NSW GOVERNMENT
Department of Planning

Contact: Brad Deane
Phone: (02) 9228 6465
Fax: (02) 9228 6466
Email: brad.deane@planning.nsw.gov.au

Our ref: 9042593

Mr Ian Malouf
Light Horse Business Centre
PO Box 1040
MASCOT NSW 1460

Dear Mr Malouf

Director-General's Requirements
Proposed Engineered Landfill and Waste Management Facility

The Department has received your application for the proposed Engineered Landfill and Waste Management Centre project (Application Number: 06_0139).

I have attached a copy of the Director-General's requirements (DGRs) for the project. These requirements have been prepared in consultation with relevant government authorities and are based on the information that you have provided to date. I have also attached a copy of the government authorities comments for your information.

Please note that under section 75F(3) of the *Environmental Planning and Assessment Act 1979*, the Director-General may alter these requirements at any time.

I would appreciate it if you would contact the Department at least 2 weeks before you propose to submit the draft Environmental Assessment for the project to determine the:

- fees applicable to the application;
- consultation and public exhibition arrangements that will apply; and
- number and format (hard-copy or CD-ROM) of the Environmental Assessment that will be required.

As you may know, the Department will review the draft Environmental Assessment in consultation with the relevant authorities to determine if it adequately addresses the Director-General's requirements. If the Director-General considers the Environmental Assessment to be inadequate, you will be required to revise it prior to public exhibition.

The Director-General's requirements will be placed on the Department's website along with other relevant information which becomes available during the assessment of the project. As a result, the Department would appreciate it if all documents that are subsequently submitted to the Department are in a suitable format for the web, and if you would arrange for an electronic version of the Environmental Assessment for the project to be hosted on a suitable website with a link to the Department's website.

Finally, if your proposal contains any actions that could have a significant impact on Matters of National Environmental Significance, it will require an additional approval under the

Commonwealth *Environment Protection Biodiversity Conservation Act 1999* (EPBC Act). This approval would be in addition to any approvals required under NSW legislation. If you have any questions about the application of the EPBC Act to your proposal, you should contact the Commonwealth Department of Environment and Heritage in Canberra (02 6274 1111 or http://www.deh.gov.au).

If you have any enquiries about these requirements, please contact Brad Deane, Environmental Planning Officer (02 9228 6465).

Yours sincerely

Chris Wilson
A/Deputy Director-General
as delegate for the Director-General

Director-General's Requirements

Section 75F of the *Environmental Planning and Assessment Act 1979*

Project	The proposed construction and operation of a Materials Processing Centre and Engineered Landfill at Eastern Creek.
Site	Off Old Wallgrove Road, Eastern Creek
Proponent	ACN 114 843 453 Pty. Ltd. (trading as Light Horse Business Centre)
Date of Issue	22 June 2006
Date of Expiration	22 June 2008
General Requirements	The Environmental Assessment (EA) must include • an executive summary; • a detailed description of the project including the: - need for the project; - alternatives considered; and - various components and stages of the project, including the landfill design and proposed leachate and gas management systems; • consideration of any relevant statutory provisions; • a general overview of the environmental impacts of the proposal, identifying the key issues for further assessment, and taking into consideration any issues raised during consultation (see below); • a detailed assessment of the key issues specified below, and any other significant issues identified in the general overview of the environmental impacts of the proposal (see above), which includes: - a description of the existing environment; - an assessment of the potential impacts of the project; - a description of the measures that would be implemented to avoid, minimise, mitigate, offset, manage, and/or monitor the impacts of the project; • a draft Statement of Commitments, outlining environmental management, mitigation and monitoring measures; • a conclusion justifying the project, taking into consideration the environmental impacts of the proposal, the suitability of the site, and the costs and benefits of the proposal; • a signed statement from the author of the Environmental Assessment certifying that the information contained in the report is neither false nor misleading.
Key Issues	• **Strategic planning** – demonstrate that the proposal is generally consistent with the *Eastern Creek Precinct Plan (Stage 3)*, and justify any inconsistencies between the proposal and the precinct plan; • **Planning agreement/developer contributions** – in the absence of a contributions plan for the Eastern Creek Precinct, address the relevant requirements in clause 271 of the *Environmental Planning & Assessment Regulation 2000*; • **Waste management**– including waste classification, receival and stockpiling; • **Air quality** – including greenhouse gas emissions, odour and dust generation; • **Noise** – including construction, operation and traffic noise; • **Soil and water** - including surface water and groundwater impacts; stormwater management, including detailed consideration of any potential offsite drainage and flooding impacts; wastewater disposal; erosion and sediment controls; soil contamination; and salinity. • **Traffic and transport** - including details of traffic volumes likely to be generated during construction and operation, and an assessment of the

	predicted impacts of this traffic on the safety and capacity of the surrounding road network, including the Old Wallgrove Road/ Wallgrove Road intersection; • **Visual** – particularly on the residential areas to the north of the site; • **Flora and Fauna** – particularly on any threatened species, populations, or ecological communities and their habitats; • **Hazards and risks** – including fire management; and • **Heritage** – including both Aboriginal and non-Aboriginal.
References	The Environmental Assessment must take into account relevant State government technical and policy guidelines. While not exhaustive, guidelines which may be relevant to the project are included in the attached list.
Consultation	During the preparation of the Environmental Assessment, you must consult with the relevant local and State government authorities, service providers, community groups, affected landowners and any affected Commonwealth government authorities. In particular you must consult with: • Department of Environment and Conservation; • Department of Natural Resources; • Blacktown City Council; • NSW Roads and Traffic Authority; and • Sydney Water. The consultation process and the issues raised must be described in the Environmental Assessment.
Deemed refusal period	60 days

State Government Technical and Policy Guidelines - For Reference

Aspect	Policy /Methodology
Air Quality	
	Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (DEC)
	Approved Methods for the Sampling and Analysis of Air Pollutants in NSW (DEC)
Noise	
	NSW Industrial Noise Policy (DEC, Dec, 1999)
	Environmental Criteria for Road Traffic Noise (EPA, 1999)
Soil and Waters	
	Managing Urban Stormwater: Soils & Construction (Landcom)
	Guidelines for Fresh and Marine Water Quality (ANZECC)
	NSW State Groundwater Protection Policy (DNR)
	Approved Methods for the Sampling and Analysis of Water Pollutants in NSW (DEC)
	Acid Sulfate Soil Manual (ASSMAC)
	Contaminated Sites: Sampling Design Guidelines (EPA, 1999)
	NSW Salinity Strategy
	Stockpile Site Management Procedures (RTA, 2001)
Traffic & Transport	
	Guide to Traffic Generating Development (RTA)
	Road Design Guide (RTA)
Waste	
	Environmental Guidelines: Solid Waste Landfills (DEC)
	Environmental Guidelines: Assessment Classification and Management of Non-Liquid and Liquid Waste (DEC)
	Waste Avoidance and Resource Recovery Strategy (Resource NSW, 2003)
Flora and Fauna	
	draft Guidelines for Threatened Species Assessment (DEC)
	Threatened Biodiversity Survey and Assessment: Guidelines for Development and Activities (DEC);
	NSW Groundwater Dependent Ecosystem Policy (DNR);
	Policy and Guidelines for Fish Friendly Waterway Crossings (DPI)
Aboriginal Heritage	
	draft Guidelines for Aboriginal Cultural Heritage Assessment and Community Consultation (DEC)

Blacktown City Council
Growing with Pride

8 June 2006

David Kitto
Acting Director
Major Development Assessment
Department of Planning
GPO Box 39
SYDNEY 2001

Attention: Mr Brad Deanne

Dear Sir,

Re: Dial a Dump - Material Processing Centre and Engineered Landfill, Archbold Road, Eastern Creek

Reference is made to your fax dated 25 May 2006 regarding the Minister's intention to determine the above proposal pursuant to Part 3A of the Environmental Planning and Assessment Act 1979 (as amended) and enclosing a preliminary Assessment Report prepared by the applicant for Council's comments. It is understood that any deficiencies identified in the report will necessitate the applicant to address these in the preparation of the Final Assessment Report which will then be referred back to Council for comment.

In view of the above Council has examined the preliminary report and is extremely concerned that the applicant has failed to address the impacts of the proposed development in a number of key areas especially the impact of such a proposal on the adjacent Minchinbury Residential Area which is less than 500m away. As such Council strongly requests that the Final Environmental Assessment and all accompanying documentation be made publicly available for no less than 30 days to enable Council and adjacent owners/residents to make written submissions on all the documentation.

Council is also concerned that the applicant may not be obliged to contribute to the necessary regional infrastructure needed to facilitate this development.

Therefore it will be necessary for the applicant to address the outstanding matters listed at Attachment A to this letter as part of the preparation of the Final Environmental Assessment Report.

Council also reserves the right to raise any further issues as deemed necessary when it later reviews the Final Environmental Assessment Report.

Council Chambers • 62 Flushcombe Road • Blacktown NSW 2148
Telephone: (02) 9839 6000 • **Facsimile:** (02) 9831-1961 • DX 8117 Blacktown
Email: council@blacktown.nsw.gov.au • **Website:** www.blacktown.nsw.gov.au
All correspondence to: The General Manager • PO Box 63 • Blacktown NSW 2148

The list attached is now referred for your information and inclusion in any further correspondence to the applicant. Please do not hesitate to contact Ms J Portelli on 9839 6146 or by email should you wish to discuss the matter any further.

Yours faithfully,
RON MOORE
GENERAL MANAGER

Per:

File No.: 159043/2

Attachment A

1. Development Services Unit Issues:

i. Both the Preliminary Environmental Assessment (PEA) and the site plan make reference to subdivision of land. As indicated in your covering letter all reference to any form of subdivision must be deleted from all the documentation. Council will require complete amended plans to accompany the Final Assessment Report.

ii. Council is strongly opposed to the location of the stockpiles and operation of the crushing facility so close to the northern boundary with the Freeway and well within 500m of the Minchinbury Residential Area. Site inspections clearly reveal that the subject land and the quarry walls rise well above the road level. This will be further exacerbated by mountains of stockpiled material which create dust and visual impacts. The applicant has failed to provide a sufficiently wide setback with dense landscaped buffers. This area should be instead used only to facilitate the carpark and staff amenities/office buildings with the intended stockpile areas being relocated behind the quarry to avoid the visual noise and dust impacts expected. An attached extract of the Aerial photo of the property highlights the close proximity of the land to the Minchinbury Residential Area and the inappropriateness of the proposed site operation layout. The site plan clearly shows a lack of regard for the Minchinbury residents in the way the operation is to be set out.

iii. With regard to proposed Engineering Landfill it is not clear what is meant by the applicant's use of the words "development processes" on page 2 of the PEA. This terminology needs to be clarified and defined.

iv. The applicant intends to use the "informal road" which is a private Right of Way from Old Wallgrove Road through to the quarry site. The applicant fails to mention that there is also an intention to sever the quarry from the ancillary concrete/bitumen operations via a separate subdivision application and that this contractual subdivision will necessitate a relocation of the quarry road. Council is concerned that the relocation will mean that the private road will be closer to the quarry wall/lip which is unsafe and also fails to provide the necessary landscaped buffers of between 30-50m. Council would require the relocation of the private road to be supported by a Geotechnical Report addressing the stability, safety and structural soundness of a road closer to the quarry lip to be prepared by a suitably qualified Mines Engineer. This should be addressed as part of this proposal as the applicant proposes to rely on this private road to sustain this new proposal.

v. The noise issues arising from the diesel motors intended to operate the plant documented in Page 7 of the PEA will have to be addressed in

the acoustic report prepared by the applicant, along with the noise from trucks and the crushing plant.

Council also opposes the application's intention to operate the entire operation on a 24 hour basis. This will undoubtedly impact on the residents in the Minchinbury Residential Area due to reduced background noise after 10pm and before 6am each day. The Acoustic Report must accompany the Final Assessment Report for Council's consideration covering all aspects of the intended operation.

vi. The applicant is to submit a Dust Dispersion Report prepared by a suitably qualified consultant in conjunction with all the proposed activities. As the subject land is upwind from the adjoining residential area of Minchinbury Estate, the residents will be subjected to windborne dust from the stockpiles, truck movements, crushing facilities and the landfill operation. Clear measures of dust suppression as well as sufficient operation buffers are to be provided. As well as a relocation of proposed stockpile areas as outlined earlier.

vii. With regard to Site Contamination, the applicant is to provide a copy of the Site Contamination Report with the Final Assessment Report which allows Blacktown City Council, as an authority, to rely on the report. The report is also to provide details of sampling/testing that confirm that the phototoxicity levels are such that human contact with the soil is acceptable. The areas where amenities and the like are proposed will need to be remediated to threshold levels below ANZEC Guidelines and must comply with Council's Contaminated Lands Policy notwithstanding this is an industrial area.

viii. The applicant has failed to prepare and submit an "Assessment of Significance" (formerly known as an "8-Part test") pursuant to the Threatened Species Conservation Act 1995 regarding the potential impact of the proposed development on the adjacent remnant Cumberland Plain Woodland within the subject land which has been identified to be retained as a Conservation Area within the adopted Stage 3 Precinct Plan.

ix. Pursuant to Schedule 3 Environmental Planning and Assessment Regulation 2000 the proposal constitutes a Designated Development being a Waste Management Facility (WMF) Cl32(i)(a)(iv) that disposes by land filling and storing of solid waste that comprises more than 200 tonnes per year of other "waste material".

The applicant has argued that they propose only to import to the site "clean fill" only. This is not the case at all as the PEA, at Page 3, acknowledges the importation of soil containing asbestos sheet or pipe pieces.

In addition, pursuant to Cl.32(1)(d)(vi) the Material Processing Centre (MPC) and its associated stockpiles are within 500m of a residential zone being the Minchinbury Residential Area and in the opinion of Council having regard to topography and local meteorological conditions are likely to significantly affect the amenity of the residents by reason of noise, air pollution, visual impacts and traffic.

Therefore the applicant should be required to prepare a comprehensive Environmental Impact Statement (EIS) to address all the listed issues.

x. Despite the 2 alleged EPA licences held by the existing quarry operator, Council has never approved the Bitumen Premix or Hot Mix Productions, the crushing grinding and separating works, the storage, transfer, recovery, separating or processing of any material listed on Page 30 of the PEA. The crushing grinding and separating works are considered ancillary to the winning of material from the quarry. The Bitumen Plant was prohibited in the former zoning and hence Council was unable to permit it under the former zoning. With regard to the storage, transfer, separation, and recovery of material including municipal waste as outlined on Page 30, these have never been approved by Council. Hence Council is concerned that no tacit approval should be seen to have been given to any of the unauthorised activities currently being conducted on the site.

The status of these ancillary uses must also be considered and determined by the Minister given their intended reliance on the quarry's continued operation and use of extracted material from it to sustain their operations.

In addition it is not clear what the terms "municipal waste" is intended to include. This must be clarified or defined in the Final Environmental Assessment Report.

2. Traffic Engineering Issues:

i. **Section 6.3.2 Traffic Generation & Parking** - It is stated that a traffic report is prepared for this activity, however no copy of this report is submitted with the PEA. Without the traffic report, it will be difficult to comment on the specifics of traffic.

ii. A brief summary of the report (refer Section 6.3.2 of the Preliminary Environment Assessment Report) has listed four different scenarios for access to the quarry site by trucks bringing filling materials. One of the scenarios will use Archbold Road to gain access from the north. Archbold Road between M4 and Great Western Highway can only be used if noise attenuation treatment is provided on the residential side of the road to protect residential amenity.

iii. The Applicant is required to prepare and implement a Traffic Management Plan to minimise traffic impacts associated with the development. The Plan shall be prepared in consultation with the RTA and to the satisfaction of Blacktown City Council prior to the transport of material. The Plan shall include specific measures to minimise the impact of heavy vehicles, including restrictions on times (particularly in relation to peak commuter times) and to ensure that sand, clay or soil are not tracked onto transport routes.

3. **S94 Contribution Obligations:**

i. Page 22, under the heading *Contribution of the Precinct Plan*, states that a developer agreement is being prepared to address the issue of there being no relevant Section 94 Contributions Plan for the site.

ii. The infrastructure requirements for the precinct are generally covered in the Precinct Plan. However, detailed designs and cost estimates for stormwater drainage and roads are required before equitable contributions can be apportioned between the landowners. Given the size of the precinct and the necessity for a precinct-wide infrastructure study, it is not possible at this stage to apportion equitable contributions amongst the landowners.

iii. It should be noted that Council is currently in the process of supervising precinct-wide studies to determine the precise level of infrastructure provision. Once this is completed it will be possible to calculate the applicable apportionment of developer contribution for each developer. A S94 Contributions Plan will then be prepared or, alternatively, planning agreements will be entered into, depending on the developer's timeframe to develop. It is therefore considered **premature** at this stage, for **any consent authority** to grant development consent to developments within the precinct before the exact extent (and cost) of infrastructure provision is determined.

iv. However, if such determination is to be made, it should be on the basis that the developer be conditioned to fulfil their future apportioned infrastructure contributions obligations, as determined by Council, through a future S94 Contributions Plan or Voluntary Planning Agreement. Again, it is emphasised, that no Developer Agreement is currently being prepared between Council and the Light Horse Business Centre.

4. **Strategic Planning concerns in relation to Compliance with Council's Adopted Precinct Plan for Stage 3:**

i. It is noted that the PEA refers to a number of technical studies and detailed plans such as:

- Extraction and Rehabilitation Plan prepared by Hyder Consulting Pty Ltd;

- Groundwater and Salinity Assessment prepared by Ian Grey Groundwater Consulting Pty Ltd;
- Guiding Ecological Principles and Constraints Report prepared by Keystone Ecological;
- Acoustic Impact Statement prepared by Renzo Tonin and Associates;
- Traffic Report prepared by Masson Wilson Twiney;
- Bushfire Hazard Assessment report prepared by Holmes Fire and Safety;
- Geotechnical report prepared by Jeffery & Katauskas Pty Ltd;
- Civil Works Report prepared by Hyder Consulting Pty Ltd;
- Landscape Report and Concept Plans prepared by Site Image - Landscape Architects;
- Phase 1 Environmental Site Assessment prepared by Lot 2, in DP 262213 by CH2M HILL Australia Pty Ltd (October 2004); and
- Plans prepared by Joshua Farkash and Associates;

ii. Without those technical studies and detailed plans available, a detailed assessment of the project cannot be undertaken. As outlined earlier, it is paramount that the Final Environmental Assessment Report for the project be made publicly available for a period of no less than 30 days, to enable Council and affected property owners to make written submissions on all the documentation.

iii. Whilst Council acknowledges that s75H(3) of the Act only requires the D-G to undertake public consultation if guidelines have been published in the Gazette and that there is no requirement for the Minister to publish such guidelines, Council is therefore concerned that without the publication of such guidelines there is no requirement for the D-G to undertake public consultation. Council requests therefore that public consultation be provided in the interest of transparency and accountability.

iv. As part of any public consultation, DoP should make available the Final Environmental Assessment Report for review, including all technical studies, detailed plans, and any documents relating to the project. This includes all of the documents and plans identified above. As well as the Planning Agreement mentioned on Page 22.

v. In addition to the identified studies and plans, the Final Environmental Assessment Report should include an assessment of the following as required by the Stage 3 Precinct Plan:

(a) Air Quality

The PEA states that "the extent of dust suppression measures are detailed in the Extraction and Rehabilitation Plan prepared by Hyder Consulting". Given that the ERP is not available to review, the adequacy of assessment of air quality is unknown. This issue is

particularly important given the proximity of residential development on the northern side of the M4. The applicant should be advised that a detailed assessment/report is required to be undertaken in addition to measures to mitigate any adverse air quality impacts resulting from the project.

(b) Biodiversity Section of the Eastern Creek Precinct Plan - Stage 3

Clause 8.3.5(a) of the Precinct Plan requires applicants to demonstrate that satisfactory arrangements have been made for the ongoing protection, enhancement and management of biodiversity on land containing an identified conservation area. The project relates to land in which a conservation area has been identified. The applicant should be requested to demonstrate compliance with this requirement.

Whilst the project may not directly affect the conservation area, without detailed plans of what is proposed, this cannot be determined.

(c) Heritage Section of the Eastern Creek Precinct Plan - Stage 3

Similarly, Clause 9.2.5(a) of the Precinct Plan provides that applicants are required to demonstrate that satisfactory arrangements have been made for the ongoing protection, enhancement and management of indigenous heritage values on land containing an identified conservation area. As the project relates to land in which a conservation area has been identified, the applicant should be requested to demonstrate compliance with this requirement, noting the above comment.

(d) SEPP 33

The PEA states on Page 6 that "diesel fuel will be supplied by means of an approved double skinned diesel fuel tank licensed under the Dangerous Goods Act." Given this statement, the applicant should be required to provide more detail in the environmental assessment against the provisions of SEPP 33.

5. Council's Environmental Health Unit Issues:

i. Further details in terms of dust control are required as the use of a water cart for truck movements is inadequate. There is no detail on how the MPC will work and as such Council requires further information in this regard.

ii. There is also only limited detail in terms of controlling the 'quality' of the fill that is brought on to the site.

iii. In addition, at the very least a maximum surface level should be included - ".....these are indicative only as the achievement of these

levels is not anticipated for at least twenty years ....." whilst this statement may be true, Council would be concerned if the level of the land were to rise beyond that of adjoining properties.

iv. Notwithstanding the intention to use soils containing asbestos where fill is required at depths greater then 20m - there will still need to be some form of management plan to identify these areas.

v. An Environmental Management Plan is really required for the site as the PEA makes no mention of what will occur or of the procedures in place should an issue of non-compliance arise.

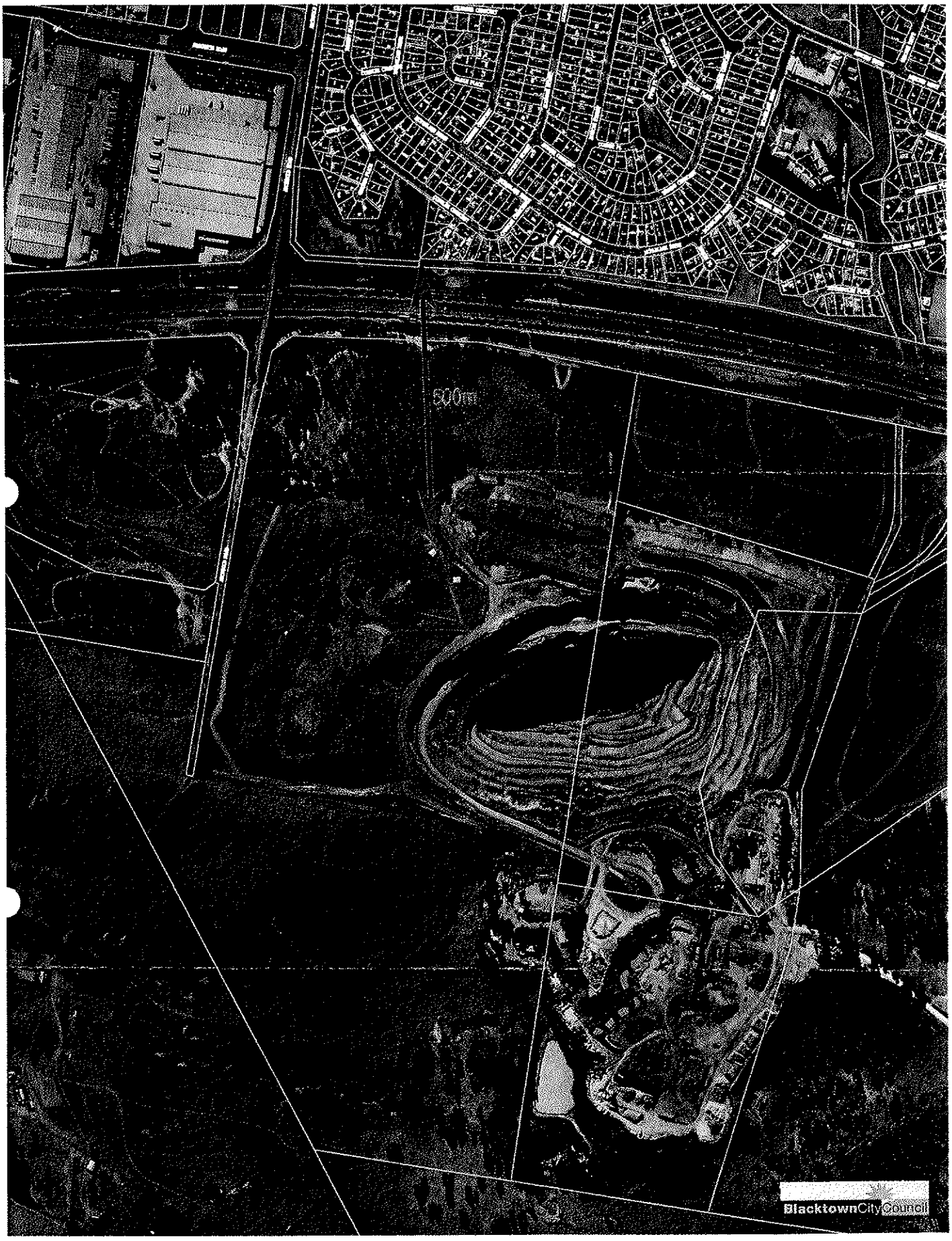
vi. Notwithstanding the intended control of fill quality, Council prefer to see a site auditor statement submitted and as such the auditor should monitor the fill works and report regularly to Council. This should be included in the Final Environmental Assessment Report.

6. **Council's Drainage Engineer Issues:**

i. The proposal fails to have regard for Council's Stormwater Quality Control Policy which can be obtained from Council's website.

ii. The applicant has failed to have regard for the fact that the subject land drains into adjoining land and as such will have to contribute to trunk drainage works outside the subject land to facilitate orderly development.

iii. The proposal must be supported by a Hydraulic Report and Drainage Concept Plan to identify existing drainage patterns and the intended methods of catering for the drainage through the land having regard to Council's Policy.



AIR PHOTO IMAGE

Produced by Blacktown City Council
Air Photo Date: 10 June 2004
Plot Date: 29 May 2006

Scale
0m 80m 160m 240m 320m 400m

Your reference : 06_0139
Our reference : HOF
Contact : Susan Fox, 99995 5713

Mr David Kitto
Acting Director Major Development Assessment
Department of Planning
GPO Box 39
SYDNEY SOUTH NSW 2001

8 June 2006

Dear Mr Kitto

KEY ISSUES AND ASSESSMENT REQUIREMENTS – PROPOSED WASTE TRANSFER, RECYCLING AND PROCESSING CENTRE AND LANDFILL, EASTERN CREEK.

I refer to your letter of 25 May 2006 to the Department of Environment & Conservation (DEC) to provide details of key issues and assessment requirements which may be included in the Director General's Environmental Assessment Requirements for the above proposal.

The DEC has considered the details of the proposal as provided by the Department of Planning and has identified the key issues and assessment requirements for the proposed waste transfer recycling and processing centre and landfill in Attachment 'A'. In summary, the DEC's key information for the proposal are:

1. Air quality issues (including Odour Management and dust management);
2. Noise impacts;
3. Stormwater and Wastewater management;
4. Landfill design (including Leachate Management, Landfill Gas Management, Environmental Monitoring including groundwater).
5. Fire management
6. Waste management (including waste classification, receival and stockpiling)

Based upon the information provided to the DEC, the applicant will require an Environment Protection Licence to carry out the Scheduled Activities of: 1) Waste Facility (Waste Storage, Transfer, Separating or Processing Facilities) and 2) Waste Facility (Solid Waste Landfill). The applicant will need to make a separate application to the DEC for an Environment Protection Licence if the development consent is granted.

The DEC can also advise that the proposed landfill (whether receiving "Solid" or "Inert" classified waste, will be subject to the provisions of section 88 of the *Protection of the Environment Operations Act* 1997, known as the "Waste Levy."

PO Box A290 Sydney South NSW 1232
59-61 Goulburn St Sydney NSW 2000
Tel: (02) 9995 5000 Fax: (02) 9995 5999
TTY (02) 9211 4723
ABN 30 841 387 271
www.environment.nsw.gov.au

The DEC requests that the applicant provide five (5) copies of the Development Application and Environmental Assessment when lodging its application with the DEC. These documents should be lodged with the Department of Environment and Conservation, PO Box A290, SYDNEY SOUTH NSW 1232.

If you have any queries regarding this matter please contact Susan Fox on 9995 5713.

Yours sincerely

JULIAN THOMPSON
Principal Officer Sydney Waste
Environment Protection and Regulation Division

The proposal

1. Objectives of the proposal

- The objectives of the proposal should be clearly stated and refer to:
  a) the size and type of the operation, the nature of the processes and the products, by-products and wastes produced
  b) a life cycle approach to the production, use or disposal of products
  c) the anticipated level of performance in meeting required environmental standards and cleaner production principles
  d) the staging and timing of the proposal and any plans for future expansion
  e) the proposal's relationship to any other industry or facility.

2. Description of the proposal

General

- Outline the production process including:
  a) the environmental "mass balance" for the process – quantify in-flow and out-flow of materials, any points of discharge to the environment and their respective destinations (sewer, stormwater, atmosphere, recycling, landfill etc)
  b) any life-cycle strategies for the products.
- Outline cleaner production actions, including:
  a) measures to minimise waste (typically through addressing source reduction)
  b) proposals for use or recycling of by-products
  c) proposed disposal methods for solid and liquid waste
  d) air management systems including all potential sources of air emissions, proposals to re-use or treat emissions, emission levels relative to relevant standards in regulations, discharge points
  e) water management system including all potential sources of water pollution, proposals for re-use, treatment etc, emission levels of any wastewater discharged, discharge points, summary of options explored to avoid a discharge, reduce its frequency or reduce its impacts, and rationale for selection of option to discharge.
  f) soil contamination treatment and prevention systems.
- Outline construction works including:
  a) actions to address any existing soil contamination
  b) any earthworks or site clearing; re-use and disposal of cleared material (including use of spoil on-site)
  c) construction timetable and staging; hours of construction; proposed construction methods
  d) environment protection measures, including noise mitigation measures, dust control measures and erosion and sediment control measures.

Air

- Identify all sources of air emissions from the development.

  Note: emissions can be classed as either:
  - *point (eg emissions from stack or vent) or*
  - *fugitive (from wind erosion, leakages or spillages, associated with loading or unloading, conveyors, storage facilities, plant and yard operation, vehicle movements (dust from road; exhausts, loss from load), land clearing and construction works).*

- Provide details of the project that are essential for predicting and assessing air impacts including:

  a) the quantities and physio-chemical parameters (eg concentration, moisture content, bulk density, particle sizes etc) of materials to be used, transported, produced or stored

  b) an outline of procedures for handling, transport, production and storage

  c) the management of solid, liquid and gaseous waste streams with potential for significant air impacts.

Noise and vibration

- Identify all noise sources from the development (including both construction and operation phases). Detail all potentially noisy activities including ancillary activities such as transport of goods and raw materials.
- Specify the times of operation for all phases of the development and for all noise producing activities.
- For projects with a significant potential traffic noise impact provide details of road alignment (include gradients, road surface, topography, bridges, culverts etc), and land use along the proposed road and measurement locations – diagrams should be to a scale sufficient to delineate individual residential blocks.

Water

- Provide details of the project that are essential for predicting and assessing impacts to waters:

  a) including the quantity and physio-chemical properties of all potential water pollutants and the risks they pose to the environment and human health, including the risks they pose to Water Quality Objectives in the ambient waters (as defined on www.environment.nsw.gov.au/ieo, using technical criteria derived from the Australian and New Zealand Guidelines for Fresh and Marine Water Quality, ANZECC 2000)

  b) the management of discharges with potential for water impacts

  c) drainage works and associated infrastructure; land-forming and excavations; working capacity of structures; and water resource requirements of the proposal.

- Outline site layout, demonstrating efforts to avoid proximity to water resources (especially for activities with significant potential impacts eg effluent ponds) and showing potential areas of modification of contours, drainage etc.
- Outline how total water cycle considerations are to be addressed showing total water balances for the development (with the objective of minimising demands and impacts on water resources). Include water requirements (quantity, quality and source(s)) and proposed storm and wastewater disposal, including type, volumes, proposed treatment and management methods and re-use options.

Waste and chemicals

- Provide details of the quantity and type of and non-liquid waste generated, handled, processed or disposed of at the premises. Waste must be classified according to the *Environmental Guidelines: Assessment, Classification and Management of Liquid and Non-liquid Wastes* (NSW EPA, 1999).
- Provide details of liquid waste and non-liquid waste management at the facility, including:
  a) the transportation, assessment and handling of waste arriving at or generated at the site
  b) any stockpiling of wastes or recovered materials at the site
  c) any waste processing related to the facility, including reuse, recycling, reprocessing or treatment both on- and off-site
  d) the method for disposing of all wastes or recovered materials at the facility
  e) the emissions arising from the handling, storage, processing and reprocessing of waste at the facility
  f) the proposed controls for managing the environmental impacts of these activities.
- Provide details of spoil disposal with particular attention to:
  a) the quantity of spoil material likely to be generated
  b) proposed strategies for the handling, stockpiling, reuse/recycling and disposal of spoil
  c) the need to maximise reuse of spoil material in the construction industry
  d) identification of the history of spoil material and whether there is any likelihood of contaminated material, and if so, measures for the management of any contaminated material
  e) designation of transportation routes for transport of spoil.
- Provide details of procedures for the assessment, handling, storage, transport and disposal of all hazardous and dangerous materials used, stored, processed or disposed of at the site, in addition to the requirements for liquid and non-liquid wastes.
- Provide details of the type and quantity of any chemical substances to be used or stored and describe arrangements for their safe use and storage.
- Reference should be made to the guidelines: *Environmental Guidelines: Assessment, Classification and Management of Liquid and Non-Liquid Wastes* (NSW EPA, 1999).
- The environmental assessment should be accompanied by an updated Landfill Environmental Management Plan (LEMP), prepared in accordance with the EPA's *Environmental Guidelines: Solid Waste Landfills* (1996) which details how the environmental goals stated in those guidelines will be met by the proposed landfill and waste transfer, recycling and processing centre.

  Specific issues to be addressed by the updated LEMP are:

  1. Details of the design and the specifications of the existing leachate collection and conveyance system in the landfill and any information on its construction quality control/assurance including material permeability tests, manufacturer's pipe specifications and 'as constructed' drawings;
  2. Details of the operation of the existing and any proposed leachate collection systems;

ESD

- Demonstrate that the planning process and any subsequent development incorporates objectives and mechanisms for achieving ESD, including:

a) an assessment of a range of options available for use of the resource, including the benefits of each option to future generations

b) proper valuation and pricing of environmental resources

c) identification of who will bear the environmental costs of the proposal.

3. Rehabilitation

- Outline considerations of site maintenance, and proposed plans for the final condition of the site (ensuring its suitability for future uses).

4. Consideration of alternatives and justification for the proposal

- Consider the environmental consequences of adopting alternatives, including alternative:
  a) sites and site layouts
  b) access modes and routes
  c) materials handling and production processes
  d) waste and water management
  e) impact mitigation measures
  f) energy sources
- Selection of the preferred option should be justified in terms of:
  a) ability to satisfy the objectives of the proposal
  b) relative environmental and other costs of each alternative
  c) acceptability of environmental impacts and contribution to identified environmental objectives
  d) acceptability of any environmental risks or uncertainties
  e) reliability of proposed environmental impact mitigation measures
  f) efficient use (including maximising re-use) of land, raw materials, energy and other resources.

C The location

1. General

- Provide an overview of the affected environment to place the proposal in its local and regional environmental context including:
  a) meteorological data (eg rainfall, temperature and evaporation, wind speed and direction)
  b) topography (landform element, slope type, gradient and length)
  c) surrounding land uses (potential synergies and conflicts)
  d) geomorphology (rates of landform change and current erosion and deposition processes)
  e) soil types and properties (including erodibility; engineering and structural properties; dispersibility; permeability; presence of acid sulfate soils and potential acid sulfate soils)
  f) ecological information (water system habitat, vegetation, fauna)
  g) availability of services and the accessibility of the site for passenger and freight transport.

2. Air

- Describe the topography and surrounding land uses. Provide details of the exact locations of dwellings, schools and hospitals. Where appropriate provide a perspective view of the study area such as the terrain file used in dispersion models.
- Describe surrounding buildings that may effect plume dispersion.
- Provide and analyse site representative data on following meteorological parameters: temperature and humidity
  a) rainfall, evaporation and cloud cover
  b) wind speed and direction
  c) atmospheric stability class
  d) mixing height (the height that emissions will be ultimately mixed in the atmosphere)
  e) katabatic air drainage
  f) air re-circulation.

3. Noise and vibration

- Identify any noise sensitive locations likely to be affected by activities at the site, such as residential properties, schools, churches, and hospitals. Typically the location of any noise sensitive locations in relation to the site should be included on a map of the locality.
- Identify the land use zoning of the site and the immediate vicinity and the potentially affected areas.

4. Water

- Describe the catchment including proximity of the development to any waterways and provide an assessment of their sensitivity/significance from a public health, ecological and/or economic perspective. The Water Quality and River Flow Objectives on the website:

www.environment.nsw.gov.au/ieo should be used to identify the agreed environmental values and human uses for any affected waterways. This will help with the description of the local and regional area.

5. Soil Contamination Issues

- Provide details of site history – if earthworks are proposed, this needs to be considered with regard to possible soil contamination, for example if the site was previously a landfill site or if irrigation of effluent has occurred.

D Identification and prioritisation of issues / scoping of impact assessment

- Provide an overview of the methodology used to identify and prioritise issues. The methodology should take into account:
  a) relevant NSW government guidelines
  b) industry guidelines
  c) Environmental Assessments/ Environmental Impact Statements for similar projects
  d) relevant research and reference material
  e) relevant preliminary studies or reports for the proposal
  f) consultation with stakeholders.
- Provide a summary of the outcomes of the process including:
  a) all issues identified including local, regional and global impacts (eg increased/ decreased greenhouse emissions)
  b) key issues which will require a full analysis (including comprehensive baseline assessment)
  c) issues not needing full analysis though they may be addressed in the mitigation strategy
  d) justification for the level of analysis proposed (the capacity of the proposal to give rise to high concentrations of pollution compared with the ambient environment or environmental outcomes is an important factor in setting the level of assessment).

E The environmental issues

1. General

- The potential impacts identified in the scoping study need to be assessed to determine their significance, particularly in terms of achieving environmental outcomes, and minimising environmental pollution.
- Identify gaps in information and data relevant to significant impacts of the proposal and any actions proposed to fill those information gaps so as to enable development of appropriate management and mitigation measures. This is in accordance with ESD requirements.

Note: The level of detail should match the level of importance of the issue in decision making which is dependent on the environmental risk.

Describe baseline conditions

- Provide a description of existing environmental conditions for any potential impacts.

Assess impacts

- For any potential impacts relevant for the assessment of the proposal provide a detailed analysis of the impacts of the proposal on the environment including the cumulative impact of the proposal on the receiving environment especially where there are sensitive receivers.
- Describe the methodology used and assumptions made in undertaking this analysis (including any modelling or monitoring undertaken) and indicate the level of confidence in the predicted outcomes and the resilience of the environment to cope with the predicted impacts.
- The analysis should also make linkages between different areas of assessment where necessary to enable a full assessment of environmental impacts eg assessment of impacts on air quality will often need to draw on the analysis of traffic, health, social, soil and/or ecological systems impacts; etc.
- The assessment needs to consider impacts at all phases of the project cycle including: exploration (if relevant or significant), construction, routine operation, start-up operations, upset operations and decommissioning if relevant.
- The level of assessment should be commensurate with the risk to the environment.

Describe management and mitigation measures

- Describe any mitigation measures and management options proposed to prevent, control, abate or mitigate identified environmental impacts associated with the proposal and to reduce risks to human health and prevent the degradation of the environment. This should include an assessment of the effectiveness and reliability of the measures and any residual impacts after these measures are implemented.
- Proponents are expected to implement a 'reasonable level of performance' to minimise environmental impacts. The proponent must indicate how the proposal meets reasonable levels of performance. For example, reference technology based criteria if available, or identify good practice for this type of activity or development. A 'reasonable level of performance' involves adopting and implementing technology and management practices to achieve certain pollutant emissions levels in economically viable operations. Technology-based criteria evolve gradually over time as technologies and practices change.
- Use environmental impacts as key criteria in selecting between alternative sites, designs and technologies, and to avoid options having the highest environmental impacts.

- Outline any proposed approach (such as an Environmental Management Plan) that will demonstrate how commitments made in the Environmental Assessment will be implemented. Areas that should be described include:
  a) operational procedures to manage environmental impacts
  b) monitoring procedures
  c) training programs
  d) community consultation
  e) complaint mechanisms including site contacts
  f) strategies to use monitoring information to improve performance
  g) strategies to achieve acceptable environmental impacts and to respond in event of exceedences.

2. Air

Describe baseline conditions

- Provide a description of existing air quality and meteorology, using existing information and site representative ambient monitoring data.

Assess impacts

- Identify all pollutants of concern and estimate emissions by quantity (and size for particles), source and discharge point.
- Estimate the resulting ground level concentrations of all pollutants. Where necessary (eg potentially significant impacts and complex terrain effects), use an appropriate dispersion model to estimate ambient pollutant concentrations. Discuss choice of model and parameters with the DEC.
- Describe the effects and significance of pollutant concentration on the environment, human health, amenity and regional ambient air quality standards or goals.
- Describe the contribution that the development will make to regional and global pollution, particularly in sensitive locations.
- For potentially odorous emissions provide the emission rates in terms of odour units (determined by techniques compatible with EPA / DEC procedures). Use sampling and analysis techniques for individual or complex odours and for point or diffuse sources, as appropriate.

  Note: With dust and odour, it may be possible to use data from existing similar activities to generate emission rates.

- Reference should be made to relevant guidelines e.g. *Approved Methods and Guidance for the Modelling and Assessment of Air Pollutants in NSW* (EPA, 2001); *Approved Methods for the Sampling and Analysis of Air Pollutants in NSW* (EPA, 2001); *Assessment and Management of Odour from Stationary Sources in NSW* (EPA, 2001); *Technical Notes: Draft Policy: Assessment and Management of Odour from Stationary Sources in NSW (EPA, 2001).*

Describe management and mitigation measures

- Outline specifications of pollution control equipment (including manufacturer's performance guarantees where available) and management protocols for both point and fugitive emissions. Where possible, this should include cleaner production processes.

3. Noise and vibration

Describe baseline conditions

- Determine the existing background (L_{A90}) and ambient (L_{Aeq}) noise levels in accordance with the *NSW Industrial Noise Policy*.
- Determine the existing road traffic noise levels in accordance with the *NSW Environmental Criteria for Road Traffic Noise*, where road traffic noise impacts may occur.
- The noise impact assessment report should provide details of all monitoring of existing ambient noise levels including:
  a) details of equipment used for the measurements
  b) a brief description of where the equipment was positioned
  c) a statement justifying the choice of monitoring site, including the procedure used to choose the site, having regards to the definition of 'noise sensitive locations(s)' and 'most affected locations(s)' described in Section 3.1.2 of the *NSW Industrial Noise Policy*
  d) details of the exact location of the monitoring site and a description of land uses in surrounding areas
  e) a description of the dominant and background noise sources at the site
  f) day, evening and night assessment background levels for each day of the monitoring period
  g) the final Rating Background Level (RBL) value
  h) graphs of the measured noise levels for each day should be provided
  i) a record of periods of affected data (due to adverse weather and extraneous noise), methods used to exclude invalid data and a statement indicating the need for any re-monitoring under Step 1 in Section B1.3 of the *NSW Industrial Noise Policy*
  j) determination of L_{Aeq} noise levels from existing industry.

Assess impacts

- Determine the project specific noise levels for the site. For each identified potentially affected receiver, this should include:
  a) determination of the intrusive criterion for each identified potentially affected receiver
  b) selection and justification of the appropriate amenity category for each identified potentially affected receiver
  c) determination of the amenity criterion for each receiver
  d) determination of the appropriate sleep disturbance limit.
- Maximum noise levels during night-time period (10pm-7am) should be assessed to analyse possible affects on sleep. Where $L_{A1(1min)}$ noise levels from the site are less than 15 dB above the background L_{A90} noise level, sleep disturbance impacts are unlikely. Where this is not the case, further analysis is required. Additional guidance is provided in Appendix B of the *NSW Environmental Criteria for Road Traffic Noise*.
- Determine expected noise level and noise character (eg tonality, impulsiveness, vibration, etc) likely to be generated from noise sources during:
  a) site establishment
  b) construction
  c) operational phases
  d) transport including traffic noise generated by the proposal
  e) other services.

Note: The noise impact assessment report should include noise source data for each source in 1/1 or 1/3 octave band frequencies including methods for references used to determine noise source levels. Noise source levels and characteristics can be sourced from direct measurement of similar activities or from literature (if full references are provided).

- Determine the noise levels likely to be received at the most sensitive locations (these may vary for different activities at each phase of the development). Potential impacts should be determined for any identified significant adverse meteorological conditions. Predicted noise levels under calm conditions may also aid in quantifying the extent of impact where this is not the most adverse condition.
- The noise impact assessment report should include:
  a) a plan showing the assumed location of each noise source for each prediction scenario
  b) a list of the number and type of noise sources used in each prediction scenario to simulate all potential significant operating conditions on the site
  c) any assumptions made in the predictions in terms of source heights, directivity effects, shielding from topography, buildings or barriers, etc
  d) methods used to predict noise impacts including identification of any noise models used. Where modelling approaches other than the use of the ENM or SoundPlan computer models are adopted, the approach should be appropriately justified and validated
  e) an assessment of appropriate weather conditions for the noise predictions including reference to any weather data used to justify the assumed conditions
  f) the predicted noise impacts from each noise source as well as the combined noise level for each prediction scenario under any identified significant adverse weather conditions as well as calm conditions where appropriate
  g) for developments where a significant level of noise impact is likely to occur, noise contours for the key prediction scenarios should be derived
  h) an assessment of the need to include modification factors as detailed in Section 4 of the *NSW Industrial Noise Policy.*
- Discuss the findings from the predictive modelling and, where relevant noise criteria have not been met, recommend additional mitigation measures.
- The noise impact assessment report should include details of any mitigation proposed including the attenuation that will be achieved and the revised noise impact predictions following mitigation.
- Where relevant noise/vibration criteria cannot be met after application of all feasible and cost effective mitigation measures the residual level of noise impact needs to be quantified by identifying:
  a) locations where the noise level exceeds the criteria and extent of exceedence
  b) numbers of people (or areas) affected
  c) times when criteria will be exceeded
  d) likely impact on activities (speech, sleep, relaxation, listening, etc)
  e) change on ambient conditions
  f) the result of any community consultation or negotiated agreement.
- For the assessment of existing and future traffic noise, details of data for the road should be included such as assumed traffic volume; percentage heavy vehicles by time of day; and details of the calculation process. These details should be consistent with any traffic study carried out in the Environmental Assessment .

- Where blasting is intended an assessment in accordance with the *Technical Basis for Guidelines to Minimise Annoyance due to Blasting Overpressure and Ground Vibration* (ANZECC, 1990) should be undertaken. The following details of the blast design should be included in the noise assessment:
  a) bench height, burden spacing, spacing burden ratio
  b) blast hole diameter, inclination and spacing
  c) type of explosive, maximum instantaneous charge, initiation, blast block size, blast frequency.

Describe management and mitigation measures

- Determine the most appropriate noise mitigation measures and expected noise reduction including both noise controls and management of impacts for both construction and operational noise. This will include selecting quiet equipment and construction methods, noise barriers or acoustic screens, location of stockpiles, temporary offices, compounds and vehicle routes, scheduling of activities, etc.
- For traffic noise impacts, provide a description of the ameliorative measures considered (if required), reasons for inclusion or exclusion, and procedures for calculation of noise levels including ameliorative measures. Also include, where necessary, a discussion of any potential problems associated with the proposed ameliorative measures, such as overshadowing effects from barriers. Appropriate ameliorative measures may include:
  a) use of alternative transportation modes, alternative routes, or other methods of avoiding the new road usage
  b) control of traffic (eg: limiting times of access or speed limitations)
  c) resurfacing of the road using a quiet surface
  d) use of (additional) noise barriers or bunds
  e) treatment of the façade to reduce internal noise levels buildings where the night-time criteria is a major concern
  f) more stringent limits for noise emission from vehicles (i.e. using specially designed 'quite' trucks and/or trucks to use air bag suspension
  g) driver education
  h) appropriate truck routes
  i) limit usage of exhaust breaks
  j) use of premium muffles on trucks
  k) reducing speed limits for trucks
  l) ongoing community liaison and monitoring of complaints
  m) phasing in the increased road use.

4. Water

Describe baseline conditions

- Describe existing surface and groundwater quality – an assessment needs to be undertaken for any water resource likely to be affected by the proposal and for all conditions (e.g. a wet weather sampling program is needed if runoff events may cause impacts).

  Note: Methods of sampling and analysis need to conform with an accepted standard (e.g. Approved Methods for the Sampling and Analysis of Water Pollutants in NSW (DEC 2004) *or be approved and analyses undertaken by accredited laboratories).*

- Provide site drainage details and surface runoff yield.

- State the ambient Water Quality and River Flow Objectives for the receiving waters. These refer to the community's agreed environmental values and human uses endorsed by the Government as goals for the ambient waters. These environmental values are published on the website: www.environment.nsw.gov.au/ieo. The Environmental Assessment should state the environmental values listed for the catchment and waterway type relevant to your proposal. NB: A consolidated and approved list of environmental values are not available for groundwater resources. Where groundwater may be affected the ENVIRONMENTAL ASSESSMENT should identify appropriate groundwater environmental values and justify the choice.

- State the indicators and associated trigger values or criteria for the identified environmental values. This information should be sourced from the ANZECC 2000 *Guidelines for Fresh and Marine Water Quality* (http://www.deh.gov.au/water/quality/nwqms/volume1.html)(Note that, as at 2004, the NSW Water Quality Objectives booklets and website contain technical criteria derived from the 1992 version of the ANZECC Guidelines. The Water Quality Objectives remain as Government Policy, reflecting the community's environmental values and long-term goals, but the technical criteria are replaced by the more recent ANZECC 2000 Guidelines). NB: While specific guidelines for groundwater are not available, the ANCECC 2000 Guidelines endorse the application of the trigger values and decision trees as a tool to assess risk to environmental values in groundwater.

- State any locally specific objectives, criteria or targets, which have been endorsed by the government e.g. the Healthy Rivers Commission Inquiries (www.hrc.nsw.gov.au) or the NSW Salinity Strategy (DLWC, 2000) (www.dlwc.nsw.gov.au/care/salinity/#Strategy).

- Where site specific studies are proposed to revise the trigger values supporting the ambient Water Quality and River Flow Objectives, and the results are to be used for regulatory purposes (e.g. to assess whether a licensed discharge impacts on water quality objectives), then prior agreement from the DEC on the approach and study design must be obtained.

- Describe the state of the receiving waters and relate this to the relevant Water Quality and River Flow Objectives (i.e. are Water Quality and River Flow Objectives being achieved?). Proponents are generally only expected to source available data and information. However, proponents of large or high risk developments may be required to collect some ambient water quality / river flow / groundwater data to enable a suitable level of impact assessment. Issues to include in the description of the receiving waters could include:

  a) lake or estuary flushing characteristics

  b) specific human uses (e.g. exact location of drinking water offtake)

  c) sensitive ecosystems or species conservation values

  d) a description of the condition of the local catchment e.g. erosion levels, soils, vegetation cover, etc

  e) an outline of baseline groundwater information, including, but not restricted to, depth to watertable, flow direction and gradient, groundwater quality, reliance on groundwater by surrounding users and by the environment

f) historic river flow data where available for the catchment.

Assess impacts

- No proposal should breach clause 120 of the *Protection of the Environment Operations Act* 1997 (i.e. pollution of waters is prohibited unless undertaken in accordance with relevant regulations).
- Identify and estimate the quantity of all pollutants that may be introduced into the water cycle by source and discharge point including residual discharges after mitigation measures are implemented.
- Include a rationale, along with relevant calculations, supporting the prediction of the discharges.
- Describe the effects and significance of any pollutant loads on the receiving environment. This should include impacts of residual discharges through modelling, monitoring or both, depending on the scale of the proposal. Determine changes to hydrology (including drainage patterns, surface runoff yield, flow regimes, wetland hydrologic regimes and groundwater).
- Describe water quality impacts resulting from changes to hydrologic flow regimes (such as nutrient enrichment or turbidity resulting from changes in frequency and magnitude of stream flow).
- Identify any potential impacts on quality or quantity of groundwater describing their source.
- Identify potential impacts associated with geomorphological activities with potential to increase surface water and sediment runoff or to reduce surface runoff and sediment transport. Also consider possible impacts such as bed lowering, bank lowering, instream siltation, floodplain erosion and floodplain siltation.
- Identify impacts associated with the disturbance of acid sulfate soils and potential acid sulfate soils.
- Containment of spills and leaks shall be in accordance with the technical guidelines section 'Bunding and Spill Management' of the *Authorised Officers Manual* (EPA, 1995) (http://www.environment.nsw.gov.au/mao/bundingspill.htm) and the most recent versions of the Australian Standards referred to in the Guidelines. Containment should be designed for no-discharge.
- The significance of the impacts listed above should be predicted. When doing this it is important to predict the ambient water quality and river flow outcomes associated with the proposal and to demonstrate whether these are acceptable in terms of achieving protection of the Water Quality and River Flow Objectives. In particular the following questions should be answered:

  a) will the proposal protect Water Quality and River Flow Objectives where they are currently achieved in the ambient waters; and

  b) will the proposal contribute towards the achievement of Water Quality and River Flow Objectives over time, where they are not currently achieved in the ambient waters.

- Consult with the DEC as soon as possible if a mixing zone is proposed (a mixing zone could exist where effluent is discharged into a receiving water body, where the quality of the water being discharged does not immediately meet water quality objectives. The mixing zone could result in dilution, assimilation and decay of the effluent to allow water quality objectives to be met further downstream, at the edge of the mixing zone). The DEC will advise the proponent under what conditions a mixing zone will and will not be acceptable, as well as the information and modelling requirements for assessment.

  Note: The assessment of water quality impacts needs to be undertaken in a total catchment management context to provide a wide perspective on development impacts, in particular cumulative impacts.

- Where a licensed discharge is proposed, provide the rationale as to why it cannot be avoided through application of a reasonable level of performance, using available technology, management practice and industry guidelines.
- Where a licensed discharge is proposed, provide the rationale as to why it represents the best environmental outcome and what measures can be taken to reduce its environmental impact.
- Reference should be made to relevant guidelines e.g. *Managing Urban Stormwater: Soils and Construction* (Landcom, 2004), *Guidelines for Fresh and Marine Water Quality* ANZECC 2000), *Environmental Guidelines: Use of effluent by Irrigation* (DEC, 2004).

Describe management and mitigation measures

- Outline stormwater management to control pollutants at the source and contain them within the site. Also describe measures for maintaining and monitoring any stormwater controls.
- Outline erosion and sediment control measures directed at minimising disturbance of land, minimising water flow through the site and filtering, trapping or detaining sediment. Also include measures to maintain and monitor controls as well as rehabilitation strategies.
- Describe waste water treatment measures that are appropriate to the type and volume of waste water and are based on a hierarchy of avoiding generation of waste water; capturing all contaminated water (including stormwater) on the site; reusing/recycling waste water; and treating any unavoidable discharge from the site to meet specified water quality requirements.
- Outline pollution control measures relating to storage of materials, possibility of accidental spills (eg preparation of contingency plans), appropriate disposal methods, and generation of leachate.
- Describe hydrological impact mitigation measures including:
  a) site selection (avoiding sites prone to flooding and waterlogging, actively eroding or affected by deposition)
  b) minimising runoff
  c) minimising reductions or modifications to flow regimes
  d) avoiding modifications to groundwater.
- Describe groundwater impact mitigation measures including:
  a) site selection
  b) retention of native vegetation and revegetation
  c) artificial recharge
  d) providing surface storages with impervious linings
  e) monitoring program.
- Describe geomorphological impact mitigation measures including:
  a) site selection
  b) erosion and sediment controls
  c) minimising instream works
  d) treating existing accelerated erosion and deposition
  e) monitoring program.
- Any proposed monitoring should be undertaken in accordance with the *Approved Methods for the Sampling and Analysis of Water Pollutants in NSW* (DEC 2004).

5. Soils and contamination

Describe baseline conditions

- Provide any details (in addition to those provided in the location description - Section C) that are needed to describe the existing situation in terms of soil types and properties and soil contamination.

Assess impacts

- Identify any likely impacts resulting from the construction or operation of the proposal, including the likelihood of:
  a) disturbing any existing contaminated soil
  b) contamination of soil by operation of the activity
  c) subsidence or instability
  d) soil erosion
  e) disturbing acid sulfate or potential acid sulfate soils.
- Reference should be made to relevant guidelines e.g. *Contaminated Sites – Guidelines for Consultants Reporting on Contaminated Sites* (EPA, 1997); *Contaminated Sites – Guidelines on Significant Risk of Harm and Duty to Report* (EPA, 1999).

Describe management and mitigation measures

- Describe and assess the effectiveness or adequacy of any soil management and mitigation measures during construction and operation of the proposal including:
  a) erosion and sediment control measures
  b) proposals for site remediation – see *Managing Land Contamination, Planning Guidelines SEPP 55 – Remediation of Land* (Department of Urban Affairs and Planning and Environment Protection Authority, 1998)

6. Waste and chemicals

Describe baseline conditions

- Describe any existing waste or chemicals operations related to the proposal.

Assess impacts

- Assess the adequacy of proposed measures to minimise natural resource consumption and minimise impacts from the handling, transporting, storage, processing and reprocessing of waste and/or chemicals.
- Reference should be made to relevant guidelines e.g. *Environmental Guidelines: Assessment, Classification and Management of Liquid and Non-Liquid Wastes* (EPA, 1999)` and *Environmental Guidelines: Solid Waste Landfills* (EPA, 1996)

Describe management and mitigation measures

- Outline measures to minimise the consumption of natural resources.
- Outline measures to avoid the generation of waste and promote the re-use and recycling and reprocessing of any waste.
- Outline measures to support any approved regional or industry waste plans.

7. Cumulative impacts

- Identify the extent that the receiving environment is already stressed by existing development and background levels of emissions to which this proposal will contribute.
- Assess the impact of the proposal against the long term air, noise and water quality objectives for the area or region.
- Identify infrastructure requirements flowing from the proposal (eg water and sewerage services, transport infrastructure upgrades).
- Assess likely impacts from such additional infrastructure and measures reasonably available to the proponent to contain such requirements or mitigate their impacts (eg travel demand management strategies).

F. List of approvals and licences

- Identify all approvals and licences required under environment protection legislation including details of all scheduled activities, types of ancillary activities and types of discharges (to air, land, water).

G. Compilation of mitigation measures

- Outline how the proposal and its environmental protection measures would be implemented and managed in an integrated manner so as to demonstrate that the proposal is capable of complying with statutory obligations under DEC licences or approvals (eg outline of an environmental management plan).
- The mitigation strategy should include the environmental management and cleaner production principles which would be followed when planning, designing, establishing and operating the proposal. It should include two sections, one setting out the program for managing the proposal and the other outlining the monitoring program with a feedback loop to the management program.

H. Justification for the Proposal

- Reasons should be included which justify undertaking the proposal in the manner proposed, having regard to the potential environmental impacts.