the WA Guidelines for the Direct Land Application of Biosolids and Biosolid Products. The definition in the WA Guidelines only accepts stabilised organic solids produced by the treatment of sewage or septic. It is not clear where the biosolids and sewage sludge will be originating from and what type of material is to be sent to the site.

Response:
The discussion on page 11 did not intend to define biosolids. Rather, it sought to give a simplified description of what 'biosolids' will be used in the Bedminster process. The definition of biosolids in the *Western Australian Guidelines: Direct Land Application of Biosolids and Biosolid Products* is provided on page 95 of the PER.

It is likely that the RRF will use biosolids from a range of sources (one possible source is the Water Corporation). Should biosolids be unavailable to the facility for commercial or other reasons, other materials can act as substitutes: food processing resides, poultry industry materials and other animal manures are amongst the possibilities. Regardless, experience at currently operating RRF's show that the performance criteria outlined in the *Western Australian Guidelines: Direct Land Application of Biosolids and Biosolid Products* can be satisfied. Pathogen grading P1 can be consistently achieved; vector control has been confirmed at the Cairns RRF for hot climate conditions; and contaminant grading will be a function of the input feedstock characteristics.

33. Page 26 indicates that biosolids may be used in the RRF. No explanation has been given for the use and need of biosolids.

Response:
Page 26 of the PER notes that Bedminster and Worley may use biosolids in their composting technology. The primary reason why biosolids are used in the composting process is because of its high nitrogen content. The compost product needs a balance between carbon and nitrogen and in some cases the MSW from mobile garbage bins is low in nitrogen. Using biosolids in the process allows these short-listed companies to ensure that their compost product is of a high quality with the correct blend of carbon and nitrogen. Sewage sludge is the normal source of biosolids, although certain animal and vegetable sources can also be used.

34. Page 18 discusses the Global Renewables percolator and the associated dewatering process. No mention is made of what happens to the discharge from the process.

Response:
As noted on page 18 of the PER, organic material is conveyed into the percolator vessel and sprayed with recirculated process water in the presence of air (aerobic digestion). The organic material is gently agitated and moves from one end of the vessel to the other over approximately 2 days. This percolation process produces three products (or 'discharge streams'):

- Solid organic stream – conveyed to the composting hall to produce compost;
- Liquid organic stream – rich in hydrolysed organic nutrients (which is pumped to the anaerobic digestion vessel to produce biogas), and process water (which is recirculated back to the percolator). Recirculating the process water means that, after initial fill, the process is self-sufficient in water, requiring no external water source or effluent disposal; and
- Fine glass, sand, silt, ceramics, etc. – may be disposed in a Class I landfill.

35. Can the further information be provided on the desulphurisation scrubber (page 19)?

Response:
Global Renewables no longer proposes to use a caustic hypochlorite and sodium hypochlorite solution to remove H_2S from the biogas. Instead, a proprietary wet scrubbing system will utilise a flotation cell for the absorption of H_2S from the biogas stream into a scrubbing solution (chelated iron in an aqueous, mildly alkaline solution). The H_2S-laden scrubbing solution is regenerated to produce elemental sulphur under a redox reaction. Both scrubbing and regeneration occur within one piece of equipment.

36. It is suggested that not all of the short-listed companies have a proven record, that those with a proven record have not operated RRF's over a long period of time, and that the track record for Australian RRF's is not especially good.

Response:
The issue of process reliability and operating experience was a major consideration during the initial Expression of Interest phase. Each company was required to prove their scientific and financial capabilities, and prove their record in the resource recovery industry by operating a MSW RRF greater than 25,000 tonnes per year. Therefore, those companies that are short-listed for the project have a proven track record and the capability to operate the Neerabup RRF, and all have been in the waste management industry for many years.

Since the mid-1990s there have been a number of RRF's constructed in Australia. The short-listed companies have noted that none with 'operating' licenses, and built in response to local government tenders, have failed due to their technology. There are two Australian RRF's that have experienced extended commissioning due to construction and engineering issues, one plant (operating only on a 'research and development' licence) had its development funding ceased, and another privately funded

RRF has had an extended commissioning due to a decision to redesign the 'front-end' to improve performance parameters.

It is important to note that each of the short-listed companies offer proven commercialised technology, the ability to apply experienced engineering skill and expert design, and appropriately credentialed and experienced waste industry practitioners (many of whom have knowledge and/or experience in the European waste industry, where resource recovery technology has been used for many years).

37. *It appears from the PER that there is a willingness to deal with "any significant problems" (page 23) by diverting the MSW "to the Tamala Park landfill facility while any problem is being dealt with at the Neerabup RRF." (page 23)*

Response:
There is the possibility for any industrial facility to experience mechanical or unforseen problems. However, it is anticipated that these problems will be minimised due to the combination of the following:

- Proven technology – all the shortlisted companies for the project have technologies with a proven record in the resource recovery industry, and have the financial and scientific ability to deal with any problems as they arise;
- In-built redundancy – redundancy will be built into the facility, meaning that the RRF technology can handle any short-term problems;
- Regular facility maintenance – the successful tenderer will adopt a regular facility maintenance program. This will be laid-out in the emergency response and contingency measures in the Environmental Management System;
- Environmental Management System – the emergency response and contingency measures will be enforced as part of the Environment Management System and will address any significant problems that may arise; and
- Monitoring and reporting – there will be continual monitoring of the RRF and any relevant problems will be openly and transparently reported to the public.

Taking into account the above, there will be a wide-ranging system in place to minimise and deal with any mechanical or unforseen problems. Moreover, as Page 23 of the PER states, the diversion of MSW to Tamala Park is considered to be a "worst-case scenario".

38. *It appears from Figure 3.2.2 that site option 3 is only in part of the NIA zoned for 'industrial' use.*

Response:
Site option 3 is entirely located within the NIA area that is zoned 'industrial' under both the Metropolitan Regional Scheme and the City of Wanneroo's Town Planning Scheme. The eastern portion of site option 3 is Bush Forever Site 295 and will be fully protected and managed to maintain its conservation values.

39. Figure 3.2.10 shows under 'Recyclable and bulky items removed from the waste stream' materials that are unlikely to be removed from the tipping floor (i.e. before being fed into the 'primary composting process: waste fed into rotating drum'). The description of the process on page 11 indicates that what will be removed from the tipping floor are oversized or unacceptable articles that come in with MSW.

Response:
This point is acknowledged. The materials shown in the picture will be removed throughout the process following the biodigester phase and therefore an additional arrow should come from the 'primary composting process: waste fed into rotating drum' text box into the 'resource recovery and landfill' text box. However, some recyclable and bulky items will be removed following 'waste receival' and hence the arrow coming from the 'recyclable and bulky items removed from the waste stream' text box into the 'resource recovery and landfill' text box should remain.

40. Figure 3.2.10 shows that recyclable and bulky items are removed from the waste stream before the MSW enters the primary composting process. A submitter suggests that this is incorrect based on the process at the Canning Vale RRF where the bulky items are removed after the MSW enters the primary composting process and the eddy-current magnets and blowers remove the metal and plastic items after composting.

Response:
As noted on page 8 of the PER, waste is initially unloaded into the waste receival/pre-sorting area. It is in this area that bulky and hazardous items are removed. These items are either recycled (if possible) or disposed to an appropriate landfill.

Much of the recyclables will be collected following the biodigester phase and prior to composting. Trommels and screens (in the case of Thiess Services) separate the inorganic materials (such as recyclables) from the organic stream. The aim is to have a minimal amount of foreign matter in the raw compost during the composting process. Following the composting process, further screening takes place to remove small pieces of metal and plastic from the compost. This ensures that the compost product is of a high quality.

41. Figure 3.2.14 and Figure 3.2.15 show under 'Recyclable and bulky items removed from the waste stream' materials that are unlikely to be removed at that stage. The description of the process on page 13 and page 16 indicates that what will be removed are oversized or unacceptable articles that come with MSW.

Response:
The 'recyclables and bulky items are removed from the waste stream' text box incorporates the biodigestion and subsequent waste separation process. Therefore, those materials pictured in the text box will be removed at that stage.

42. The PER has not clearly identified how inorganic items (such as rocks) are removed from the stream after the biodigestion process.

Response:
The process for removing inorganic material is outlined on pages 8, 14 and 16. Following the biodigestion phase in the composting technology, the crude compost is transferred to the primary trommel by the conveyor. The fine material (such as soil and organic waste) falls through the trommel, while the oversize material (such as rocks) are collected and sent to landfill or sent through the biodigester phase again. The Global Renewables digestion technology also uses a trommel to remove the inorganic items. These items are subsequently forwarded onto a manual sorting station for separation from the process. The percolator also acts as a screening process, with fine sand, silt and ceramics passing through a grate at the bottom of the percolator for disposal as inert landfill material.

The Thiess Services digestion technology uses an integrally mounted screen fixed to the end of biodigester to screen the inorganic items exiting from the biodigester. Mechanical (vibrating) screens are also used in the process.

43. Page 16 states that a "front-end loader is used to extract bulky and hazardous materials." What "hazardous materials" are removed here?

Response:
The RRF will have a rigorous monitoring regime in place to identify any items that may contaminate the compost product. The waste that is unloaded in the waste receival/pre-sorting area will be examined and any large inorganic items will be removed, together with potentially hazardous materials. Examples of 'hazardous' items for the process include a battery or a drum containing liquid wastes.

The MRC recognises that it is impossible to stop householders from placing hazardous household waste in their mobile garbage bins. However, the MRC aims to keep the amount of received hazardous waste to a minimum by raising awareness of the items constituting hazardous waste during the extensive Community Education Strategy that will be implemented for the RRF. It will likely take a period of time for householders to become familiar with recognising household hazardous waste, during which time there will be careful upfront manual separation of the waste stream entering the RRF. However, evidence from the Canning Vale RRF shows that householders quickly become accustomed to identifying household hazardous waste and disposing with it accordingly.

44. Page 38 states that, "the entire RRF site will occupy 10 hectares". A submitter suggests that the plant area will only occupy 3 hectares of the site, although the entire site will be under the control of the contractor.

Response:

The MRC seeks to establish the RRF on the western portion of site option 3, which is approximately 10 hectares (the eastern portion is Bush Forever Site 295). Although the tender process has not been completed and the facility design plans have not been put together, it is likely that the RRF will occupy approximately 3 to 4 hectares.

5. COMMUNITY ENGAGEMENT

45. We acknowledge that the MRC has undertaken efforts to carry-out a community engagement process. However, was the community engagement effective and was the feedback from the community taken into account by the MRC for the site and technology selection process?

Response:
The MRC has been involved in extensive community engagement on the RRF since mid-2002 when it implemented a region wide (500,000 person) Community Engagement Strategy. The fundamental purpose of the strategy is to educate, consult, involve and empower the community. In doing so, the MRC has sought community input about specific aspects of the project, such as the RRF location and technology, and has documented, considered and responded to community concerns or comments.

The MRC recognises that the community has a high level of interest in the location of the RRF. It was for this reason that the MRC undertook a range of activities to receive community input, including meetings with community groups, public forums, information evenings, public displays, questionnaires, hotlines and surveys. This community input directly influenced the outcome of the site selection process in two ways: firstly, it was used by the MRC to better understand community concerns, and secondly community views about the criteria to be used in assessing the potential sites (collected through the extensive feedback mechanisms outlined above, and validated through formal research across the region) directly influenced both the criteria and their weightings in the site selection process. The application of these criteria and weightings led to the decision to site the RRF at Neerabup.

The comprehensive community engagement process has also meant that community feedback has influenced the technology selection process. Indeed, following an informal surveying of community opinion in 2003, the MRC commissioned a comprehensive independent telephone survey of 800 residents. The survey showed that the community did not support the development of the RRF using thermal technologies. In turn, the MRC resolved to limit the tender to the biological technologies (i.e. composting and digestion).

In summary, the Community Engagement Strategy has provided the community with significant opportunity to comment on the project and community input has directly impacted the site and technology selection process.

46. Page 30 states that, "all community members within the MRC region through the community engagement process" were consulted. A submitter asks how the views of the entire community could be represented when only one member of the public from each member council sits on the Community Engagement and Advisory Group?

Response:
The Community Engagement Advisory Group was established by the MRC in early 2003. The CEAG has a monitoring and community feedback role to assist the MRC in identifying community views and values on aspects of the project, to advise on how to encourage greater community involvement in discussions about the facility, and to advise on specific communication initiatives to improve community knowledge about the facility and what is proposed. It is an independent body comprising four people from the local community from around the proposed site, four people from the broader MRC regio and an independent chairperson.

In addition to the valuable role CEAG plays with the project, a number of other communication and feedback mechanisms have been implemented since mid-2002 to ensure that the views of the wider MRC community have been listened to. While much of the intensive planning and discussion happens with CEAG involvement and participation of the local community, this has been supported in two ways across the whole MRC region. Firstly, an ongoing program of communication through newsletter, local newspaper editorial coverage, local newspaper advertising, and through the MRC website ensures that all important information about the project is disseminated quickly, regularly and widely. In all of this material, people are invited to put forward their views or to ask questions about the project either by contacting the MRC directly, contacting the MRC through their website, or by making comment through a member of the CEAG.

Secondly, the MRC has followed a rigorous process of validating community viewpoints on critical issues (such as the site and technology selection, and community endorsement of the CPA) through formal market research across the region. This research is undertaken by a professional market research firm using large sample sizes and following rigorous professional standards to ensure validity, reliability and statistical confidence that the results represent the views of the whole region.

In combination, those activities outlined above in addition to the other activities conducted as part of the Community Engagement Strategy have allowed the views from all of the public to be heard by CEAG and the MRC.

6. FLORA AND VEGETATION

47. The PER needs to provide specific detail of site option 3, particularly maps showing the proposed development site with Vegetation Communities and Vegetation Condition of Lot 505. These maps should show the boundary of the Bush Forever Site, the footprint of the RRF, and the area of vegetation to be protected.

Response:
It is proposed that the RRF be established on the western portion of site option 3 (approximately 10 hectares). The eastern portion of site option 3 is Bush Forever Site 295 (approximately 10 hectares), which will be protected and managed.

The vegetation on the western portion of site option 3 has been predominately cleared due to previous onsite sand extraction activities. However, wherever possible any remaining vegetation will be retained. This matter will be addressed in the Construction Environmental Management Plan (TABLE ES1).

The footprint of the RRF is not known at this stage because the tender process has not been completed and the facility design plans have not been put together. The footprint of the RRF will not impact on Bush Forever Site 295.

48. The PER should state how the bushland will be protected and what permanent covenants or other mechanisms will be put in place to permanently protect the Bush Forever portion of Lot 505.

Response:
The MRC seeks to maintain the conservation values of Bush Forever Site 295 and assist in the "Government's commitment to conserve regionally significant bushland in Perth" (Department of Environmental Protection, 2000: 1). The MRC is committed to maintaining the Bush Forever status of the site by protecting its conservation value. The MRC does not propose any development on Bush Forever Site 295.

The Construction Environmental Management Plan and the Environmental Management System will address in detail the measures that will be taken to protect the Bush Forever site during the construction and operation of the RRF.

49. A submitter suggests that the flora survey was undertaken at the wrong time of the year to record some species and as a result, a more thorough investigation of flora species should be undertaken during the spring season.

Response:
The proponent acknowledges that the flora survey was undertaken at a sub-optimal time of the year to record some species. Indeed, page 43 of the PER states that there is the potential for orchids (and other additional species) to be recorded during the spring season. However, it is considered that there is little benefit in conducting an additional flora survey during the spring season following the MRC's resolution to locate the RRF at site option 3. This is because the western portion of the site is almost entirely cleared due to previous onsite sand extraction activities and there is therefore limited potential for orchids to be present. On top of this, the flora survey uncovered no DRF orchids in the area. The Bush Forever Site on the eastern portion of site option 3 will be protected and managed.

50. Should the 10 hectares on the western portion of site option 3 be entirely cleared then there will be no vegetation retained onsite and no buffer zones. There will be minimal distance between the RRF and the site boundary, which will expose the adjacent land owners and occupiers to a small separation distance.

Response:
Much of the western portion of site option 3 has already been cleared of vegetation due to previous onsite sand extraction activities. However, wherever possible any remaining vegetation on the western portion of site option 3 will be retained. This matter will be addressed in the Construction Environmental Management Plan (TABLE ES1).

The RRF will comply with all requirements in regards to the building set-back from the lot boundary. However, the proponent is not required to create a 'buffer zone'. The proposal is permitted in an 'industrial' zone and will be compatible with other operations in the NIA. The PER has also highlighted that the proposal does not have any significant air, odour and noise emission impacts on the nearest sensitive premises (which are the nearest future residents south of Flynn Drive). On top of this, the introduction of 'buffer zones' around facilities within industrial areas creates the possibility of the establishment of significantly larger industrial estates than the NIA.

7. TERRESTRIAL FAUNA

51. The statement that a "study was not performed on site option 3 because it is entirely cleared and absent of fauna" (page 48) is misleading as the eastern part of Lot 505 is within natural areas constituting part of Bush Forever Site 295. The PER needs to show how the fauna values will be maintained.

Response:
It is proposed that the RRF be established on the western portion of site option 3 (approximately 10 hectares), which is almost entirely cleared due to previous onsite sand extraction activities. The eastern portion of site option 3 is Bush Forever Site 295 (approximately 10 hectares) and will be protected and managed.

Nevertheless, the fauna survey conducted for the PER indicates that site options 1 and 2 present limited potential for significant fauna habitat and regionally significant fauna species. This conclusion is also considered to be appropriate for site option 3, particularly considering the absence of onsite vegetation (due to previous onsite activities). Thus, given the limited fauna habit and regionally significant fauna species, and the adequacy of nearby reserves (and the Bush Forever Site 295), the establishment of the RRF will not significantly impact on fauna values.

52. How will fauna be excluded from entering the RRF?

Response:
The RRF will be fenced on the site boundary and between the western/eastern boundaries of site option 3 to restrict site access for fauna. The Construction Environmental Management Plan and the Environmental Management System will address in further detail the design measures that will be taken to exclude fauna from entering the RRF during the construction and operation of the RRF.

8. AIR – GASES

53. The areas listed in TABLE 7.1.2 are too far away from the NIA to be of any significance.

Response:
It is a requirement of the EPA's Scope of Work (page 54) to describe the existing air environment. Thus, TABLE 7.1.2 was included in the PER to meet this requirement by showing the average concentration of sulphur dioxide throughout the Perth region drawing on information from the DoE's air quality monitoring sites. These monitoring sites have been chosen by the DoE and were not established in association with this proposal. The data in this section provides general information on the background air quality and is not required to be specific to the local area where the proposal is to be established.

54. Page 65 indicates that building wake effects for buildings not associated with the RRF will incorrectly increase the emission concentrations close to the facility. A submitter suggests that a house and a market garden with sheds/shade houses are located near to site option 3.

Response:
This point is noted and it is recognised that the market garden shed will likely have a building wake effect. The site-specific air emission modelling undertaken for the Thiess Services technology (using local topographical and meteorological data) did not consider building wake effects associated with the market garden shed or future buildings that may be located in the NIA. Having said that however, the air emission modelling indicates that the peak nitrogen oxide and sulphur oxide concentrations occur within 50 metres of the stack and that the maximum concentrations are well below the NEPM standard. This means that the building wake effects associated with the market garden shed (which is located around 200 metres from the centre of the eastern portion of site option 3) will not increase the concentrations to a level that may generate an exceedence of the NEPM standard. This will be confirmed through further site-specific modelling that the proponent is committed to undertake should a short-listed company proposing the digestion technology be successful in the tender process. This modelling will be based on final design layout and will take into account building wake effects.

55. A submitter notes their opposition to any burning on any selected site.

Response:
One of the key principles of the MRC's Community Engagement Strategy has been to seek people's concerns and comments, and to consider these in the decision-making process. The numerous activities involved in the Community Engagement Strategy has allowed the MRC to understand the community attitude on important issues, such a technology selection. Indeed, following an informal surveying of community opinion in 2003, the MRC commissioned a comprehensive independent telephone survey of 800 residents. The survey showed that the community did not support the development of the RRF using thermal technologies. In turn, the MRC resolved to limit the tender to the biological technologies (i.e. composting and digestion). Thus, community input has been used to remove the technologies that involve 'burning' of waste. The remaining biological technologies

produce a valuable compost product. In the case of the digestion technology, the biological process also creates a biogas that is used to create 'green' electricity.

56. *Page 63 states that, "TABLE 7.1.7 highlights that the biofiltration system has a high removal efficiency for air emissions. The results from the Cobb County RRF and 'other Bedminster plants indicate that the VOC and sulphur compounds emissions experiences by workers within the enclosed areas of the plant will be below the level of occupational concern.'" A submitter notes that TABLE 7.1.7 only deals with hydrogen sulphide and that no mention is made of the removal of VOC's.*

Response:
It is noted that TABLE 7.1.7 does not deal with VOC's. However, the reference to VOC's comes directly from a quote (in *Proposed Regional Resource Recovery Facility, Canning Vale: Consultative Environmental Review*) and in the context of the surrounding text, the focus of the quote is on sulphur compound emissions.

57. *The RRF should have zero VOC emissions so that there will be no human health risk.*

Response:
The important factor for assessing human health risk is not whether there are 'zero' emissions of VOCs. After all, VOCs are emitted from many common household products, including cleaning products, paints, cosmetics and polishes (see page 82). The discussion on page 70 has thus focused on whether the likely VOC emission concentration will generate a significant human health risk. The relevant literature on this matter indicates that VOC's are removed during the combustion of biogas to a level that is not a significant human health risk.

58. *A submitter notes that page 55 states, "Perth is on the threshold of having an air quality problem", despite "the area rarely witnesses particularly cold conditions on a prolonged basis (unlike in areas of the eastern coast of Australia or Tasmania). Even in the colder months, a combination of reasonably strong wind speeds and beneficial topographical conditions means that air emissions will be readily dispersed." (page 57). The submitter wishes to know what is the difference between the situation in Perth and the NIA?*

Response:
The quote referred to on page 55 of the PER comes from Section 7.1.3.1, which describes the existing regional air quality. It should be read in the context of the following sentence, which states that "the levels of photochemical smog in Perth during the summer months regularly exceed the NEPM." The main component of smog formation is ozone and it is consequently used to define smog levels. However, the ozone emissions from the RRF are considered to be negligible and would not contribute to the current smog problem in Perth.

The quote referred to on page 57 of the PER comes from a section that discusses meteorological conditions in Perth. This section does not deal specifically with photochemical smog (as was the case on page 55 of the PER), but it considers how the local meteorological conditions assist in the

dispersion of ambient pollutant concentrations in general. It notes that the reasonably strong wind speeds and beneficial topographical conditions assists in the dispersion of ambient pollution concentrations in general.

In summary, whereas page the quote on page 55 deals specifically with photochemical smog, the quote on page 57 discusses ambient pollution concentration dispersion more generally.

59. *Evidence should be given to support the following statement: "The concentrations at which these effects [from sulphur dioxide] occur are uncommon in the ambient atmosphere and would not be expected as a result of the proposed facility." (page 58)*

Response:
Examples of sulphur dioxide concentrations found in the ambient atmosphere are provided in TABLE 7.1.2. This table shows that the average and maximum sulphur dioxide concentrations at four monitoring sites around Perth are below the NEPM air quality standard. In addition to this, site-specific sulphur oxide dispersion modelling (using local topographical and meteorological conditions) indicates that the NEPM air quality standard is met within 50 metres of the stack (the nearest future sensitive premises in 685 metres from the RRF).

60. *Section 7.1 refers to US and local standards but reference should also be made to EU, German and Dutch standards.*

Response:
Section 7.1 considers the issue of air emissions from the RRF. This section makes particular reference to the ('local') NEPM ambient air standard because informal discussions with the EPA indicated that this would be the most appropriate standard for comparison with the air dispersion modelling results. Section 7.1 does make some reference to the German and EU standards (page 67 and 69, respectively), but these standards are not directly comparable to the NEPM standard: the German standard measures compound concentrations in the exhaust gas, while the EU standard only relates to combustion processes (and hence the EU standard is not directly applicable to the proposed technology options).

61. *Page 57 states that, "due to the prevailing wind directions in the area, it is expected that any air emissions will be primarily dispersed in a westerly/south-westerly direction in the morning and an easterly/north-easterly direction in the afternoon. This means that air emissions will be dispersed away from existing and future residents, who will be mainly located to the south of the proposed RRF." A submitter suggests that this statement is misleading as there are residents to the southwest of site option 3 that will be affected by the north-easterly winds.*

Response:
It is acknowledged that there are current residents to the southwest of the site option 3. However, this statement was intended to note two main points: firstly, that the air emissions will mainly be dispersed away from the nearest residents (which are the future residents south of Flynn Drive) because of the westerly/south-westerly wind direction. Secondly, that there will be a negligible impact on the nearest residential properties to the south-west of site due to their distance (approximately 1875 metres) and the air dispersion modelling results indicating compliance with the NEPM standard at 50 metres from the stack.

62. *It is incorrect to base the level of dispersion and intensity of air emissions solely on the colder period of the year. The higher temperature and moderate winds during the summer months means that air emissions would be recorded at extended distances from the RRF. Part of the NIA is also in a valley and the area does incur thermal inversions and cold conditions including frost over the winter periods.*

Response:
Meteorological conditions play a major role in determining the location and the degree of offsite impacts caused by the RRF. The air dispersion modelling has used the Hope Valley 1995 meteorological data file, which was developed by the DoE. This meteorological file contains a total of 365 days comprising 8760 hours of individual data points, thereby ensuring that both the cooler and warmer periods of the year are taken into account in the air dispersion modelling. A comparison of results using the Hope Valley 1995 data file and the Caversham 1994 data file showed negligible differences. The Caversham 1994 data file was used in most of the odour modelling and similarly, this was developed by the DoE and contains a total of 365 days comprising 8760 hours of individual data points.

63. *Reference is made to a Nolan-ITU study on page 62. However, there is no indication of the type or location of the RRF.*

Response:
Nolan-ITU studied nitrous oxide emissions from the Bedminster technology. This study did not focus on a specific RRF, rather it assessed the benefits of a generic Bedminster RRF that treats 100,000 tonnes of MSW per year.

64. *TABLE 7.1.8 indicates a high concentration of sulphur dioxide in biogas. The combustion of sulphur dioxide produces H_2SO_4 or sulphuric acid, and there are levels of cadmium, nickel, arsenic, mercury, and dioxins and furans that are also combusted and expelled into the atmosphere.*

Response:
It is not considered that the sulphur dioxide concentration in the biogas is particularly 'high'. Indeed, the National Society for Clean Air report calculates that this biogas concentration generates a sulphur dioxide emission concentration of 56 mg/m^3, compared to the EU standard for combustion emissions of 200 mg/m^3 (30 minute average). The site-specific air emission modelling (using local topographical and meteorological conditions) also shows that sulphur oxide emissions are well below the NEPM standard and the health risk assessment (Section 7.2.3.2) concludes that the digestion technology does not pose a significant risk to human health.

65. *The air dispersion modelling conducted in Section 7.1 uses different parameters. This means that the outcomes are not comparable.*

Response:
The objective of the PER is to demonstrate to the EPA that there are no fatal flaws in the proposal and that in this case, the air emissions from the digestion technology is acceptable when compared to the established NEPM ambient air quality standard. The PER has therefore sought to show that the digestion technology satisfies the NEPM abient air quality standard by conducting site-specific air emission modelling using local topographical and meteorological conditions. In addition to this, air emission modelling has been carried-out on another facility using the Global Renewables technology (located in Eastern Creek, New South Wales), which is considerably larger than the proposed RRF. While there were different topographical and meteorological inputs into the models, both results show that the likely air emissions are well below the relevant standard.

9. HEALTH RISK ASSESSMENT

66. How will the issue of employee and resident health be monitored and addressed?

Response:
This is a matter that will be addressed during the Part V environmental approvals process when the successful tenderer seeks a Works Approval for construction and an annual operational environmental Licence. This Licence provides ongoing legal conditions to ensure any pollution is avoided, reduced and managed to a level below acceptable criteria to ensure that the health of employees and residents are not adversely impacted. As part of the Part V environmental approvals process, a Construction Environmental Management Plan and Environmental Management System will be established and will address monitoring methodologies, and the public complaints and response procedures. The RRF will comply with the relevant occupational health and safety requirements that are mandatory for all other industrial premises.

67. Section 7.2 should also discuss the potential regrowth of pathogens in composts, particularly bacterial and parasitic pathogens. Management of recontamination and prevention of regrowth should form part of the proponent commitments in TABLE ES1.

Response:
This point is noted and the management of recontamination and prevention of regrowth will form a proponent commitment in the compost quality monitoring section of the Environmental Management System.

68. Section 7.2.3.1 makes reference to several different studies for composting periods in reactors and for the windrows in order for various bacteria to be destroyed, however no actual time periods for the composting process has been identified.

Response:
The composting process takes place over three to twelve weeks (including maturation), depending on the short-listed company.

69. Page 84 states that, "the comprehensive manual and mechanical separation process that will be employed at the proposed RRF will ensure that the majority of the trace elements will be removed prior to the composting process in both the composting and digestion technologies." A submitter suggests that this is incorrect because the Canning Vale RRF removes bulky items before the MSW enters the primary composting process, and metal and plastic items after composting.

Response:
As noted on page 8 of the PER, waste is initially unloaded into the waste receival/pre-sorting area. It is in this area that some items containing trace elements are likely to be removed, such as batteries, consumer electronic items, etc. (although the nature of the biodigestion process means that batteries are not broken).

However, other items that contain trace elements (such as light bulbs, lead foils, motor oil containers, and so on) will enter the biodigester. The 'oversized' items containing trace elements (usually greater than 30 millimetres) pass over the trommel and the ferrous and non-ferrous materials are subsequently removed. In the case of the composting technology, the 'undersize' items containing trace elements are processed with the raw compost, with some of the likely sources of trace elements being removed in the final screening. In the case of the digestion technology, the 'undersize' items containing trace elements undergo further metal recovery prior to the composting process. This process allows the final compost product to have low trace element contamination. This is confirmed by data from currently operating RRF's (provided on page 85 of the PER). Both the Bedminster and Worley technologies produce a compost product that contains trace elements at a level below the AS 4454-1999 standard.

70. It is of concern that heavy metals which may be present in the MSW (from batteries) will permeate into the compost because they typically leak when discarded.

Response:
It is acknowledged that there are instances where broken batteries leak in mobile garbage bins. The MRC will seek to minimise these occurrences and keep the amount of received batteries to a minimum by raising awareness of the items constituting hazardous waste during the extensive Community Education Strategy that will be implemented for the RRF. These strategies have been successful elsewhere and as noted above, evidence from operating Bedminster and Worley RRF's suggest that the final compost product contains trace elements at a level below the AS 4454-1999 standard.

A comprehensive compost quality monitoring program will be put into place to regularly monitor trace element levels and ensure that the compost meets the appropriate standard (TABLE ES1).

71. TABLE 7.2.6 indicates that the concentration of cadmium in compost is not far from standard values, considering the standard deviation commonly encountered for heavy metal concentration in composts (see TABLE 7.2.7). More cadmium concentrations are provided in TABLE 7.2.9.

Response:
This point is noted and the quality assurance procedures laid-out in the Environmental Management System will closely control and monitor the feedstock, process operating conditions and the final compost quality to manage the level of contamination in the compost product. Experience from operating facilities suggests that trace element contamination is not a significant issue and that the final compost product contains trace elements at a level below the AS 4454-1999 standard. Ultimately though, each batch of compost has the potential to be manufactured to a specification that conforms to maximum acceptable limits of environmental parameters appropriate for the product's intended use. The successful tenderer will have a commercial incentive to produce a high-quality compost product to meet market demands.

72. *It is of concern that heavy metals may be present in the compost at quantities below regulated standards but will over a period of time build-up in agricultural areas and enter the food chain.*

Response:
The various standards outlined in the PER 'grades' the compost according to its future use (see pages 93 and 94 of the PER). These standards have been developed by either State environmental regulatory agencies or Standards Australia, and are generally accepted as the appropriate current guidelines for monitoring and controlling the compost product. Each of these standards specifies the amount of contamination allowed in the compost so to not cause an adverse human health or environmental impact. For example, fulfilment of the AS 4454-1999 means that the compost product is suitable for unrestricted use, whereas fulfilment of NSW Grade B means that the compost product can have unrestricted use except for application on home lawns and gardens. Thus, the compost product will be directed to the appropriate market in light of its quality and satisfaction of a particular standard and/or grade. Meeting this standard and/or grade means that the product will not have a significant human health or environment risk for its intended use.

73. Page 104 notes that 68 vehicles per day will access the RRF. How many journeys per day does each vehicle make and how does this relate to human health risks.

Response:
Based on the assumptions outlined on page 24 of the PER, it is estimated that 68 vehicles per day will enter and leave the RRF each day, this equates to 136 vehicles movements (double). It should be noted however, that these vehicles are already collecting MSW in the MRC region and are only disposing of the waste at a different location: the RRF will not generate extra vehicle-related air emissions. The addition of 68 vehicles per day to Wanneroo Road and Flynn Drive will not create a significant increase in the human health risk associated with vehicle emissions in the area. The potential for a negative human health impact as a result of the addition of 68 vehicles per day to these

roads is negligible given that Wanneroo Road currently carries approximately 12,500 vehicles per day and Flynn Drive is forecasted to carry up to 20,000 vehicles per day within 20 to 25 years (Sinclair Knight Merz, 2002).

74. *A submitter puts forward that there is a current traffic problem on Flynn Drive and that the additional vehicles associated with the RRF will compound the problem. The submitter also notes that Flynn Drive needs an urgent upgrade.*

Response:
Flynn Drive is currently the principle southern east-west route into the NIA and carries approximately 2,100 vehicles per day, many of which are trucks associated with premises along Flynn Drive and in the NIA. Given the significance of the NIA in a regional context, the *Neerabup Industrial Area Structure Plan* predicts that Flynn Drive will carry up to 20,000 vehicles per day within 20 to 25 years (Sinclair Knight Merz, 2002). In contrast, this proposal involves the addition of only 68 vehicles per day. This small addition compared to the current and projected traffic levels along Flynn Drive suggests that the proposal will not significantly add to road congestion.

Because of the importance of Flynn Drive to the NIA, the *Neerabup Industrial Area Structure Plan* proposes changes to the road geometry of Flynn Drive at the intersection of Wanneroo Road (Sinclair Knight Merz, 2002). At this stage, the road improvements have not been finalized but it is understood that the upgrading of Flynn Drive will be funded by contributions from landowners in NIA. The Metropolitan Region Scheme also indicates that a road will link the Mitchell Freeway to Neerabup in the long term.

75. *Has the anticipated vehicle movements taken into account the vehicles used to transport biosolids?*

Response:
As mentioned on pages 24 and 104 of the PER, the anticipated vehicle movement of 68 vehicles per day does not take into account biosolids/manure that may be delivered to the RRF.

76. *The route(s) for vehicles associated with the RRF have not been defined in the PER.*

Response:
As noted earlier, the MRC member councils are responsible for managing the collection and transportation of waste to the MRC who is responsible for the treatment and/or disposal of that waste. Given these responsibilities, the MRC will consult with its member councils and request that they direct their drivers and/or waste collection contractors to access the NIA via major regional roads (such as Flynn Drive) and not use any residential streets, such as Tranquil Drive (except when the waste collection vehicles are collecting waste in that area).

77. *The PER has made no comment on the standard of the final compost product, or its potential market and competitiveness.*

Response:
As previously noted, the purpose of the PER is to demonstrate that the environmental factors can comply with established guidelines, standards and criteria. To this end, it is not necessary to define what standard the compost product will meet or identify its potential market in order for environmental approval to be granted. Therefore, at this stage the MRC has not identified a particular standard that the compost product will satisfy or sought to target a particular market. Having said that, the MRC aims to create a valuable compost product and this will be a major factor during the tender assessment process in accordance with Objective 4 of the CPA (**Appendix A**). The MRC will also establish an Environmental Management System that sets out the quality assurance procedures, including controlling and monitoring the feedstock and process operating conditions, and testing and recording the quality of the compost product. Each batch of compost will be manufactured to a specification that conforms to maximum acceptable limits of environmental parameters appropriate for the product's intended use. The successful tenderer will also have a commercial incentive to produce a high-quality compost product. In summary, the quality of the compost will be continually controlled and monitored, and the product will be directed to a market that is suitable to its quality.

78. *The MSW may contain large quantities of toxic substances coming from the excretion of medicine through body waste, and from cleaning and cosmetic products. It will be impossible to monitor the MSW collected from the household garbage bins, which will contain many of the above toxic substances.*

Response:
It is acknowledged in the PER that there are a range of items found in MSW that will potentially enter the RRF. This is because it is almost impossible to stop householders from placing hazardous household waste in their mobile garbage bins. However, the MRC aims to keep the amount of received hazardous waste to a minimum by raising awareness of the items constituting hazardous waste during the extensive Community Education Strategy that will be implemented for the RRF. On top of this, the manual and mechanical separation process that will be employed at the RRF will ensure that the majority of hazardous items will be removed prior to the composting process in both the composting and digestion technologies. This combination of education and upfront sorting means that the MSW will create a valuable compost product.

10. AIR – GREENHOUSE GASES

79. Page 37 states that, "landfilling of waste creates methane and leachate that has the potential to impact on the environment. The RRF technology options have positive impacts on GHG levels and no water is released to the environment." A submitter suggests that the digestion technology has the potential to impact on the environment because it creates methane and has water evaporation pits and that consequently, the full extent of GHG emissions has not been identified.

Response:
The proposal description in the PER (Section 3) does not indicate that water evaporation pits will be established and this is not proposed.

It is acknowledged that the digestion and composting technologies produce methane. However, these technologies emit significantly less methane to the environment than the current practice of waste disposal (i.e. landfilling). In the digestion technology, the methane that is produced in the process is entirely captured and combusted (in the biogas) to produce 'green' electricity (which can potentially be traded for Renewable Energy Certificates), saving the emissions generated by conventional electricity production methods. In the composting technology, the process minimises the generation of methane because of its aerobic nature. Further GHG savings are produced by the composting technology because the final compost product decreases the amount of inorganic fertilizer required for soil application, which in turn reduces energy-intensive fertilizer production and the associated GHG emissions. The outcome is that both technology options produce significant GHG savings when compared to landfilling. Indeed, the biodegrading waste at landfills emit methane at ground-level, while the non-biodegraded waste forms leachate or remains as recalcitrant material. Even those landfills that capture and flare the landfill gas are rather inefficient because only a fraction of the methane is recoverable (around 40 to 75 percent). In summary, the evidence presented in Section 7.3 suggests that the technology options generate large GHG savings over landfilling.

80. Only the GHG emissions for the process material of the RRF has been identified and it would appear that no allowance has been made for GHG emissions due to electricity consumption and the distance travelled by vehicles.

Response:
Each short-listed company has included various factors in their GHG calculations. For example, as noted on page 108 of the PER, the Thiess Services calculations took into account transport activities and methane emissions from residual disposal and end-of-life compost emissions. However, the GHG emissions from transport activities are not considered to be a major issue in this environmental factor given that the vehicles already collect waste in the MRC region and are only being diverted from Tamala Park to the NIA. It should also be pointed out that the electricity which is produced by the digestion technology is exported to the electricity grid. The electricity production process in the digestion technology is likely to produce GHG savings over the current method of electricity production in Western Australia.

81. The claims for reducing GHG emissions are doubtful because carbon entering compost instead of being recycled decomposes to carbon dioxide and methane in the ground as it would if placed in landfill.

Response:

As noted above, each short-listed company has included various factors in their GHG calculations. Page 108 of the PER states that the Thiess Services calculations took into account end-of-life compost emissions. The calculated Thiess Services GHG emissions (together with all other GHG calculations) represent significant GHG savings over the current practice of landfilling, even when end-of-life calculations are included. In any case, compost is usually applied to the upper soil layer and thus generally undergoes aerobic decomposition without producing significant quantities of methane.

11. AIR – ODOUR

82. The issue of odour needs to be addressed as it has the potential to affect the amenity of nearby residents. The possibility of odour being an issue needs to be communicated to the surrounding community in the event when odour from the RRF is detected.

Response:
Section 7.4 has considered the issue of odour emissions from the RRF. Each short-listed company conducted odour emission modelling using local topographical and meteorological conditions. The odour emission modelling showed that the odour emissions from the RRF will be below the EPA criteria at the nearest future residential property south of Flynn Drive. This outcome even applies to the "conservative" odour modelling which assumes that odour is emitted from the truck entrance doors between 0700 and 1900 hours, 7 days a week.

The Environmental Management System will outline the odour monitoring and reporting methodology, and identify the contingency measures that will be implemented should odour exceed the EPA criteria at residential properties. The Environmental Management System will also detail the public complaints and response procedures. The CPA (**Appendix A**) established between the community and the MRC also ensures that a complaint management system will be created and maintained with a defined response time (Objective 1, Clause 2).

83. The PER indicates that no further assessment of odour is required. If that is the case, can any odour be classed as safe, and will a monitoring plan be introduced?

Response:
The criterion in the EPA's Guidance Statement for acceptable odour impacts is an odour concentration equivalent to an intensity level of "distinct" averaged over 3 minutes, expressed as the 99.5 percentile of one year's data. An odour must be at or above the "distinct" level if it is to be recognised as an offensive odour and therefore possibly cause annoyance. It is certainly the case that odours above the "distinct" level may impact on the health and amenity of the nearby population. Page 109 of the PER indicates that prolonged exposure to odour generates undesirable reactions in people ranging from emotional stress to physical symptoms. Significantly though, the odour emission modelling conducted for the technology options shows that the predicted odour emission concentration is expected to be below the EPA criteria at the nearest future residential properties south of Flynn Drive. This means that the odour emissions from the RRF will have a negligible impact on human health and amenity. To ensure this outcome, an odour monitoring plan will be introduced in accordance with the Environmental Management System (TABLE ES1).

84. Odour modelling for the two technologies has not been based on consistent assumptions and different inputs have been used. The result is uncertainty in the modelling studies.

Response:
The purpose of Section 7.4 is to demonstrate that the odour emissions from the RRF will satisfy the relevant EPA criteria. To achieve this objective, each short-listed company carried-out odour emission modelling taking into account emission factors (such as odour concentration and flow rate) and local topographical and meteorological conditions. The emission factors were determined by each short-listed company based on their previous knowledge and experience in operating RRF's. Consequently, each odour emission model used slightly different inputs. Despite this, all modelling indicated compliance with the relevant EPA criteria at the nearest future residential properties south of Flynn Drive. It is considered that this approach creates greater certainty in the RRF because compliance with the relevant EPA criteria is demonstrated even though slightly different inputs have been used in each model and one model used the particularly conservative assumption that odour is emitted from the truck entrance doors between 0700 and 1900 hours, 7 days a week. Compliance with the relevant EPA criteria will be confirmed with additional odour emission modelling to be conducted after the tender selection phase. This odour emission modelling will take into account the final design layout and the expected process operating conditions.

85. The odour modelling must take into account that the RRF will operate 24 hours a day.

Response:
The period of time that the RRF operates each day is not a factor in the odour modelling. The main data input into the Ausplume computer model is the odour emission rate (determined by multiplying the volumetric flow-rate of air passed through the biofilter by the measured odour concentration), together with odour source data (e.g. height), topography and meteorology.

86. A number of submissions relate to the enclosed nature of the RRF. The main points in these submissions are that the:

- *RRF is not in fact enclosed because the doors are often kept open for waste receival and removal;*
- *RRF has a number of grilles that allow air to flow out of the building;*
- *Biosolids are delivered external to the building; and*
- *Compost maturation area is located in the open and not within a building.*

Response:
It is acknowledged that some fugitive emissions may come from open truck receival doors and grilles in the building structure. However, these emissions will be intermittent and episodic in nature as the buildings will be maintained under negative pressure (reducing air leakage), and all doors will be automated to further reduce air leakage and closed for as long as possible. In addition, waste will not be allowed to stockpile for long durations and it will be located away from doors to minimise fugitive emissions.

The PER has assessed the odour impact of the open truck receival doors in Section 7.4, where site-specific odour emission modeling was carried-out assuming that the truck receival doors are open between 0700 and 1900 for 7 days a week. The result of the odour modelling shows that even in the 'worst case' scenario where the truck receival doors are open for prolonged periods the odour emission concentration satisfies the relevant EPA criteria at the nearest sensitive premises south of Flynn Drive.

The odour emissions from the biosolids are considered to be negligible. The biosolids are transported to the RRF in sealed tankers and stored in enclosed vessels, which are vented to the biofilter to eliminate the emission of odours. This process ensures that the biosolids are contained and stored in an enclosed vessel at all times.

The compost maturation area is enclosed within a building.

87. *Page 21 notes that, "the specific operating characteristics of the biofilter will only be known once the successful tenderer has been selected and the biofilter has been designed." This matter needs to be raised when discussing the results of the odour dispersion modelling (Section 7.4).*

Response:
The odour emission modelling shows that each technology option can satisfy the relevant EPA criteria despite different inputs being used in the odour models and one model using the particularly conservative assumption that odour is emitted from the truck entrance doors between 0700 and 1900 hours, 7 days a week. It is also important to recognise that the inputs used by the short-listed companies are based on their previous experience and knowledge, and that the actual operating characteristics of the biofilter will therefore not be substantially different to that used in the modelling. In any case, additional odour emission modelling will be conducted after the tender selection phase to confirm the RRF's compliance with the relevant EPA criteria. This odour emission modelling will take into account the final design layout and the expected process operating conditions.

88. *It is stated on page 22 that, "the inlet air temperatures will be maintained within the approximate range of 10 ^{0}C to 48 ^{0}C: lower temperatures reduce the odour and air emission removal rates and higher temperature destroy desirable microorganisms." Has the odour modelling taken the lower temperatures into account?*

Response:
The odour modelling has been carried-out using the normal operating conditions for the RRF. The Bedminster, Thiess Services and Global Renewables processes use a wet scrubber prior to the biofiltration process that reduces the inlet air temperature to 40°C (which is around the optimum temperature for biological temperature). It is our understanding that the Worley process also has a similar inlet air temperature. Therefore, it is considered that the inlet air temperature will be around the optimum temperature ensuring maximum biological activity and odour minimisation.

89. It is stated on page 22 that, "the biofilter acclimation period is typically 2 to 6 weeks." Has the odour modelling taken into account this acclimation period and the affect of replacing biofilter media?

Response:
The odour emission modelling has not taken into account the biofilter acclimation period because this generally takes place during facility start-up when only a small amount of MSW is being processed. Thus, the limited capacity of the biofilter is sufficient to treat the small amount of MSW being processed.

The odour emission modelling also did not take into account the affect of replacing the biofilter media. As noted on page 22 of the PER, a biofilter is generally divided into three cells and only one cell is shut-down at a particular time to replace the media. The remaining cells have the ability to substitute for the off-line cell during the media replacement and the subsequent short acclimation period.

90. The PER has made no attempt to define an acceptable buffer distance.

Response:
It is not the requirement of the PER to define an acceptable buffer distance: the purpose of the PER is to demonstrate to the EPA that the proposal has no fatal flaws and that each environmental factor satisfies established environmental standards or criteria, Government policy and established EPA positions. This objective has been achieved through site-specific odour emission modelling which shows that the EPA criteria is met at the nearest future sensitive premises south of Flynn Drive. The RRF also complies with the generic buffer distance for "in-vessel composting with sophisticated odour control" of 150 metres laid-out in the *Guidelines for the Storage, Processing and Recycling of Organic Wastes (draft)* (DEP, 1997).

91. The layout of the RRF will have an impact on the proximity of the facility to the residents and therefore the odour impact.

Response:
The layout of the facility and its impact on environmental factors will be fully considered when the RRF is designed (which will take place following the tender selection process). However, it can be reasonably expected that the average odour source is the middle of the western portion of site option 3. This has been used as the location of the odour source in the odour emission modelling and it has shown that the RRF will comply with the relevant EPA criteria, even when particularly conservative assumptions are used. In any case, additional odour emission modelling will be conducted after the facility has been designed to confirm the RRF's compliance with the relevant EPA criteria. This odour emission modelling will also take into account the expected process operating conditions.

92. Page 111 states that, "if generic separation distances are met (as set out in the EPA Guidance Statement No 3)…" What are the generic separation distances?

Response:
The EPA Guidance Statement No 3 *Industrial Residential Buffer Areas (Separation Distances)* does not have a generic buffer distance for the RRF. It was therefore considered appropriate to undertake odour emission modelling in accordance *Assessment of Odour Impacts from New Proposals No. 47* (EPA, 2002).

93. It is a concern that open doors for deliveries, moderate winds and high temperatures will fail to keep the waste receival/pre-sorting area under negative pressure and result in high odour levels being generated.

Response:
The waste receival/pre-sorting area will be kept under negative pressure to minimise the odour emitted from the truck delivery doors. While the doors will be shut when there are no deliveries, it is recognised that there will be some air leakage. For this reason, Worley conducted site-specific air emission modelling using local topographical and meteorological conditions, and the particularly conservative assumption that odour is emitted from the truck entrance doors between 0700 and 1900 hours, 7 days a week. This modelling showed that the RRF will comply with the relevant EPA criteria at the nearest sensitive premises south of Flynn Drive even in the unlikely scenario that odour is regularly emitted from open truck entrance doors. In summary, while it is likely that the RRF will be kept under negative pressure for a large proportion of time, odour emission modelling shows compliance with the relevant EPA criteria in the 'worst-case' scenario of continually open truck entrance doors and no negative pressure.

94. On page 112 a footnote refers to "normal conditions" at Raymond Terrace. What are normal conditions for Raymond Terrace?

Response:
The word 'operating' should be inserted into this sentence so that it reads, "odour modelling for the Raymond Terrace (NSW) aerobic composting RRF found that the nearest residences (350 metres from the site) are not likely to detect odour from the RRF under normal operating conditions."

95. *The odour modelling did not appear to take into account prevailing wind directions (particularly from the north-east, east and south-west) and no reference has been made to temperatures.*

Response:
The odour emission modelling conducted for the PER was site-specific and took into account local topographical and meteorological conditions. Both the Caversham 1994 and the Hope Valley 1995 meteorological data files were used in the odour emission modelling. These meteorological data files were developed by the DoE and contain a total of 365 days comprising 8760 hours of individual data points, thereby ensuring that the prevailing wind directions and both the cooler and warmer periods of the year are taken into account.

96. Page 117 estimates the velocity of air through the door opening to be 0.5 m/s. Is this the velocity through each door opening and does the air flow inwards or outwards? The airflow velocity should not be an average but a highest average, at approximately 1.0 m/s.

Response:
The Worley modelling considers an "expected" and a "conservative" scenario. In the "conservative" scenario, the truck entry doors are continually open and there is no negative pressure. It is therefore estimated that the velocity of air flowing outward through the door opening is 0.5 m/s. This figure is derived by previous experience and knowledge, and it is considered a satisfactory input into the air emission modelling.

97. Section 7.4.3.3.4 of the PER claims that the composting technology does not generate any notable odour emissions. This is supported by statements in Section 7.1.4.3.5 that refer to the composting RRF at Canning Vale, which is only 400 metres from the nearest residents. Can these claims be made without access to actual site-specific odour monitoring data?

Response:
Section 7.4.3.3.4 of the PER does not refer to Section 7.1.4.3.5 and nor does it use that section (which deals with air emissions) to support the discussion surrounding odour emissions.

12. WATER – SURFACE WATER QUALITY

98. The water requirements in TABLE 3.2.4 for the Worley technology is 150,000 kL/annum. This is much higher than the other technologies and the reason is not obvious.

Response:
The Worley technology proposes to source approximately 150,000 kL per year of groundwater to periodically moisten the biofilters and the raw compost in the compost maturation hall, thereby ensuring that the compost product and the biofilter media is not contaminated by products in the water. The process water and biofilter leachate is collected, stored in a sealed holding tank, and re-used in the biodigesters.

99. A submitter suggests the use of an 'independent' source to monitor the groundwater for the life of the RRF.

Response:
Section 7.5 notes that the RRF will be fully enclosed with sealed floors and that the process water and stormwater will be kept separated at all times. On this basis, the RRF is not expected to pollute groundwater resources and no groundwater monitoring plan is proposed. However, the Environmental Management System will address the management of excess process water, contaminated stormwater runoff (the "worst-case" scenario) and clean stormwater runoff. The MRC is also committed to ensuring that the RRF satisfies Objective 9 and Objective 10 of the CPA, which seeks to have all emissions below acceptable levels without breaches of environmental conditions (see **Appendix A**).

100. The PER has failed to acknowledge the fact that existing residents only have access to bore and rain water. There has been no comment about whether this will change with future development.

Response:
While the MRC recognises that existing residents in proximity to the NIA only have access to bore and rain water, this fact does not have an impact on the conclusion that the RRF is not expected to pollute groundwater resources. The process and stormwater will be separated at all times and because of the enclosed buildings with sealed floors there is no opportunity for contaminated process water to mix with the stormwater or infiltrate into the ground and impact on groundwater quality. On top of this, the site-specific air emission modelling shows that the RRF air emissions meet the relevant criteria and will not have a significant impact on the quality of rain water. Based on this, there is no reason for the residents near to the NIA to discontinue using their bore and rain water tanks.

101. Page 124 states that there will be "separation and appropriate management of stormwater and process water". The PER has not clearly described this process.

Response:
As noted on page 123 of the PER, the stormwater from roofs, roads and hardstand areas will be collected and either used as process water or infiltrated to groundwater using normal drainage detention basins. The process leachate will be collected, stored and/or recycled and either re-used in the process or disposed appropriately. The process water will not be able to infiltrate into the ground or mix with stormwater because the RRF is fully enclosed with sealed floors. The management of the process water and stormwater will be addressed in the Environmental Management System (TABLE ES1).

102. The issue of groundwater quality is a concern because of the proximity of the site to the Gnangara water mound new boundary delineation.

Response:
The proposal is not expected to pollute groundwater resources or adversely impact the Gnangara water mound. This is because the process and stormwater will be separated at all times and the enclosed buildings with sealed floors means there is no opportunity for contaminated process water to mix with the stormwater or infiltrate into the ground and impact on groundwater quality. Furthermore, the proposal is consistent with the Gnangara Landuse Management Strategy (WAPC, 2001), a permitted use in a P3 source protection area and consistent with other industrial land uses that have and will locate in the NIA.

103. Page 123 states that, "no significant impact on groundwater quality is expected and therefore no specific management measures are proposed." What does "no significant impact" mean?

Response:
The RRF is not considered to pollute the groundwater to the extent that groundwater resources are adversely impacted.

104. A submitter asks the following questions:

- *What impact does drawing on 100,000 kilo litres per year have on the local groundwater?*
- *What guarantees will the Government make to ensure that the existing water table will not be affected by excess consumption, a reduction in bore water quality and an increase in bore water salinity and the mineral components in the bore water?*

Response:
The MRC recently negotiated the (conditional) purchase of Lot 505 and agreed to pay a fee to operate an existing licence to extract 50,000 kL of water each year. This licence was held by the vendor under a pre-existing arrangement with the State Government meaning that the vendor has previously had the ability to extract water using this licence. The MRC also has the option to purchase, prior to October 2013, an additional 50,000 kL of water each year. Therefore, the RRF has the opportunity to use existing licences to potentially extract up to 100,000 kL of water each year.

It is also important to note that the Waters and Rivers Commission has indicated that approximately 2,600,000 kL of water per year has been allocated for extraction from the Neerabup sub-area (bounded by Wanneroo Road, Wattle Avenue, Pinjar Road and Flynn Drive) via licences such as that acquired by the MRC. The Waters and Rivers Commission determines the appropriate amount of water extraction for a particular sub-area taking into account wetland area, rainfall and bore usage, with the objective to have a negligible impact on the environment. It is therefore considered that the extraction of 100,000 kL per year (using already existing licenses) is not likely to have a significant impact on groundwater quality, particularly given that 2,600,000 kL per year is considered an appropriate extraction rate for the Neerabup sub-area.

The MRC is not in a position to comment on how the Government may guarantee groundwater quality in the area. However, as noted above the amount of groundwater allocated for extraction in the Neerabup sub-area is determined so that there is a negligible environmental impact.

13. NOISE

105. Does the noise modelling take into account the departure of vehicles from the RRF?

Response:
The noise modelling conducted for the PER takes into account the vehicles entering and exiting the RRF. This noise modelling shows that the additional traffic associated with the RRF will increase noise levels received at residences along Flynn Drive by 1.1 dB(A). The *Neerabup Industrial Area Structure Plan* projects that Flynn Drive will carry approximately 20,000 vehicles per day within 20 to 25 years (Sinclair Knight Merz, 2002). In this scenario, the additional traffic associated with the RRF will increase noise levels received at residences along Flynn Drive by 0.2 dB(A). Based on these results, the noise emissions from the vehicles associated with the RRF will comply with regulatory requirements at residences located south of Flynn Drive.

106. The noise modelling has not taken into account the vehicle noise emitted on the entire route to the RRF.

Response:
The vehicles disposing of MSW to the RRF will be coming from throughout the entire MRC region. Given this, each vehicle may take a slightly different route to the major regional roads (such as Flynn Drive) that allow entry into the NIA. It is therefore impossible to model the noise emitted from vehicles on every route to the RRF. The PER has thus concentrated on the vehicle noise emissions along Flynn Drive, which is the main entrance point into the NIA. This modelling has shown that the noise emissions from the vehicles associated with the RRF will comply with regulatory requirements at residences located south of Flynn Drive. It should also be recognised that the establishment of the RRF will not increase the number of vehicles already collecting waste in the MRC region: the current waste collection vehicles will be diverted from the Tamala Park landfill facility to the RRF.

107. The noise modelling must take into account that the RRF will operate 24 hours a day.

Response:
The noise modelling predicts the likely noise emissions during the day (see FIGURE 7.6.1 and FIGURE 7.6.3) and night (see FIGURE 7.6.2 and FIGURE 7.6.4). The biofilters will operate 24 hours a day.

108. The assumed orientation of the RRF and the assumed mitigation measures for the noise modelling have not been included in TABLE ES1 or listed as an environmental requirement.

Response:
TABLE ES1 outlines the proponent commitments, particularly proposed monitoring and management commitments. In light of this, it is not appropriate to detail noise modelling assumptions in TABLE ES1. Rather, the noise modelling assumptions have been presented in Section 7.6.4.3. The proposed management, monitoring and reporting of noise emissions from RRF will be addressed in the Construction Environmental Management Plan and the Environmental Management System.

109. Has the PER modelled noise emissions assuming that the truck entrance doors are open?

Response:
The noise emission modelling was carried-out assuming that the receival doors were closed. However, with the receival doors located on the northern side of the building, the barrier effect of the building itself would more than compensate for noise emissions from open doors. Therefore, in terms of noise received at the nearest sensitive residences south of Flynn Drive, having the receival doors open or closed does not affect the results of the modelling. Nonetheless, the issue of noise emissions will be further considered during the design of the RRF and appropriate measures will be taken to minimise the noise received at the nearest sensitive premises south of Flynn Drive.

110. A submitter comments that if the RRF was not located at the centre-point of site option 3 then the noise modelling guidelines may not be met.

Response:
The location of the facility and its impact on environmental factors will be considered when the RRF is designed (which will take place following the tender selection process). However, it can be reasonably expected that the average noise source is the middle of the western portion of site option 3. This has been used as the location of the RRF in the noise modelling, which shows that both technology options will comply with the *Environmental Protection (Noise) Regulations, 1997*. The Constructional Environmental Management Plan and the Environmental Management System will address noise management issues and the ongoing monitoring and reporting of noise emissions.

111. TABLE E2 shows that the noise level immediately outside the RRF is 102 dB(A). This is not depicted on FIGURE 7.6.3 and FIGURE 7.6.4.

Response:
The predicted noise level for the RRF is shown in FIGURE 7.6.3 and FIGURE 7.6.4 through a series of colours. The blue shaded area around site option 3 represents the area where noise levels are predicted to be greater than 44 dB(A).

112. FIGURE 7.6.3 and FIGURE 7.6.4 are unrealistic because it shows noise levels reducing from 102 dB(A) to less than 44 dB(A) in a distance of 300 metres.

Response:
The noise emission modelling was carried-out in accordance with DoE requirements using an environmental noise modelling computer program ("SoundPlan" Version 6.0).

14. DUST EMISSIONS

113. Page 132 refers to dust monitoring. This should be monitored near to the RRF, not 16 kilometres away.

Response:

It is a general requirement of a PER to describe the existing air environment. Thus, Section 7.7.3 was included in the PER to meet this requirement and identify the existing dust concentrations in the background environment using information from the DoE's Duncraig air quality monitoring site. The location of this monitoring site was chosen by the DoE and it was not established in association with this proposal. The Duncraig air quality monitoring site was considered to be the most appropriate reference site for obtaining information about dust concentrations in the background environment given its close proximity to the NIA and their similar distances to the ocean.

15. PUBLIC RISK & SAFETY

114. Section 8.2 mentions onsite chemical storage. A submitter notes their desire to not have any chemicals stored onsite, which would make this a similar facility to Brookdale.

Response:
Section 8.2 identifies the type and amount of chemicals that will likely be stored onsite for the day-to-day operation of the RRF. These chemicals will be stored and handled in an appropriate manner, consistent with modern occupational health and safety requirements, and the requirements laid-out in *Explosives and Dangerous Goods Act, 1961*, and are in small enough quantities to not represent a significant off-site public risk. This storage of small amounts of chemicals takes place in many industrial facilities and RRF is not comparable to the Brookdale Liquid Waste Treatment Facility, which was designed to receive and process hazardous waste.

16. VISUAL AMENITY

115. *Page 142 indicates that the maximum building height will not exceed 25 metres for all technology options. Is this height within the City of Wanneroo building guidelines for the NIA?*

Response:

Planning issues will be considered when the proponent seeks planning approval from the City of Wanneroo (by submitting a Development Application). However, a maximum building height of 25 metres is consistent with other premises in industrial areas.

17. SUMMARY

A total of seventeen submissions were received during the PER eight-week public submission period for the proposal to construct a RRF in the NIA. This report has summarised the main points raised in those submissions and divided each submission point into their appropriate section. The MRC has in turn responded to the main submission points. In doing so, it is anticipated that the questions raised by the submitters have been responded to appropriately and any points in the PER clarified.

This process has also allowed the MRC to further recognise issues of community interest and the MRC notes the general desire among some submitters to have the ability to influence the Environmental Management System, which is a proponent commitment outlined in TABLE ES1. Given this, the proponent will release the Environmental Management System for a four-week public review period and has submitted a revised Summary of Proponent Commitments table below.

It is important to bear in mind that the PER is designed to demonstrate to the EPA that the proposal has no fatal flaws, that each environmental issue can be adequately managed and that best endeavours have been made to minimise and avoid environmental impacts. In light of this and taking into account:

- The main submission points and the MRC's responses;
- The outcome of the thorough environmental assessment conducted in the PER, including a flora and fauna survey, a health risk assessment and site-specific air, odour and noise emission modelling;
- The benefits of the proposal, such as reduced greenhouse gas emissions, the production of valuable resources from MSW (i.e. composting and/or 'green' electricity, and recovered metals, glass, plastics and paper), increased recycling rates in the region and assisting the State government in meeting its WAste 2020 and *Strategic Direction for Waste Management in Western Australia*; and
- The potential negative impacts associated with the current waste disposal method (landfilling)

it is considered that the proposal is environmentally acceptable and meets the EPA's objectives. Moreover, seen its broader context, in light of the benefits outlined above and relative to the potential environment impacts associated with landfilling, the establishment of the RRF is likely to result in a net environmental benefit.

TABLE ES 1 Summary of Proponent Commitments

	Topic	Action	Objective	Timing	Advice
1.	Construction	Prepare and Implement a **Construction Environmental Management Plan** which addresses: **Design:** • Measures to limit vegetation clearing; • Water supply; • Drainage design; • Evaluate and where practical implement options to harvest and use stormwater; and • Noise management measures. **Construction:** • Works Approval conditions • Measures to limit vegetation clearing; • Construction noise and vibration; • Dust management; • Noise management; • Fire management; • Movement, storage and refuelling of machinery during construction; • Storage and handling procedures for all construction materials; • Description of environmental standards, safeguards and emergency responses; • Licensing requirements and approvals; • Public relations and communication; • Monitoring; and • Progress and compliance reporting.	To ensure that the environmental requirements are integrated and built into project design. Ensure that construction impacts (direct and indirect) are minimised. Ensure Works Approval conditions issued by the DoE pursuant to Part V of the *Environmental Protection Act* are complied with at all times. Ensure environmental approval granted by the Minister for the Environment pursuant to Part IV of the *Environmental Protection Act* is complied with at all times. Minimise the abstraction and use of groundwater.	Prior to site preparation work commencing.	DoE

	Topic	Action	Objective	Timing	Advice
2.	Operation	Prepare an **Environmental Management System** which addresses: **Air Emissions** • Monitoring air emissions in accordance with Licence conditions issued pursuant to Part V of the Environmental Protection Act. **Compost Quality Monitoring:** • Compost criteria (including contaminants); • Method of compost monitoring; • Waste collection method; • Waste pre-sorting, compost screening and separation methods; • Monitoring (OHS and environmental); • Batch/quality control measures; • Compatibility of compost with end use; • Contingency plan for non-conforming compost; and • Reporting. **Odour Monitoring:** • Proposed criteria; • Odour monitoring methodology; • Odour control measures; • Monitoring and maintenance of odour control equipment; and • Reporting. **Surface Water Quality:** • Stormwater treatment and disposal; • Separation of water stormwater and process water; • Management of excess process water; • Maintenance of stormwater equipment, treatment and disposal equipment; and • Spills management and clean-up procedures.	Ensure the proposal is operated in accordance with 'Best Practice' and emissions to the environment are below relevant criteria. Ensure monitoring results are available to the community. Ensure Licence conditions issued by the DoE pursuant to Part V of the *Environmental Protection Act* are complied with at all times. Ensure environmental approval granted by the Minister for the Environment pursuant to Part IV of the *Environmental Protection Act* is complied with at all times.	Prior to commissioning	DoE

	Topic	Action	Objective	Timing	Advice
		Noise Monitoring: • Proposed criteria; • Noise monitoring methodology; • Noise control measures; and • Reporting. **Emergency Response and Contingency Measures:** • The risks associated with operation of the RRF; • Method of monitoring the risks; • The measures to control risk; • Emergency response and contingency procedures; • Public complaints and response procedures; • Public relations and communication; and • Reporting. **Review and Improvement of Environmental Management System:** • Public consultation; • Review period and innovation process; • Education and training of employees; • Procedures and practices; • Allocation of employee roles and responsibilities; and • Reporting and communication mechanisms.			

	Topic	Action	Objective	Timing	Advice
3	Operation	Release the **Environmental Management System** for a four-week public review period.	Ensure that the community is consulted and given the opportunity to provide input into the Environmental Management System.	Prior to commissioning	DoE
4	Operation	Implement the **Environmental Management System**.	Ensure the proposal is operated in accordance with 'Best Practice' and emissions to the environment are below relevant criteria. Ensure monitoring results are available to the community. Ensure Licence conditions issued by the DoE pursuant to Part V of the *Environmental Protection Act* are complied with at all times. Ensure environmental approval granted by the Minister for the Environment pursuant to Part IV of the *Environmental Protection Act* is complied with at all times.	Prior to commissioning	DoE
5	Waste Collection	Prepare and Implement a **Regional Waste Management Strategy** which addresses: • The advantages and disadvantages of a one-bin and multi-bin system for maximising recycling and homogenising the waste stream for the RRF; • Identifying which bin collection system is most suitable for the different RRF technology options; and • Community consultation and education.	To maximise recycling rates, waste separation and consistency of waste for processing in the RFF	Prior to tender award	DoE
6	Bush Forever Site	The MRC will maintain the native vegetation on the eastern portion of Lot 505 Pedrick Road Neerabup, as delineated by Bush Forever Site 295.	To maintain the integrity and values of Bush Forever Site 295.	On going	Bush Forever Office

	Topic	Action	Objective	Timing	Advice
7	Air Emissions	Undertake an air emissions characterisation study (stack concentrations) for nitrogen and sulphur compounds, volatile organic compounds, metals and other pollutants that might pose a significant health risk.	To characterise air emissions from exhaust stacks.	During commissioning	DoE

18. REFERENCES

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APPENDIX A

Customer Partnership Agreement

MINDARIE REGIONAL COUNCIL

NEERABUP RESOURCE RECOVERY FACILITY
COMMUNITY PARTNERSHIP AGREEMENT

The *Community Partnership Agreement* represents a commitment by Mindarie Regional Council (MRC) to work with the community to ensure that its issues and concerns are understood and acted upon. The Community Partnership Agreement is a summary document that identifies the agreed outcomes and impacts of the project relative to the social issues.

The Mindarie Regional Council is committed to the community consultation process and as part of that process has initiated a Community Partnership Agreement that aims to:

- Identify the social issues associated with the Neerabup Resource Recovery Facility project; and
- Show how these issues will be addressed.

The Community Partnership Agreement is a summary document that identifies the agreed outcomes and impacts of the project relative to each of the social issues. The specified outcomes and impacts then become performance standards against which the success of the project can be measured.

Mindarie Regional Council has a number of basic requirements for the proposed facility. These are aspects that are fundamental to the project and, in effect, are not open to negotiation. The basic requirements are:

- The site for the facility is within the Neerabup Industrial area
- A resource recovery facility will be established, and needs to be operational by late 2005
- The facility will have the following minimum requirements: compliance with environmental standards, economic feasibility, and achieve a positive social impact.

Everything else in relation to the proposal is open for public discussion and contribution.

Towards the end of 2003, the MRC will be preparing tender documents to allow tenders to be called for the construction of the proposed resource recovery facility within the Neerabup Industrial Area. To achieve the desired position of broad community support for the facility it is important that community input is obtained in the development of the tender documentation. The tender documents will specify the conditions under which the contractor will have to build and operate the facility. The Community Partnership Agreement is a powerful opportunity for the community to ensure that its issues and concerns are understood and acted upon.

As well as influencing the tender process the Community Partnership Agreement will be used throughout the life of the project to track the performance standards against which the success of the project can be measured. The actions that need to be taken to achieve the required outcomes will be reflected in detail in other key documents associated with the project. These documents will include:

- The Public Environmental Review and associated environmental approval conditions;
- The Environmental Works approval;
- The Town Planning Development approval;
- The building license;
- The environmental license;
- The environmental monitoring plan; and
- The project contract with the facility operator.

The Community Partnership Agreement will therefore be a key over arching document, which will fundamentally influence the facility's design and operations.

In preparing the Community Partnership Agreement the Mindarie Regional Council conducted two public workshops to identify the *values* that people thought were important to preserve and the *issues* they thought would need to be addressed by the MRC to ensure these *values* are maintained.

Values

In summary the community valued the semi-rural lifestyle, where they are close to the country and close to the city. The area's bushland and wildlife was highly valued because it contributes to the amenity, character and naturalness of the area. Low traffic volumes and a quiet neighbourhood were also seen as valuable. It was felt the area had a good community spirit and atmosphere.

Issues

In relation to the Resource Recovery Facility the community is concerned the RRF may effect these values and considered that the following issues should be addressed:

- Increased road traffic noise;
- Contamination of soil and groundwater;
- Air pollution and health effects;
- Odour; and
- Bushland loss.

Objectives and Outcomes

In considering the values and issues, the community identified a number of objectives and outcomes that would need to be achieved to maintain community support:

Objective 1 – MAINTAIN STRONG COMMUNITY INVOLVEMENT AND COMMUNICATION THROUGHOUT THE LIFE OF THE PROJECT

Outcomes:

1. The continued operation of the Community Engagement Advisory Group to oversee and advise on the community engagement process for the project throughout its life.
2. The maintenance of clear channels of communication including a complaints management system with a defined response time.
3. Regular appropriate communication bulletins.
4. The facility will be open for tours and inspections by community groups.
5. Regular reporting to the community on key performance indicators after commissioning.

Objective 2 – PROVIDE AN EDUCATION FACILITY

Outcomes:

1. An appropriate resource recovery and environmental education facility will be established on site.
2. Regular tours by school groups and community groups will be encouraged.
3. The MRC to promote minimisation and separation of waste through their member councils.

Objective 3 – MINIMISE WASTE AND INCREASE RECYCLING

Outcomes:

1. This will be a tender assessment condition and it will be necessary to demonstrate the ability to make effective use of the materials produced.
2. Support the development of a Resource Recovery Precinct around the site.

Objective 4 - PRODUCE A MARKETABLE PRODUCT

Outcomes:

1. This will be a tender assessment condition and it will be necessary to demonstrate the ability to make effective use of the materials produced.
2. Regular monitoring and reporting of performance.

Objective 5 – ACCOUNT FOR THE PROJECT USING A TRIPLE BOTTOM LINE

Outcomes:

1. Economic valuation and Customer Partnership Agreement with member councils.
2. Environmental approvals.
3. Community Partnership Agreement allows project to be tracked against social issues.
4. Key performance indicators reflecting Triple Bottom Line to be established to monitor the operations of the facility.

Objective 6 – HAVING AN ETHICAL AND TRUSTWORTHY OPERATOR

Outcomes:

1. Relationships style contract.
2. Ability of the contractor to perform in all areas, for the life of the project will be a key tender assessment criterion.
3. Regular monitoring of performance.
4. Develop procedures to continually improve the process by incorporating experience from the facility and relevant research and technology developments.
5. Clear allocation of risks in contract to party most able to manage the risk.
6. Rewards will be specified for successful compliance with key performance indicators.

Objective 7 – HAVING RIGOROUS QUALITY CONTROL AND PLANT RELIABILITY

Outcomes:

1. A proven history for the type of facility and equipment proposed.
2. A key tender assessment criterion.
3. Approved process control and monitoring system.
4. Develop procedures to continually improve the process by incorporating experience from the facility and relevant research and technology developments.
5. The tender will specify criteria that the contractor must meet.
6. Contractor shall have relevant Quality Assurance systems, such as ISO 9001 and ISO 14001 in place.
7. All sections of the facility will be fully enclosed including the recyclable separation and storage areas.

Objective 8 - HAVE TRANSPARENT AND OPEN MONITORING OF ALL ISSUES AVAILABLE TO THE COMMUNITY

Outcomes:

1. Regular public reporting of monitoring results.
2. An independent body to verify the monitoring results provided for the facility.
3. The Community Engagement Advisory Group to meet directly with plant manager.
4. Key performance indicators to be established to monitor the operation of the facility.

Objective 9 – ENSURE THROUGH MONITORING ALL EMISSIONS ARE BELOW ACCEPTABLE LEVELS

Outcomes:

1. A key tender assessment criterion.
2. A proven history for the type of facility and equipment proposed using best practice such as negative air pressure odour control system.
3. Demonstrated ability to meet environmental assessment, approval and licensing conditions.
4. Approved process control and monitoring system.
5. Develop procedures to continually improve the process by incorporating experience from the facility and relevant research and technology developments.
6. Monitor the condition of the building, particularly the concrete slab.

Objective 10 – HAVE NO BREACHES OF ENVIRONMENTAL CONDITIONS OF APPROVAL

Outcomes:

1. A key tender assessment criterion.
2. A proven history for the type of facility and equipment proposed.
3. Open and accountable process control and monitoring system developed through public consultation.
4. Develop procedures to continually improve the process by incorporating experience from the facility and relevant research and technology developments.
5. Aligned contract and financial rewards with successful compliance.
6. The facility shall have no discernible odour and will be monitored.
7. Any spillage or run-off water shall be collected and contained (shall not leave the site or enter the ground).

Objective 11 – THE RRF WILL BE ATTRACTIVE AND WELL LANDSCAPED

Outcomes:

1. Appropriate architectural design input into facility.
2. Assessment criterion for tender.

Objective 12 – HAVE DESIGNATED TRAFFIC ROUTES AND SPEED CONTROLS

Outcomes:

1. Agreement with individual Councils regarding access routes to the facility.
2. Promote development of Flynn Drive with City of Wanneroo in line with projected traffic volumes.

Objective 13 – PRODUCE A NET ENVIRONMENTAL BENEFIT

Outcome:

1. Tender assessment criterion.

Objective 14 – MINIMISE NOISE IMPACTS

Outcomes:

1. Provide a fully enclosed facility
2. Limit the hours of deliveries of the major components of the waste.
3. Provide a layout and design of the facility that ensures that the reversing and operating noise of the trucks is minimised.
4. The facility will have to adhere to the *Environmental Protection (Noise) Regulations, 1997*.

Objective 15 – MAKE THIS A SAFE FACILITY WITH NO HEALTH RISKS

Outcomes:

1. Provide a facility that does not have adverse health impacts in the short and long term.
2. Comply with environmental conditions with no breaches.
3. Health and safety of workers will be a tender assessment criterion.

Objective 16 – MAXIMISE USE OF BY PRODUCTS

Outcomes:

1. Encourage the establishment of a Resource Recovery Precinct adjacent to the RRF.
2. Set targets for the amount of the waste stream recovered.

Objective 17 – BENEFITS TO THE LOCAL COMMUNITY

Outcomes:

1. Encourage local employment.
2. Provide a community environmental education facility.

Objective 18 – COSTS IMPACTS

Outcome:

1. Provide a facility, which is economically viable in the short and long term.

Objective 19 – CONTROL OF VERMIN AND FLIES

Outcomes:

1. Provide a fully enclosed facility.
2. Minimise the time untreated waste is stored in the facility before being processed.

Objective 20 – MINIMISE THE RISK OF FIRES

Outcome:

1. Implement a comprehensive fire risk management plan.

The objectives and outcomes above have been developed through consultation with the public, and form the CPA. At the MRC's council meeting held on December 11, 2003, the MRC elected to adopt the CPA, which formalises the MRC's commitment to the objectives and outcomes contained in this document.