Appendix 1 Planning Permissions

05-138-01

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RECEIVED 19 DEC 2005

NOTIFICATION OF DECISION TO GRANT PERMISSION
PLANNING AND DEVELOPMENT ACTS, 2000-2004 AND REGULATIONS MADE THEREUNDER

Decision Order No. 4145	**Decision Date** 15 December, 2005
Register Ref. F05A/1156	**Registered** 21 November, 2005

Applicant Narendale Ltd t/a Panda Waste Services

Development Development of a Materials Recycling Facility at Cappagh Road Cappoge Td Finglas, Dublin 11 comprising A) the following buildings A1) Construction and Demolition, Commercial and Industrial Recycling Unit with associated offices (area c.2076m_, height to eaves 11.2m), A2)Dry Recyclables unit with associated offices (area c.3062m_, height to eaves 11.2m), A3) Municipal Solid Wastes Recycling Unit (area c.5870m_, height to eaves 11.2m). A4) ESB substation and switchroom (area c.21.75m_, height to eaves 3m). B)Weighbridge and Office (area 3.5m2 height to eaves 3.8m) C) 2.5kw Wind Turbine (11m high). D) Associated site works including fencing, acoustic barrier, entrance gates, drainage. A Waste Permit application will accompany this application.

Location Cappagh Road, Cappoge Td, Finglas, Dublin 11

Floor Area 11033.25 Sq Metres

Time extension(s) up to and including

Additional Information Requested / Received 10-Oct-2005 / 21-Nov-2005

In pursuance of its functions under the above mentioned Acts, as Planning Authority, the County Council for the County of Fingal did by Order dated as above make a decision to **GRANT PERMISSION** in respect of the above proposal

Eamon Waters c/o Panda Waste
Beaupare Business Park
Rathdrinagh
Navan
Meath

Reg. Ref.: F05A/1156

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Subject to the (19) conditions on the attached Pages.

Signed on behalf of the Fingal County Council

15 December,

2005

for Senior Executive Officer

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Conditions and Reasons

1. The development to be carried out in its entirety in accordance with the plans, particulars, specifications, and information lodged with the application as amended by additional information recieved on 21st November 2005, save as may be required by the other conditions attached hereto.

   REASON: To ensure that the development shall be in accordance with the permission and that effective control be maintained.

2. That the proposed development shall be amended as follows:
   (a) That both the Dry Recycling Unit (Building 200) and Municipal Solid Waste Unit (Building 300) shall be omitted from the development.
   (b) That Building 100 (Construction and Demolition, Commercial and Industrial Unit) shall be restricted to the processing of 50,000 tonnes of waste per annum

   REASON: In the interests of the proper planning and development of the area and with regard to the existing capacity of the adjoining road network

3. That the fire turning circle at the south eastern corner of the site shall be kept free of vehicles at all times and shall not be used for storage of any machinery, waste or other materials.

   REASON: In the interests of safety and amenity.

4. That waste material shall be off-loaded from delivery vehicles and stored/processed internally within the proposed building. Waste material shall not be stored externally within the site.

   REASON: In the interests of the proper planning and development of the area

5. That the following requirements of the Transportation Department, Fingal County Council shall be strictly adhered to in the development:
   (a) The ditch along the site frontage shall be piped with pipes of adequate size and strength to the satisfaction of the Area Engineer, Roads Maintenance, and positive drainage, i.e. gullies, shall be provided along the public road (Cappagh Road) over the entire site frontage. Gullies shall be provided at a minimum rate of 1 per $200m^2$ of road width. At all sag curves and at all other locations were ponding could occur, two gullies, side by side, shall be provided with separate inlets to the surface water drainage system.
   (b) No vehicles shall park, nor shall any goods or objects be stored or located, within the

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entrance area at any time. For the purposes of this condition the entrance area is defined as that area between the sliding security gate and the public road. Double yellow lines (in accordance with the Traffic Signs Manual) shall be provided within the entrance area. The sliding security gate shall remain in the fully open position during all periods that the development is operating or in use.

(c) The entrance area shall be illuminated in order to facilitate users in identifying and accessing the site and to highlight the access point/junction to other road users. Prior to commencement of the development, the applicant shall submit technical details of lamp installations and illumination levels to the Planning Authority. The lighting scheme shall not cause excessive glare or distraction to road users or nuisance to adjoining property owners. In this regard, the level and/or nature of illumination may be reviewed at any time by the Transportation Department and adjustments shall be made by the applicant upon request at his/her own expense.

(d) No vehicles shall park, nor shall any goods or objects be stored or placed, in or about the site in such a manner or location that the truck slip road to the south of the weighbridge becomes obstructed or non-utilisable.

(e) A pedestrian gate shall be provided within the boundary wall/railing at/near the site entrance which shall be linked by footpath to the Office Building. This gate shall link to the proposed footpath/cyclepath to be provided under the Cappagh Road Realignment Scheme.

(f) Parking spaces shall be lined/marked in accordance with the "Traffic Signs Manual", 1996 and the "Guidelines on Tender Documentation for Road Marking Materials", 2000, published by the Dept of Environment, Heritage and Local Government. Delineation lines shall be white thermoplastic (to EN 1436, 1997), with a minimum thickness of 3mm and a minimum width of 100mm. Disabled Parking Bays shall be 4.8m long and 3.6m in width and shall be marked and signed (if necessary using contrasting marking colours or materials) so that their location, allocation and use is clearly apparent.

(g) Car-parking spaces numbers 44 & 45 shall be relocated to the satisfaction of the Engineer, Roads Planning, in order to increase their visibility to other users of the facility.

(h) A permanent written record shall be maintained of all goods vehicles entering the site which record shall contain the following details: vehicle description/registration, time and date of weighing, gross/tare/net weights, and nature of the load. This record shall be made available to the Planning Authority for inspection/review upon demand.

REASON: In the interests of road safety.

6. That the proposed facility shall be not available for use directly by members of the general public.

REASON: In the interests of the proper planning and development of the area.

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7. That the following requirements of the County Council in relation to foul sewer drainage infrastructure for the proposed development shall be strictly adhered to:
(a) No foul drainage shall discharge to the surface water system under any circumstances

REASON: In the interests of public health.

8. That the following requirements of the County Council in relation to surface water drainage infrastructure for the proposed development shall be strictly adhered to:
(a) Prior to works commencing the applicant shall submit for the written agreement of the Water Services Department drainage details demonstrating:
(i) All runoff from yards and roads shall be routed through suitability sized oil/silt interceptor
(ii) Adequate provision shall be made to retain firewater runoff
(iii) Adequate provision shall be made to prevent runoff from within the buildings including washdown water draining to the surface water system
(b) No surface or rain water shall discharge to the foul sewer system under any circumstances

REASON: In the interests of public health.

9. That the following requirements of the County Council in relation to the water supply infrastructure for the proposed development shall be strictly adhered to:
(a) Supply shall be metered at applicant's prior expense. Applicant shall ensure that the facility for metering both the premises and the individual non-domestic units is to be designed and constructed in order to ensure full conformity with the Government's Water Pricing Framework policy. The Applicant shall obtain written local authority approval for the design of the metering installation prior to construction.
(b) The following works shall be carried out by Fingal County Council at the applicants prior expense:
(i) The connection to the public water main
(ii) The testing, cleansing and sterilisation of all new mains
(iii) The provision of tappings to serve individual properties
(c) The applicant shall provide 24 hour water storage on site.
(d) All water fittings and installations shall incorporate best current practices in water conservation.
(e) Development shall not be occupied pending the commissioning of the Ballycoolin High Level Water Supply Scheme unless the applicants can demonstrate to the satisfaction of the Water Services Department the provision of a temporary boosting system. All costs associated with any interim works shall be borne by the developer.

REASON: In the interests of public health.

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10. That a comprehensive landscape plan with full specifications and bill of quantities including screen planting and management company proposals for the upkeep of these areas to be submitted and agreed in writing with the Planning Authority prior to the commencement of development on site. Landscaping and boundary treatment works shall be completed prior to the operation of the proposed development.

REASON: In the interests of the proper planning and development of the area.

11. That the proposed development shall comply with the Noise Guidelines of Fingal County Council. In this regard:
(a) The premises shall only be used for any purpose including collection and return of vehicles and waste receptacles between the hours of 08:00 to 20:00 Monday to Friday and 08:00 to 16:00 on Saturdays. A monitoring system to ensure compliance with this condition shall be agree with the Council before development commences.
(b) An odour control programme shall be agree with the Council and installed before operation commences in order to minimise odours.

REASON: In the interests of the amenities of the area.

12. No advertising sign or structures shall be erected on the site without prior approval of the Planning Authority.

REASON: In the interests of visual amenity.

13. That the following requirements in relation to the tree and hedgerow coverage of the site be adhered to in the proposed development:
(a) Prior to the commencement of development details of protection measures during construction shall be agreed with the Parks Division, Fingal County Council. These shall comply with B.S. 5837: 1991.
(b) A tree bond of euro10,000 shall be lodged with the Planning Authority prior to the commencement of works to ensure protection of trees and to repair any damage caused during construction. This bond shall be refundable on satisfactory completion of the development.

REASON: In the interest of the visual and landscape amenities of the area.

14. That all public services to the proposed development, including electrical, telephone cables and equipment be located underground throughout the entire site.

REASON: In the interest of amenity.

15. No materials to which the European Communities (Control of Major Accident Hazards Involving Dangerous Substances) Regulations 2000, S.I. No.476 of 2000 (Seveso II)

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applies shall be stored in the proposed premises without the prior grant of planning permission by the Planning Authority or An Bord Pleanala. This shall form a clause in any leasing or sale agreement for the development.

REASON: In the interests of the proper planning and development of the area.

16. Prior to the commencement of development a comprehensive and specific plan for the treatment of all boundaries of the site shall be agreed in writing with the Planning Authority.

REASON: In the interest of the visual and landscape amenities of the area.

17. That all necessary measures including the provision of wheel wash facilities be taken by the contractor to prevent the spillage or deposit of clay, rubble or other debris on adjoining roads during the course of the works.

REASON: To protect the amenities of the area.

18. This development shall not be carried out without the payment of a development contribution.

REASON: Investment by Fingal County Council in Local Authority works has facilitated and will facilitate the proposed development. It is considered appropriate and reasonable that the developer should contribute to the cost of same.

19. The developer shall pay the sum of € 201,082 (updated at date of commencement of development, in accordance with changes in the Tender Price Index) to the planning authority as a contribution towards expenditure that was/or that is proposed to be incurred by the planning authority in respect of public infrastructure and facilities benefiting development in the area of the Authority, as provided for in the Contribution Scheme for Fingal County made by the council. The phasing of payments and the giving of security to ensure payment shall be agreed in writing with the planning authority prior to the commencement of development.

REASON: It is considered reasonable that the payment of a contribution be required in respect of the public infrastructure and facilities benefiting development in the area of the planning authority and that is provided, or that is intended will be provided, by or on behalf of the Local Authority.

NOTE: A number of the conditions attached to the planning permission may need compliance submissions to be lodged and agreed prior to commencement of

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development. Failure to comply with a condition of the planning permission is an offence under Section 151 of the Planning and Development Act 2000. Copies of each compliance submission should be made in triplicate.

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Notification of Grant of Permission
PLANNING AND DEVELOPMENT ACTS 2000-2007 AND REGULATIONS MADE THEREUNDER

Final Grant Order No. 3016	**Date of Final Grant** 01-Oct-2008
Decision Order No. 4334	**Date of Decision** 20-Dec-2007
Register Reference F07A/0954	**Registration Date** 29-Nov-2007

Applicant Nurendale Ltd (t/a Panda Waste Services)

Development The extension to the existing Materials Recycling Facility at Cappagh Road, Cappoge Td, Finglas, Dublin 11 comprising A) The following buildings A2) An extension to the existing A1 building for a Municipal Solid Wastes Recycling unit (area c 2030 m² height to eaves c 11m) B1) Dry Recyclables unit (area c 2800 m², height to eaves c 11 m) B2) Cardboard and Plastics recycling unit (area c 4608 m², height to eaves c 11 m²) C) E S B substation and switchrooms (area c 56 m², height to eaves c 5 50m) D) Associated site works

Location Cappagh Road, Cappoge Td Finglas, Dublin 11

Floor Area 9474 sq m

Time extension(s) up to and including

Additional Information Requested / **Received** 17-Sep-2007 / 29-Nov-2007

A **Permission** has been granted for the development described above, subject to the **(17)** condition(s) on the attached pages

Signed on behalf of the Fingal County Council

for Senior Executive Officer

1st October, 2008

O'Callaghan Moran & Associates
Granay House
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Conditions and Reasons

1. The development to be carried out in its entirety in accordance with the plans, particulars, specifications, and information lodged with the application, as amended by additional information received on 29th November 2007, save as may be required by the other conditions attached hereto

   REASON To ensure that the development shall be in accordance with the permission and that effective control be maintained

2. That the proposed development shall be amended as follows
   (a) That the extension to the existing A1 building for a Municipal Solid Waste Unit (Building A2) shall be omitted from the development

   REASON In the interests of the proper planning and development of the area

3. The facility shall not commence operations of this extension phase of the development until the Cappagh Road Realignment is completed and fully operational and the applicant has received the written consent of the Planning Authority and the Transportation Department of Fingal County Council

   REASON In the interest of traffic safety

4. That waste material shall be off-loaded from delivery vehicles and stored/processed internally within the proposed building Waste material shall not be stored externally within the site

   REASON In the interests of the proper planning and development of the area

5. That the following requirements of the Transportation Department, Fingal County Council shall be strictly adhered to in the development

   (a) Road junction visibility requirements shall comply with TD 42/95 and/or TD 41/95, as appropriate, of the 'Design Manual for Roads and Bridges' as amended by the NRA No objects, structures or landscaping shall be placed or installed within the visibility triangle which interfere with or obstruct (or could obstruct over time) the required visibility envelopes Plans of verge/boundary planting/landscaping proposals (on which all required visibility spays are clearly superimposed) shall be submitted for written approval and compliance purposes

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(b) The Location of the proposed Island will be agreed with FCC Road Design and will not impede the turning movements of trucks into the facility.

(c) No vehicles shall park, nor shall any goods or objects be stored or located, within the entrance area at any time For the purposes of this condition the entrance area is defined as that area between the sliding security gate and the public road Double yellow lines (in accordance with the Traffic Signs Manual) shall be provided within the entrance area The security gates shall remain in the fully open position during all periods that the development is operating or in use

(d) The lighting scheme shall not cause excessive glare or distraction to road users or nuisance to adjoining property owners In this regard, the level and/or nature of illumination may be reviewed at any time by the Transportation Department and adjustments shall be made by the applicant upon request at his/her own expense

(e) No vehicles shall park, nor shall any goods or objects be stored or placed, in or about the site in such a manner or location that the weighbridge becomes obstructed or non-utilisable or causes queuing of traffic out on to the Cappagh road

(f) Parking spaces shall be lined/marked in accordance with the "Traffic Signs Manual", 1996 and the "Guidelines on Tender Documentation for Road Marking Materials", 2000, published by the Dept of Environment, Heritage and Local Government Delineation lines shall be white thermoplastic (to EN 1436, 1997), with a minimum thickness of 3mm and a minimum width of 100mm Disabled Parking Bays shall be 4 8m long and 3.6m in width and shall be marked and signed (if necessary using contrasting marking colours or materials) so that their location, allocation and use is clearly apparent

(g) A permanent written record shall be maintained of all goods vehicles entering the site which record shall contain the following details vehicle description/registration, time and date of weighing, gross/tare/net weights, and nature of the load This record shall be made available to the Planning Authority for inspection/review upon demand

(h) All stormwater falling within the site (including the entrance driveway/paved areas etc) shall be intercepted/collected and disposed of to ensure that no surface water from the development discharges onto the public road

REASON In the interest of the proper planning and development of the area

6. That the proposed facility shall be not available for use directly by members of the general public

REASON In the interests of the proper planning and development of the area

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7 Prior to the commencement of development the requirements of the Principal Environmental Health Officer shall be ascertained and thereafter strictly adhered to in the development

REASON In the interests of the proper planning and development of the area

8. The water supply and drainage infrastructure including the disposal of surface water shall comply with the technical requirements of the Planning Authority In particular the following requirements of the Water Services Department shall be complied with in this development

FOUL SEWER
1 No foul drainage shall discharge into the surface water system under any circumstances
2 The foul drainage shall be in compliance with the 'Regional Code of Practice for Drainage Works Version 6 0' FCC April 2006
3 The proposed structure foundation must be brought to the same level as the invert level of the public foul sewer

SURFACE WATER
1 No surface water/ rainwater shall discharge into the foul sewer system under any circumstances
2 The surface water drainage shall be in compliance with the 'Regional Code of Practice for Drainage Works Version 6 0' FCC April 2006
3 The proposed structure foundation must be brought to the same level as the invert level of the public foul sewer

WATER SUPPLY
1 All water fittings and installations must incorporate best current practices in water conservation
2 The water supply for the development must comply with the 'Guidelines for Laying of Distribution Watermains' Water Services Department, FCC, Dec 2004

REASON In the interest of the proper planning and development of the area

9. That a comprehensive landscape plan with full specifications and bill of quantities including screen planting and management company proposals for the upkeep of these areas to be submitted and agreed in writing with the Planning Authority prior to the commencement of development on site Landscaping and boundary treatment works shall be completed prior to the operation of the proposed development

REASON In the interests of the proper planning and development of the area

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10. That the proposed development shall comply with the Noise Guidelines of Fingal County Council In this regard
(a) The premises shall only be used for any purpose including collection and return of vehicles and waste receptacles between the hours of 08 00 to 20 00 Monday to Friday and 08 00 to 16 00 on Saturdays A monitoring system to ensure compliance with this condition shall be agree with the Council before development commences
(b) An odour control programme shall be agree with the Council and installed before operation commences in order to minimise odours

REASON In the interests of the amenities of the area

11. No advertising sign or structures shall be erected on the site without prior approval of the Planning Authority

REASON In the interests of visual amenity

12. That all public services to the proposed development, including electrical, telephone cables and equipment be located underground throughout the entire site

REASON In the interest of amenity

13. No materials to which the European Communities (Control of Major Accident Hazards Involving Dangerous Substances) Regulations 2000, S I No 476 of 2000 (Seveso II) applies shall be stored in the proposed premises without the prior grant of planning permission by the Planning Authority or An Bord Pleanala This shall form a clause in any leasing or sale agreement for the development

REASON In the interests of the proper planning and development of the area

14. Prior to the commencement of development a comprehensive and specific plan for the treatment of all boundaries of the site shall be agreed in writing with the Planning Authority

REASON In the interest of the visual and landscape amenities of the area

15. That all necessary measures including the provision of wheel wash facilities be taken by the contractor to prevent the spillage or deposit of clay, rubble or other debris on adjoining roads during the course of the works

REASON To protect the amenities of the area

16. Prior to commencement of development, a construction management plan shall be submitted to the planning authority for written agreement This plan shall provide details

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of intended construction practice for the development, including hours of working, noise management measures, off-site disposal of construction/demolition waste and a scheme for dust and dirt control

REASON In the interest of amenities and public safety

17. The developer shall pay the sum of €857,008 (updated at date of commencement of development, in accordance with changes in the Tender Price Index) to the planning authority as a contribution towards expenditure that was/or that is proposed to be incurred by the planning authority in respect of public infrastructure and facilities benefiting development in the area of the Authority, as provided for in the Contribution Scheme for Fingal County made by the council The phasing of payments and the giving of security to ensure payment shall be agreed in writing with the planning authority prior to the commencement of development

REASON It is considered reasonable that the payment of a contribution be required in respect of the public infrastructure and facilities benefiting development in the area of the planning authority and that is provided, or that is intended will be provided, by or on behalf of the Local Authority

NOTE:

All buildings must now be designed and constructed in accordance with the Building Regulations The Building Control Regulations also provide that a Commencement Notice must be submitted to the Building Control Authority in respect of all buildings other than exempted development for the purposes of the Planning and Development Act 2000 and Regulations made thereunder, not less than fourteen days and not more than twenty-eight days before development commences A copy of the form of Commencement Notice is attached

In addition, with the exception of houses and certain agricultural buildings, a Fire Safety Certificate is required for all buildings (including apartments and flats), extensions and alterations and changes of use which are covered by the Building Regulations

A number of the conditions attached to the planning permission may need compliance submissions to be lodged and agreed prior to commencement of development Please submit 5 copies of all documentation in relation to compliance submissions Failure to comply with a condition of the planning permission is an offence under Section 151 of the Planning and Development Act 2000.

Appendix 2 Waste Licence

Headquarters
P.O. Box 3000
Johnstown Castle Estate
County Wexford
Ireland

WASTE LICENCE

Licence Register Number:	W0261-01
Licensee:	Nurendale Limited trading as Panda Waste Services
Location of Facility:	Cappagh Road, Finglas, Dublin 11.

HEADQUARTERS
JOHNSTOWN CASTLE ESTATE
COUNTY WEXFORD, IRELAND
PHONE: +353-53-9160600
FAX: +353-53-9160699

WASTE MANAGEMENT ACTS, 1996 TO 2010

WASTE LICENCE

Decision of the Agency, under Section 40(1) of the Waste Management Acts, 1996 to 2010

Waste Licence Register No: **W0261-01**

Further to notice dated the 27th day of April, 2010, the Agency in exercise of the powers conferred on it by the Waste Management Acts, 1996 to 2010, for the reasons hereinafter set out in the attached Decision, grants this waste licence to Nurendale Limited trading as Panda Waste Services, Beauparc Business Park, Rathdrinagh, Navan, County Meath to carry on the waste activities set out below at Cappagh Road, Finglas, Dublin 11, subject to twelve Conditions, as set out in the schedules attached thereto.

A copy of the Decision is attached.

Licensed Waste Activities

Waste Disposal Activities, in accordance with the Third Schedule of the Waste Management Acts, 1996 to 2010:

Class 11.	Blending or mixture prior to submission to any activity referred to in a preceding paragraph of this Schedule.
Class 12.	Repacking prior to submission to any activity referred to in a preceding paragraph of this Schedule.
Class 13.	Storage prior to submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where the waste concerned is produced.

Waste Recovery Activities, in accordance with the Fourth Schedule of the Waste Management Acts, 1996 to 2010:

Class 2.	Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological processes). [Principal Activity]
Class 3.	Recycling or reclamation of metals and metal compounds.
Class 4.	Recycling or reclamation of other inorganic materials.
Class 13.	Storage of waste intended for submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where such waste is produced.

Sealed by the seal of the Agency on this the 31st day of August 2010

PRESENT when the seal of the Agency was affixed hereto:

Laura Burke, Director/Authorised Person

INTRODUCTION

This introduction is not part of the licence and does not purport to be a legal interpretation of the licence.

This licence is for the operation of a materials recovery and waste transfer facility for non-hazardous waste by Nurendale Limited trading as Panda Waste Services. The facility is located at Cappagh Road, Finglas, Dublin 11.

The facility currently operates under a waste permit issued by Fingal County Council, with a maximum permitted waste throughput of 50,000 tonnes per annum. This licence authorises the expansion of the facility to accommodate the acceptance and processing of 200,000 tonnes of waste per annum. The waste types to be accepted at the facility are construction and demolition waste, household, commercial and industrial dry recyclables. The facility is not authorised to process mixed municipal solid waste.

When fully developed, the site will be occupied by three main buildings. All waste off-loading, handling and processing will be carried out inside the buildings. Waste processing will involve unloading, separation, sorting, crushing, trommelling, shredding, screening, baling and storage pending consignment off-site for re-use or further processing. Residual waste from the facility will be sent off-site for disposal.

There are no process emissions to waters or sewer from the facility. Waste water from floor washdown and sanitary effluent from the site office is collected in an underground concrete storage tank and tankered off-site to an agreed waste water treatment plant.

Storm water run-off from roofs and paved areas discharges to the surface water drainage system serving the adjacent business park, which ultimately discharges into a tributary of the River Tolka.

There is minimal risk of odour nuisance, as this facility will not be processing municipal solid waste. Mitigation measures will be employed to manage dust and noise emissions from the waste activities.

The licensee must manage and operate the facility to ensure that the activities do not cause environmental pollution. The licensee is required to carry out regular environmental monitoring and submit all monitoring results, and a wide range of reports on the operation and management of the facility, to the Agency.

The licence sets out in detail the conditions under which Nurendale Limited trading as Panda Waste Services will operate and manage this facility.

Table of Contents

Glossary of Terms

All terms in this licence should be interpreted in accordance with the definitions in the Environmental Protection Agency Acts 1992 to 2007 / Waste Management Acts 1996 to 2010, unless otherwise defined in the section.

Adequate lighting	20 lux measured at ground level.
AER	Annual Environmental Report.
Agreement	Agreement in writing.
Annually	At approximately twelve-monthly intervals.
Application	The application by the licensee for this licence.
Appropriate Facility	A waste management facility, duly authorised under relevant law and technically suitable.
Attachment	Any reference to Attachments in this licence refers to attachments submitted as part of this licence application.
BAT	Best Available Techniques.
Biannually	All or part of a period of six consecutive months.
Biennially	Once every two years.
Biodegradable Waste	Waste that is capable of undergoing anaerobic or aerobic decomposition, such as food and garden waste, paper and cardboard, etc.
Biodegradable Municipal Waste (BMW)	The biodegradable component of municipal waste, typically composed of food and garden waste, wood, paper, cardboard and textiles. BMW does not include bio-stabilised waste.
Bio-stabilised Residual Waste	Residual BMW that has been treated to achieve an EPA approved biodegradability stability standard prior to landfilling or alternative use agreed. Not a compost product standard as understood by EU 1774/2002.
BOD	5 day Biochemical Oxygen Demand (without nitrification suppression).
CEN	Comité Européen De Normalisation – European Committee for Standardisation.
Characterisation of waste	The sampling and analysis of waste to determine, amongst other things, its nature and composition, including the proportion of biodegradable, recyclable and other materials in the waste.

Classification of waste	The classification of waste as inert, non-hazardous or hazardous for the purpose of Article 4 of Council Directive (1999/31/EC) on the landfill of waste.
Coding of waste	The allocation of a European Waste Catalogue/Hazardous Waste List code and a concise/standardised description of the waste, including information on the source of the waste, e.g. municipal, industrial, construction and demolition, etc.
COD	Chemical Oxygen Demand.
Commercial Waste	As defined in Section 5(1) of the Waste Management Acts 1996 to 2010.
Construction and demolition (C&D) waste	Wastes that arise from construction, renovation and demolition activities: Chapter 17 of the EWC or as otherwise may be agreed.
Containment boom	A boom that can contain spillages and prevent them from entering drains or watercourses or from further contaminating watercourses.
Daily	During all days of plant operation and, in the case of emissions, when emissions are taking place; with at least one measurement on any one day.
Day	Any 24 hour period.
Daytime	0800 hrs to 2200 hrs.
dB(A)	Decibels (A weighted).
DO	Dissolved oxygen.
Documentation	Any report, record, results, data, drawing, proposal, interpretation or other document in written or electronic form which is required by this licence.
Drawing	Any reference to a drawing or drawing number means a drawing or drawing number contained in the application, unless otherwise specified in this licence.
EMP	Environmental Management Programme.
Emission limits	Those limits, including concentration limits and deposition rates, established in *Schedule B: Emission Limits* of this licence.
Environmental damage	As defined in Directive 2004/35/EC.
EPA	Environmental Protection Agency.
European Waste Catalogue (EWC)	A harmonised, non-exhaustive list of wastes drawn up by the European Commission and published as Commission Decision 2000/532/EC and any subsequent amendment published in the Official Journal of the European Community.

Facility	Any site or premises used for the purpose of the recovery of disposal of waste.
Fortnightly	A minimum of 24 times per year, at approximately two week intervals.
GC/MS	Gas chromatography/mass spectroscopy.
Green Waste	Waste wood (excluding timber), plant matter such as grass cuttings, and other vegetation.
ha	Hectare
Heavy metals	This term is to be interpreted as set out in "Parameters of Water Quality, Interpretation and Standards" published by the Agency in 2001. ISBN 1-84095-015-3.
Hours of operation	The hours during which the facility is authorised to be operational
Hours of waste acceptance	The hours during which the facility is authorised to accept waste.
ICP	Inductively coupled plasma spectroscopy.
Incident	The following shall constitute as incident for the purposes of this licence: (i) an emergency; (ii) any emission which does not comply with the requirements of this licence; (iii) any exceedance of the daily duty capacity of the waste handling equipment; (iv) any trigger level specified in this licence which is attained or exceeded; and, (v) any indication that environmental pollution has, or may have, taken place.
Industrial waste	As defined in Section 5(1) of the Waste Management Acts 1996 to 2010.
Inert waste	Waste that does not undergo any significant physical, chemical or biological transformations. Inert waste will not dissolve, burn or otherwise physically or chemically react, biodegrade or adversely affect other matter with which it comes into contact in a way likely to give rise to environmental pollution or harm human health. The total leachability and pollutant content of the waste and the ecotoxicity of the leachate must be insignificant, and in particular must not endanger the quality of surface water and/or groundwater.
IPPC	Integrated Pollution Prevention & Control.
Landfill Directive	Council Directive 1999/31/EC.

L_{eq}	Equivalent continuous sound level.
Licence	A Waste Licence issued in accordance with the Waste Management Acts 1996 to 2010.
Licensee	Nurendale Limited trading as Panda Waste Services, Beauparc Business Park, Rathdrinagh, Navan, County Meath.
Liquid waste	Any waste in liquid form and containing less than 2% dry matter.
List I	As listed in the EC Directives 2006/11/EC and 80/68/EEC and amendments.
List II	As listed in the EC Directives 2006/11/EC and 80/68/EEC and amendments.
Local Authority	Fingal County Council.
Maintain	Keep in a fit state, including such regular inspection, servicing, calibration and repair as may be necessary to perform its function adequately.
Monthly	A minimum of 12 times per year, at intervals of approximately one month.
Municipal Solid Waste	Household waste as well as commercial and other waste which, because of its nature or composition, is similar to household waste. It excludes municipal sludges and effluents.
Night-time	2200 hrs to 0800 hrs.
Noise-sensitive location (NSL)	Any dwelling house, hotel or hostel, health building, educational establishment, place of worship or entertainment, or any other facility or area of high amenity which for its proper enjoyment requires the absence of noise at nuisance levels.
Oil separator	Device installed according to the International Standard I.S. EN 858-2:2003 (Separator system for light liquids, (e.g. oil and petrol) – Part 2: Selection of normal size, installation, operation and maintenance).
PRTR	Pollutant Release and Transfer Register.
Quarterly	At approximately three – monthly intervals. All or part of a period of three consecutive months beginning on the first day of January, April, July or October.
Recyclable materials	Waste types, such as paper, cardboard, glass, metals, etc., which may be recycled.
Residual Waste	The fraction of collected waste remaining after a treatment or diversion step, which generally requires further treatment or disposal.

Sample(s)	Unless the context of this licence indicates to the contrary, the term samples shall include measurements taken by electronic instruments.
Sanitary effluent	Wastewater from facility toilet, washroom and canteen facilities.
SOP	Standard operating procedure.
Source segregated waste	Waste which is separated at source; meaning that the waste is sorted at the point of generation into a recyclable fraction(s) for separate collection (e.g., paper, metal, glass, plastic, bulk dry recyclables, biodegradables, etc.,) and a residual fraction. The expression 'separate at source' shall be construed accordingly.
Specified emissions	Those emissions listed in *Schedule B: Emission Limits* of this licence.
Specified Engineering Works	Engineering works listed in *Schedule D: Specified Engineering Works* of this licence.
Standard method	A National, European or internationally recognised procedure (e.g. I.S. EN, ISO, CEN, BS or equivalent); or an in-house documented procedure based on the above references; a procedure as detailed in the current edition of "Standard Methods for the Examination of Water and Wastewater" (prepared and published jointly by A.P.H.A., A.W.W.A. & W.E.F.), American Public Health Association, 1015 Fifteenth Street, N.W., Washington DC 20005, USA; or an alternative method as may be agreed by the Agency.
Storm water	Rain water run-off from roof and non-process areas.
Temporary storage	In relation to waste is a period of less than six months as defined in the Waste Management Acts 1996 to 2010.
The Agency	Environmental Protection Agency.
TA Luft	Technical Instructions on Air Quality Control – TA Luft in accordance with art. 48 of the Federal Immission Control Law (BImSchG) dated 15 March 1974 (BGBI. I p 721). Federal Ministry for Environment, Bonn 1986, including the amendment for Classification of Organic Substances according to section 3.1.7 TA. Luft, published in July 1997.
TOC	Total organic carbon.
Trade effluent	Trade effluent has the meaning given in the Water Services Act, 2007.
Trigger level	A parameter value, the achievement or exceedance of which requires certain actions to be taken by the licensee.
Treatment/pre-treatment	Any manual, thermal, physical, chemical or biological processes that change the characteristics of waste in order to reduce its volume or hazardous nature or facilitate its handling, disposal or recovery.

Water Services Authority	Fingal County Council.
WEEE	As defined in S.I. No. 340 of 2005.
Weekly	During all weeks of plant operation and, in the case of emissions, when emissions are taking place; with at least one measurement in any one week.
WWTP	Waste water treatment plant.

Decision & Reasons for the Decision

The Environmental Protection Agency is satisfied, on the basis of the information available, that subject to compliance with the conditions of this licence, any emissions from the activity will comply with and will not contravene any of the requirements of Section 40(4) of the Waste Management Acts 1996 to 2010.

In reaching this decision the Environmental Protection Agency has considered the application, supporting documentation and objection received from the applicant, a submission received from another party, and the reports of its inspectors.

Part I Schedule of Activities Licensed

In pursuance of the powers conferred on it by the Waste Management Acts 1996 to 2010, the Environmental Protection Agency (the Agency), under Section 40(1) of the said Acts hereby grants this Waste Licence to Nurendale Limited trading as Panda Waste Services, Beauparc Business Park, Rathdrinagh, Navan, County Meath to carry on the waste activities listed below at Cappagh Road, Finglas, Dublin 11, subject to conditions, with the reasons therefor and the associated schedules attached thereto set out in the licence.

Licensed Waste Disposal Activities, in accordance with the Third Schedule of the Waste Management Acts 1996 to 2010

Class 11.	Blending or mixture prior to submission to any activity referred to in a preceding paragraph of this Schedule.
Class 12.	Repacking prior to submission to any activity referred to in a preceding paragraph of this Schedule.
Class 13.	Storage prior to submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where the waste concerned is produced.

Licensed Waste Recovery Activities, in accordance with the Fourth Schedule of the Waste Management Acts 1996 to 2010

Class 2.	Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological processes). [Principal Activity]
Class 3.	Recycling or reclamation of metals and metal compounds.
Class 4.	Recycling or reclamation of other inorganic materials.
Class 13.	Storage of waste intended for submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where such waste is produced.

Part II Schedule of Activities Refused

None of the proposed activities as set out in the licence application have been refused.

Part III Conditions

Condition 1. Scope

1.1 Waste activities at this facility shall be restricted to those listed and described in *Part I Schedule of Activities Licensed*, and shall be as set out in the licence application or as modified under Condition 1.4 of this licence and subject to the conditions of this licence.

1.2 Activities at this facility shall be limited as set out in *Schedule A: Limitations* of this licence. Until such time as the proposed 'stage 2' infrastructure (i.e. Dry Recyclables Building and Paper & Cardboard Building) has been installed to the satisfaction of the Agency, annual waste intake shall be limited to 50,000 tonnes per annum. Subject to the agreement of the Agency, the licensee shall be permitted to accept a maximum waste intake of 200,000 tonnes per annum.

1.3 Mixed municipal solid waste, other than mixed dry recyclables as described in *Schedule A.2 Waste Acceptance* of this licence, shall not be accepted at the facility.

1.4 For the purposes of this licence, the facility is the area of land outlined in red on Drawing No. 07.07_7.01 *Site Layout Plan* of the application. Any reference in this licence to "facility" shall mean the area thus outlined in red. The licensed activities shall be carried on only within the area outlined.

1.5 No alteration to, or reconstruction in respect of, the activity, or any part thereof, that would, or is likely to, result in

(i) a material change or increase in:

- the nature or quantity of any emission;
- the abatement/treatment or recovery systems;
- the range of processes to be carried out;
- the fuels, raw materials, intermediates, products or wastes generated, or

(ii) any changes in:

- site management, infrastructure or control with adverse environmental significance;

shall be carried out or commenced without prior notice to, and without the agreement of, the Agency.

1.6 The facility shall be controlled, operated and maintained, and emissions shall take place as set out in the licence. All programmes required to be carried out under the terms of this licence become part of this licence.

1.7 This licence is for purposes of waste licensing under the Waste Management Acts 1996 to 2010 only and nothing in this licence shall be construed as negating the licensee's statutory obligations, or requirements under any other enactments or regulations.

1.8 Waste Acceptance Hours and Hours of Operation

1.8.1 Waste shall be accepted at or dispatched from the facility only between the hours of 0600 and 2200 Monday to Saturday inclusive, unless otherwise agreed by the Agency.

1.8.2 The facility shall be operated only during the hours of 0600 and 2200, Monday to Saturday inclusive, unless otherwise agreed by the Agency.

1.8.3 The facility shall not operate or accept/dispatch waste on Sundays or on Public Holidays without the prior agreement of the Agency.

Reason: ***To clarify the scope of this licence.***

Condition 2. Management of the Facility

2.1 Facility Management

2.1.1 The licensee shall employ a suitable qualified and experienced facility manager who shall be designated as the person in charge. The facility manager or a nominated, suitably qualified and experienced deputy shall be present on the facility at all times during its operation or as otherwise required by the Agency.

2.1.2 The licensee shall ensure that personnel performing specifically assigned tasks shall be qualified on the basis of appropriate education, training and experience as required and shall be aware of the requirements of this licence. In addition, the facility manager and his/her deputy shall successfully complete the FÁS waste management training programme or equivalent agreed by the Agency.

2.2 Environmental Management System (EMS)

2.2.1 The licensee shall establish and maintain an Environmental Management System (EMS) within six months of the date of grant of this licence. The EMS shall be updated on an annual basis.

2.2.2 The EMS shall include, as a minimum, the following elements:

2.2.2.1 Management and Reporting Structure.

2.2.2.2 Schedule of Environmental Objectives and Targets.

The licensee shall prepare and maintain a Schedule of Environmental Objectives and Targets. The schedule shall as a minimum provide for a review of all operations and processes, including an evaluation of practicable options for energy and resource efficiency, the use of cleaner technology and the prevention, reduction and minimisation of waste for disposal. The schedule shall include time frames for the achievement of set targets and shall address a five year period as a minimum. In relation to waste recovery, the schedule shall include an initial waste recovery target of waste throughput, as well as time frames for achieving higher recovery targets. As a minimum this shall include specific objectives for the control and minimisation as well as an annual review of the dust and noise nuisance potential of the site activities. The schedule shall be reviewed annually and amendments thereto notified to the Agency for agreement as part of the Annual Environmental Report (AER).

2.2.2.3 Environmental Management Programme (EMP).

The licensee shall, not later than six months from the date of grant of this licence, submit to the Agency for agreement an EMP, including a time schedule, for achieving the Environmental Objectives and Targets prepared under Condition 2.2.2.2. Once agreed the EMP shall be established and maintained by the licensee. It shall include:

- designation of responsibility for targets;
- the means by which they may be achieved;
- the time within which they may be achieved.

The EMP shall be reviewed annually and amendments thereto notified to the Agency for agreement as part of the Annual Environmental Report (AER).

A report on the programme, including the success in meeting agreed targets, shall be prepared and submitted to the Agency as part of the AER. Such reports shall be retained on-site for a period of not less than seven years and shall be available for inspection by authorised persons of the Agency.

2.2.2.4 Documentation

(i) The licensee shall establish and maintain an environmental management documentation system which shall be to the satisfaction of the Agency.

(ii) The licensee shall issue a copy of this licence to all relevant personnel whose duties relate to any condition of this licence.

2.2.2.5 Corrective Action

The licensee shall establish procedures to ensure that corrective action is taken should the specified requirements of this licence not be fulfilled. The responsibility and authority for persons initiating further investigation and corrective action in the event of a reported non-conformity with this licence shall be defined.

2.2.2.6 Awareness and Training

The licensee shall establish and maintain procedures for identifying training needs, and for providing appropriate training, for all personnel whose work can have a significant effect upon the environment. Appropriate records of training shall be maintained.

2.2.2.7 Communications Programme

The licensee shall establish and maintain a Public Awareness and Communications Programme to ensure that members of the public can obtain information at the facility at all reasonable times, concerning the environmental performance of the facility.

2.2.2.8 Maintenance Programme

The licensee shall establish and maintain, within six months of the date of grant of this licence, a structured programme for maintenance and service of vehicles and equipment. This programme shall be supported by appropriate record-keeping systems and diagnostic testing. The licensee shall clearly allocate responsibility for the planning, management and execution of all aspects of this programme to appropriate personnel (see Condition 2.1 above).

2.2.2.9 Efficient Process Control

The licensee shall establish and maintain a programme to ensure there is adequate control of processes under all modes of operation. The programme shall identify the key indicator parameters for process control performance, as well as identifying methods for measuring and controlling these parameters. Abnormal process operating conditions shall be documented, and analysed to identify any necessary corrective action.

Reason: ***To make provision for management of the activity on a planned basis having regard to the desirability of ongoing assessment, recording and reporting of matters affecting the environment.***

Condition 3. Infrastructure and Operation

3.1 The licensee shall establish and maintain all infrastructure referred to in this licence in advance of the commencement of the licensed activities, or as required by the conditions of this licence. Infrastructure specified in the application that relates to the environmental performance of the installation and is not specified in the licence, shall be installed in accordance with the schedule submitted in the application.

3.2 Facility Notice Board

3.2.1 The licensee shall, within one month of the date of grant of this licence, provide a Facility Notice Board on the facility so that it is legible to persons outside the main entrance to the facility. The minimum dimensions of the board shall be 1200 mm by 750 mm. The notice board shall be maintained thereafter.

3.2.2 The board shall clearly show:

(i) the name and telephone number of the facility;

(ii) the normal hours of opening;

(iii) the name of the licence holder;

(iv) an emergency out of hours contact telephone number;

(v) the licence reference number; and

(vi) where environmental information relating to the facility can be obtained.

3.2.3 A plan of the facility clearly identifying the location of each storage and treatment area shall be displayed as close as is possible to the entrance to the facility. The plan shall be displayed on a durable material such that is legible at all times. The plan shall be replaced as material changes to the facility are made.

3.3 Specified Engineering Works

3.3.1 The licensee shall submit proposals for all Specified Engineering Works, as defined in *Schedule D: Specified Engineering Works*, of this licence, to the Agency for its agreement at least two months in advance of the intended date of commencement of any such works. No such works shall be carried out without the prior agreement of the Agency.

3.3.2 All specified engineering works shall be supervised by a competent person(s) and that person, or persons, shall be present at all times during which relevant works are being undertaken.

3.3.3 Following the completion of all specified engineering works, the licensee shall complete a construction quality assurance validation. The validation report shall be made available to the Agency on request. The report shall, as appropriate, include the following information:

(i) A description of the works;

(ii) As-built drawings of the works;

(iii) Any other information requested in writing by the Agency.

3.4 Facility Security

3.4.1 Security and stockproof fencing and gates shall be installed and maintained. The base of the fencing shall be set in the ground.

3.4.2 The licensee shall install a CCTV system which records all truck movement into and out of the facility; the CCTV system shall be operated at all times and copies of recording kept on site and made available to the Agency on request.

3.4.3 Gates shall be locked shut when the facility is unsupervised.

3.4.4 The licensee shall remedy any defect in the gates and/or fencing as follows:

(i) A temporary repair shall be made by the end of the working day; and

(ii) A repair to the standard of the original gates and/or fencing shall be undertaken within three working days.

3.5 Facility Roads and Site Surfaces

3.5.1 Effective site roads shall be provided and maintained to ensure the safe and nuisance-free movement of vehicles within the facility.

3.5.2 The licensee shall provide and maintain an impermeable concrete surface in all areas of the facility associated with the movement, processing, handling and storage of waste. The surfaces shall be concreted and constructed to British Standard 8110 or an alternative as agreed by the Agency. The licensee shall remedy any defect in concrete surfaces within five working days.

3.6 Facility Office

3.6.1 The licensee shall provide and maintain an office at the facility. The office shall be constructed and maintained in a manner suitable for the processing and storing of documentation.

3.6.2 The licensee shall provide and maintain a working telephone and a method for electronic transfer of information at the facility.

3.7 Waste Inspection and Quarantine Areas

3.7.1 A Waste Inspection Area and a Waste Quarantine Area shall be provided and maintained at the facility.

3.7.2 These areas shall be constructed and maintained in a manner suitable, and be of a size appropriate, for the inspection of waste and subsequent quarantine if required. The waste inspection area and the waste quarantine area shall be clearly identified and segregated from each other.

3.8 Weighbridge

3.8.1 The licensee shall provide and maintain a weighbridge at the facility.

3.9 Waste Handling, Ventilation and Processing Plant

3.9.1 Items of plant deemed critical to the efficient and adequate processing of waste at the facility (including *inter alia* waste-loading vehicles and ejector trailers) shall be provided on the following basis:

(i) 100% duty capacity;

(ii) 20% standby capacity available on a routine basis; and

(iii) Provision of contingency arrangements and/or backup and spares in the case of breakdown of critical equipment.

3.9.2 The licensee shall maintain on site a record detailing the duty and standby capacity in tonnes per day, of all waste handling and processing equipment to be used at the facility. These capacities shall be based on the licensed waste intake, as per *Schedule A: Limitations* and Condition 1.2, of this licence.

3.9.3 The quantity of waste to be accepted at the facility on a daily basis shall not exceed the duty capacity of the equipment at the facility. Any exceedance of this intake shall be treated as an incident.

3.10 Waste Water Management

3.10.1 The licensee shall install and maintain a waste water collection and storage system as outlined in section 5.10 of the 'Project Description' document of the licence application.

3.10.2 All waste water (including sanitary effluent from the site offices, floor washdown and drainage from waste quarantine areas) shall be collected and stored in the on-site waste water storage tanks prior to disposal off-site.

3.10.3 Waste water stored in the on-site storage tanks shall be tankered off-site in fully enclosed road tankers to an agreed Wastewater Treatment Plant.

3.10.4 The licensee shall monitor the available storage capacity in the underground waste water storage tanks on a weekly basis. A log of such inspections shall be maintained.

3.11 Construction and Demolition Waste Recovery Area

3.11.1 The licensee shall provide and maintain a construction and demolition waste recovery area. This infrastructure shall at a minimum comprise the following:

(i) an impermeable concrete slab;

(ii) collection and disposal infrastructure for all run-off;

(iii) appropriate bunding to provide visual and noise screening; and

(iv) containment of all stockpiles to minimise dust generation.

3.11.2 Upon completion of 'Stage 2' infrastructure, only Construction and Demolition waste shall be accepted at this area unless otherwise agreed. Wastes that are capable of being recovered shall be separated and shall be stored temporarily in this area in advance of being subjected to other recovery activities at the facility or transported off the facility.

3.12 Dust and Odour Control

The licensee shall install and provide adequate measures for the control of odours and dust emissions, including fugitive dust emissions, from the facility. Installation of a dust and odour management system shall at a minimum include the following:

3.12.1 All waste transfer buildings shall be adequately sealed to minimise fugitive dust and odour emissions.

3.12.2 Dust curtains (or equivalent approved by the Agency) shall be maintained on the entry/exit points from the waste transfer building; all other doors in this building shall be kept closed where possible.

3.13 Tank, Container and Drum Storage Areas

3.13.1 All tank, container and drum storage areas shall be rendered impervious to the materials stored therein. Bunds shall be designed having regard to Agency guidelines 'Storage and Transfer of Materials for Scheduled Activities' (2004).

3.13.2 All tank and drum storage areas shall, as a minimum, be bunded, either locally or remotely, to a volume not less than the greater of the following:

(i) 110% of the capacity of the largest tank or drum within the bunded area; or

(ii) 25% of the total volume of substance that could be stored within the bunded area.

3.13.3 All drainage from bunded areas shall be treated as hazardous waste unless it can be demonstrated to be otherwise. All drainage from bunded areas shall be diverted for collection and safe disposal.

3.13.4 All inlets, outlets, vent pipes, valves and gauges must be within the bunded area.

3.13.5 All tanks, containers and drums shall be labelled to clearly indicate their contents.

3.14 The licensee shall install on all emission points such sampling points or equipment, including any data-logging or other electronic communication equipment, as may be required by the Agency. All such equipment shall be consistent with the safe operation of all sampling and monitoring systems.

3.15 The licensee shall clearly label and provide safe and permanent access to all on-site sampling and monitoring points and to off-site points as required by the Agency. The requirement with regard to off-site points is subject to the prior agreement of the landowner(s) concerned.

3.16 The licensee shall have in storage an adequate supply of containment booms and/or suitable absorbent material to contain and absorb any spillage at the facility. Once used, the absorbent material shall be disposed of at an appropriate facility.

3.17 The licensee shall maintain an oil separator at the facility to ensure that all storm water discharges from the facility pass through an oil separator in advance of discharge. The separator shall be a Class 1 full retention separator and shall be in accordance with I.S. EN-858-2:2003 (separator systems for light liquids).

3.18 Fire-water Retention

3.18.1 The licensee shall, within six months of the date of grant of this licence, prepare and implement, with the agreement of the Agency, a suitable fire-water retention plan.

3.18.2 The licensee shall have regard to the Environmental Protection Agency Draft Guidance Note to Industry on the Requirements for Fire-Water Retention Facilities when implementing Conditions 3.18.1 above.

3.19 All storage tanks, including waste water storage tanks, from which spillage of environmentally significant materials might occur in such quantities as are likely to breach local or remote containment or separators, shall be fitted with high liquid level alarms (or oil detectors as appropriate).

3.20 The provision of a catchment system to collect any leaks from flanges and valves of all over-ground pipes used to transport material other than water shall be examined. This shall be incorporated into a Schedule of Environmental Objectives and Targets set out in Condition 2 of this licence for the reduction in fugitive emissions.

3.21 The licensee shall, within three months of the date of grant of this licence, install in a prominent location on the site a wind sock, or other wind direction indicator, which shall be visible from the public roadway outside the site.

Reason: ***To provide for appropriate operation of the facility to ensure protection of the environment.***

Condition 4. Interpretation

4.1 Noise from the facility shall not give rise to sound pressure levels (Leq, T) measured at the noise sensitive locations of the facility which exceed the limit value(s) specified in *Schedule B.4 Noise Emissions* of this licence.

4.2 Dust and particulate matters from the activity shall not give rise to deposition levels which exceed the limit value(s) specified in *Schedule B.5 Dust Emissions* of this licence.

Reason: ***To clarify the interpretation of limit values fixed under the licence.***

Condition 5. Emissions

5.1 No specified emission from the facility shall exceed the emission limit values set out in *Schedule B: Emission Limits* of this licence. There shall be no other emissions of environmental significance.

5.2 No emissions, including odours, from the activities carried on at the site shall result in an impairment of, or an interference with amenities or the environment beyond the facility boundary or any other legitimate uses of the environment beyond the facility boundary.

5.3 The licensee shall ensure that all or any of the following:

- Vermin
- Birds
- Flies
- Mud
- Dust
- Litter

associated with the activity do not result in an impairment of, or an interference with, amenities or the environment at the facility or beyond the facility boundary or any other legitimate uses of the environment beyond the facility boundary. Any method used by the licensee to control or prevent any such impairment/interference shall not cause environmental pollution.

5.4 No trade effluent, leachate and/or contaminated storm water shall be discharged to surface water drains.

5.5 There shall be no direct emissions to groundwater.

5.6 There shall be no clearly audible tonal component or impulsive component in the noise emissions from the facility at the noise sensitive locations.

5.7 The road network in the vicinity of the facility shall be kept free from any debris caused by vehicles entering or leaving the facility. Any such debris or deposited materials shall be removed without delay.

Reason: ***To provide for the protection of the environment by way of control and limitation of emissions.***

Condition 6. Control and Monitoring

6.1 The licensee shall carry out such sampling, analyses, measurements, examinations, maintenance and calibrations as set out below and as in accordance with *Schedule C: Control & Monitoring* of this licence.

6.1.1 Analyses shall be undertaken by competent staff in accordance with documented operating procedures.

6.1.2 Such procedures shall be assessed for their suitability for the test matrix and performance characteristics shall be determined.

6.1.3 Such procedures shall be subject to a programme of Analytical Quality Control using control standards with evaluation of test responses.

6.1.4 Where any analysis is sub-contracted it shall be to a competent laboratory.

6.2 The licensee shall ensure that:

(i) sampling and analysis for all parameters listed in the Schedules to this licence; and

(ii) any reference measurements for the calibration of automated measurement systems;

shall be carried out in accordance with CEN-standards. If CEN standards are not available, ISO, national or international standards that will ensure the provision of data of an equivalent scientific quality shall apply.

6.3 All automatic monitors and samplers shall be functioning at all times (except during maintenance and calibration) when the activity is being carried on unless alternative sampling or monitoring has been agreed in writing by the Agency for a limited period. In the event of the malfunction of any continuous monitor, the licensee shall contact the Agency as soon as practicable, and alternative sampling and monitoring facilities shall be put in place. The use of alternative equipment, other than in emergency situations, shall be as agreed by the Agency.

6.4 Monitoring and analysis equipment shall be operated and maintained as necessary so that monitoring accurately reflects the emission/discharge (or ambient conditions where that is the monitoring objective).

6.5 All treatment/abatement and emission control equipment shall be calibrated and maintained in accordance with the instructions issued by the manufacturer/supplier or installer.

6.6 The frequency, methods and scope of monitoring, sampling and analyses, as set out in this licence, may be amended with the agreement of the Agency following evaluation of test results.

6.7 The licensee shall prepare a programme, to the satisfaction of the Agency, for the identification and reduction of fugitive emissions using an appropriate combination of best available techniques. This programme shall be included in the Environmental Management Programme.

6.8 The integrity and water tightness of all underground pipes, tanks, bunding structures and containers and their resistance to penetration by water or other materials carried or stored therein shall be tested and demonstrated by the licensee. This testing shall be carried out by the licensee at least once every three years and reported to the Agency on each occasion. This testing shall be carried out in accordance with any guidance published by the Agency. A written record of all integrity tests and any maintenance or remedial work arising from them shall be maintained by the licensee.

6.9 The drainage system (i.e., gullies, manholes, any visible drainage conduits and such other aspects as may be agreed), bunds and the oil separator shall be inspected weekly and desludged as necessary. All sludge and drainage from these operations shall be collected for safe disposal. The drainage system, bunds and oil interceptor shall be properly maintained at all times.

6.10 A visual examination of the storm water discharges shall be carried out weekly. A log of such inspections shall be maintained.

6.11 Litter Control

6.11.1 All loose litter or other waste, placed on or in the vicinity of the facility, other than in accordance with the requirements of this licence, shall be removed, subject to the agreement of the landowners, immediately and in any event by 10.00 am of the next working day after such waste is discovered.

6.11.2 The licensee shall ensure that all vehicles delivering waste to and removing waste and materials from the facility are appropriately covered.

6.12 Dust and Odour Control

6.12.1 All odour forming waste stored overnight at the facility shall be stored in suitably covered and enclosed containers, and shall be removed from the facility within 48 hours, except at Public Holiday weekends. At Public Holiday weekends, waste for disposal shall be removed within 72 hours of its arrival on site.

6.12.2 In dry weather, site roads and any other areas used by vehicles shall be sprayed with water as and when required to minimise airborne dust nuisance.

6.12.3 The licensee shall undertake, as required by the Agency, an odour assessment which shall include as a minimum the identification and quantification of all significant odour sources and an assessment of the suitability and adequacy of the odour abatement system(s) to deal with these emissions. Any recommendations arising from such an odour assessment shall be implemented following agreement with the Agency.

6.13 Operational Controls

6.13.1 The floors of the materials recovery and waste transfer buildings shall be cleaned on a weekly basis. The floor of the storage bays for recovered wastes shall be washed down as necessary, and cleaned on each occasion such bays are emptied, or as a minimum on a weekly basis.

6.13.2 Scavenging shall not be permitted at the facility.

6.13.3 All tanks and drums shall be labelled to clearly indicate their contents.

6.13.4 There shall be no unauthorised public access to the facility.

6.13.5 The licensee shall provide and use adequate lighting during the operation of the facility in hours of darkness.

6.14 Nuisance Monitoring

The licensee shall, at a minimum of one week intervals, inspect the facility and its immediate surrounds for nuisances caused by litter, vermin, birds, flies, mud, dust and odours. The licensee shall maintain a record of all nuisance inspections.

6.15 Vermin and Flies

Within three months of the date of this licence, the licensee shall submit to the Agency for its agreement a proposal for the control and eradication of vermin and fly infestations at the facility. This proposal should include as a minimum, operator training, details on the rodenticide(s) and insecticide(s) to be used, mode and frequency of application and measures to contain sprays within the facility boundary.

6.16 Noise

The licensee shall carry out a noise survey of the site operations annually. The survey programme shall be undertaken in accordance with the methodology specified in the 'Environmental Noise Survey Guidance Document' as published by the Agency.

6.17 Pollutant Release and Transfer Register (PRTR)

The licensee shall prepare and report a PRTR for the site. The substance and/or wastes to be included in the PRTR shall be as agreed by the Agency each year by reference to EC Regulations No. 166/2006 concerning the establishment of the European Pollutant Release and Transfer Register and amending Council Directives 91/689/EEC and 96/61/EC. The PRTR shall be prepared in accordance with any relevant guidelines issued by the Agency and shall be submitted electronically in specified format and as part of the AER.

6.18 The licensee shall, within six months of the date of grant of this licence, develop and establish a Data Management System for collation, archiving, assessing and graphically presenting the monitoring data generated as a result of this licence.

Reason: ***To provide for the protection of the environment by way of treatment and monitoring of emissions.***

Condition 7. Resource Use and Energy Efficiency

7.1 The licensee shall carry out an audit of the energy efficiency of the site within one year of the date of grant of this licence. The audit shall be carried out in accordance with the guidance published by the Agency, "Guidance Note on Energy Efficiency Auditing". The energy efficiency audit shall be repeated at intervals as required by the Agency.

7.2 The audit shall identify all practicable opportunities for energy use reduction and efficiency and the recommendations of the audit will be incorporated into the Schedule of Environmental Objectives and Targets under Condition 2 above.

7.3 The licensee shall identify opportunities for reduction in the quantity of water used on site including recycling and reuse initiatives, wherever possible. Reductions in water usage shall be incorporated into Schedule of Environmental Objectives and Targets.

7.4 The licensee shall undertake an assessment of the efficiency of use of raw materials in all processes, having particular regard to the reduction in waste generated. The assessment should take account of best international practice for this type of activity. Where improvements are identified, these shall be incorporated into the Schedule of Environmental Objectives and Targets.

Reason: ***To provide for the efficient use of resources and energy in all site operations.***

Condition 8. Materials Handling

8.1 All waste processing (including timber shredding and gypsum recovery) shall be carried out inside the materials recovery and waste transfer buildings. All wastes/materials shall be stored within the materials recovery and waste transfer buildings except wood, metals, masonry wastes and other wastes/materials with the prior agreement of the Agency, which can be stored in the open yard.

8.2 Waste Acceptance and Characterisation Procedures

8.2.1 Waste shall only be accepted at the facility from Local Authority waste collection or transport vehicles or holders of waste permits, unless exempted or excluded, issued under the Waste Management Acts 1996 to 2010. Copies of these waste collection permits must be maintained at the facility.

8.2.2 The licensee shall, within six months of the date of grant of this licence, establish and maintain detailed written procedures for the acceptance and handling of wastes.

8.2.3 Waste shall be accepted at the facility only from known customers or new customers subject to initial waste profiling and waste characterisation off-site. The written records of this off-site waste profiling and characterisation shall be retained by the licensee for all active customers and for a two year period following termination of licensee/customer agreements.

8.2.4 Waste arriving at the facility shall have its documentation checked at the point of entry to the facility and subject to this verification, weighed, documented and directed to the appropriate Waste Transfer Building. Each load of waste arriving at the Waste Transfer Building shall be inspected upon tipping within this building. Only after such inspections shall the waste be processed for disposal or recovery.

8.2.5 Any waste deemed unsuitable for processing at the facility and/or in contravention of this licence shall be immediately separated and removed from the facility at the earliest possible time. Temporary storage of such wastes shall be in a designated Waste Quarantine Area. Waste shall be stored under appropriate conditions in the quarantine area to avoid putrefaction, odour generation, the attraction of vermin and any other nuisance or objectionable condition.

8.3 Disposal or recovery of waste on-site shall only take place in accordance with the conditions of this licence and in accordance with the appropriate National and European legislation and protocols.

8.4 Waste sent off-site for recovery or disposal shall be transported only by an authorised waste contractor. The waste shall be transported from the site of the activity to the site of recovery/disposal only in a manner that will not adversely affect the environment and in accordance with the appropriate National and European legislation and protocols.

8.5 The licensee shall ensure that, in advance of transfer to another person, waste shall be classified, packaged and labelled in accordance with National, European and any other standards which are in force in relation to such labelling.

8.6 The loading and unloading of materials shall be carried out in designated areas protected against spillage and leachate run-off.

8.7 Waste shall be stored in designated areas, protected as may be appropriate against spillage and leachate run-off. The waste shall be clearly labelled and appropriately segregated.

8.8 No waste classified as green list waste in accordance with the EU Shipment of Waste Regulations (Council Regulation EC No. 1013/2006, as may be amended) shall be consigned for recovery without the agreement of the Agency.

8.9 Waste for disposal/recovery off-site shall be analysed in accordance with *Schedule C: Control & Monitoring* of this licence.

8.10 Unless approved in writing, in advance, by the Agency the licensee is prohibited from mixing a hazardous waste of one category with a hazardous waste of another category or with any other non-hazardous waste.

8.11 The licensee shall neither import waste into the State nor export waste out of the State except in accordance with the relevant provisions of Regulation (EC) No 1013/2006 of the European Parliament and of the Council of 14th June 2006 on shipments of waste and associated national regulations.

8.12 Only waste that has been subject to treatment may be dispatched for disposal at a landfill facility. Treatment shall reflect published EPA guidance as set out in *Municipal Solid Waste – Pre-treatment and Residuals Management*, EPA, 2009. With the agreement of the Agency, this condition shall not apply to:

(i) Inert waste for which treatment is not technically feasible; and

(ii) Other waste for which such treatment does not contribute to the objectives of the Landfill Directive as set out in Article 1 of the Directive by reducing the quality of the waste or the hazards to human health or the environment.

Reason: ***To provide for the appropriate handling of material and the protection of the environment.***

Condition 9. Accident Prevention and Emergency Response

9.1 The licensee shall, within six months of date of grant of this licence, ensure that a documented Accident Prevention Procedure is in place that addresses the hazards on-site, particularly in relation to the prevention of accidents with a possible impact on the environment. This procedure shall be reviewed annually and updated as necessary.

9.2 The licensee shall, within six months of date of grant of this licence, ensure that a documented Emergency Response Procedure is in place, that addresses any emergency situation which may originate on-site. This procedure shall include provision for minimising the effects of any emergency on the environment. This procedure shall be reviewed annually and updated as necessary.

9.3 Incidents

9.3.1 In the event of an incident the licensee shall immediately:

(i) carry out an investigation to identify the nature, source and cause of the incident and any emission arising therefrom;

(ii) isolate the source of any such emission;

(iii) evaluate the environmental pollution, if any, caused by the incident;

(iv) identify and execute measures to minimise the emissions/malfunction and the effects thereof;

(v) identify the date, time and place of the incident;

(vi) notify the Agency and other relevant authorities.

9.3.2 The licensee shall provide a proposal to the Agency for its agreement within one month of the incident occurring or as otherwise agreed by the Agency, to:

(i) identify and put in place measures to avoid recurrence of the incident; and

(ii) identify and put in place any other appropriate remedial actions.

9.4 Emergencies

9.4.1 In the event of a breakdown of equipment or any other occurrence which results in the closure of the transfer station building, any waste arriving at or already collected at the facility shall be transferred directly to appropriate landfill sites or any other appropriate facility until such time as the transfer station building is returned to a fully operational status. Such a breakdown event will be treated as an emergency and rectified as soon as possible.

9.4.2 All significant spillages occurring at the facility shall be treated as an emergency and immediately cleaned up and dealt with so as to alleviate their effects.

9.4.3 No waste shall be burnt within the boundaries of the facility. A fire at the facility shall be treated as an emergency and immediate action shall be taken to extinguish it and notify the appropriate authorities.

Reason: ***To provide for the protection of the environment.***

Condition 10. Decommissioning & Residuals Management

10.1 Following termination, or planned cessation for a period greater than six months, of use or involvement of all or part of the site in the licensed activity, the licensee shall, to the satisfaction of the Agency, decommission, render safe or remove for disposal/recovery any soil, subsoil, buildings, plant or equipment, or any waste, materials or substances or other matter contained therein or thereon, that may result in environmental pollution.

10.2 Decommissioning Management Plan (DMP)

10.2.1 The licensee shall prepare, to the satisfaction of the Agency, a fully detailed and costed plan for the decommissioning or closure of the site or part thereof. This plan shall be submitted to the Agency for agreement within six months of the date of grant of the licence.

10.2.2 The plan shall be reviewed annually and proposed amendments thereto notified to the Agency for agreement as part of the AER. No amendments may be implemented without the agreement of the Agency.

10.2.3 The licensee shall have regard to the Environmental Protection Agency Guidance on Environmental Liability Risk Assessment, Decommissioning Management Plans and Financial Provision when implementing Condition 10.2.1 above.

10.3 The Decommissioning Management Plan shall include, as a minimum, the following:

(i) a scope statement for the plan;

(ii) the criteria that define the successful decommissioning of the activity or part thereof, which ensures minimum impact on the environment;

(iii) a programme to achieve the stated criteria;

(iv) where relevant, a test programme to demonstrate the successful implementation of the decommissioning plan; and

(v) details of the costings for the plan and the financial provisions to underwrite those costs.

10.4 A final validation report to include a certificate of completion for the Decommissioning Management Plan, for all or part of the site as necessary, shall be submitted to the Agency within three months of execution of the plan. The licensee shall carry out such tests, investigations or submit certification as requested by the Agency, to confirm that there is no continuing risk to the environment.

Reason: ***To make provision for the proper closure of the activity ensuring protection of the environment.***

Condition 11. Notification, Records and Reports

11.1 The licence shall notify the Agency by both telephone and facsimile, if available, to the Agency's headquarters in Wexford, or to such other Agency office as may be specified by the Agency, as soon as practicable after the occurrence of any of the following:

(i) any release of environmental significance to atmosphere from any potential emissions point including bypasses;

(ii) any emission that does not comply with the requirements of this licence;

(iii) any malfunction or breakdown of key control equipment or monitoring equipment set out in *Schedule C: Control & Monitoring* of this licence which is likely to lead to loss of control of the abatement system; and

(iv) any incident with the potential for environmental contamination of surface water or groundwater, or posing an environment threat to air or land, or requiring an emergency response by the Local Authority.

The licensee shall include as part of the notification, date and time of the incident, summary details of the occurrence, and where available, the steps taken to minimise any emissions.

11.2 In the case of any incident relating to discharges to water, the licensee shall notify the Local and Water Services Authority and Inland Fisheries Ireland as soon as practicable after such an incident.

11.3 The licensee shall make a record of any incident. This record shall include details of the nature, extent, and impact of, and circumstances giving rise to, the incident. The record shall include all corrective actions taken to manage the incident, minimise wastes generated and the effect on the environment, and avoid recurrence. The licensee shall, as soon as practicable following incident notification, submit to the Agency the incident record.

11.4 The licensee shall record all complaints of an environmental nature related to the operation of the activity. Each such record shall give details of the date and time of the complaint, the name of the complainant (if provided), and give details of the nature of the complaint. A record shall also be kept of the response made in the case of each complaint.

11.5 The licensee shall record all sampling, analyses, measurements, examinations, calibrations and maintenance carried out in accordance with the requirements of this licence and all other such monitoring which relates to the environmental performance of the facility.

11.6 The licensee shall as a minimum keep the following documents at the site:

(i) the licences relating to the facility;
(ii) the current EMS for the facility;
(iii) the previous year's AER for the facility;
(iv) records of all sampling, analyses, measurements, examinations, calibrations and maintenance carried out in accordance with the requirements of this licence and all other such monitoring which relates to the environmental performance of the facility;
(v) relevant correspondence with the Agency;
(vi) up to date site drawings/plans showing the location of key process and environmental infrastructure, including monitoring locations and emission points;
(vii) up to date Standard Operational Procedures for all processes, plant and equipment necessary to give effect to this licence or otherwise to ensure that standard operation of such processes, plant or equipment does not result in unauthorised emissions to the environment;
(viii) any elements of the licence application or EIS documentation referenced in this licence.

This documentation shall be available to the Agency for inspection at all reasonable times.

11.7 The licensee shall submit to the Agency, by the 31st March of each year, an AER covering the previous calendar year. This report, which shall be to the satisfaction of the Agency, shall include as a minimum the information specified in *Schedule F: Annual Environmental Report* of this licence and shall be prepared in accordance with any relevant guidelines issued by the Agency.

11.8 The licensee shall maintain a written record for each load of waste arriving at, or leaving the facility. The licensee shall record the following:

(i) the date and time;
(ii) the name of the carrier (including if appropriate, the waste carrier registration details);
(iii) the vehicle registration number;
(iv) the trailer, skip or other container unique identification number (where relevant);
(v) the name of the producer(s)/collector(s) of the waste as appropriate;
(vi) the name of the waste facility (if appropriate) from which the load originated including the waste licence or waste permit register number;
(vii) the destination of the waste, if appropriate (including the facility name and waste licence/permit number as appropriate);
(viii) a description of the waste including the associated EWC/HWL codes;
(ix) the quantity of waste, recorded in tonnes;
(x) details of the treatment(s) to which the waste has been subjected;
(xi) the classification and coding of the waste, including whether MSW or otherwise;

(xii) whether the waste is for disposal or recovery, and if recovery, for what purpose;

(xiii) the name of the person checking the load; and

(xiv) where loads of waste are removed or rejected, details of the date of occurrence, the types of waste and the facility to which they were removed.

11.9 A full record, which shall be open to inspection by authorised persons of the Agency at all times, shall be kept by the licensee on matters relating to the waste management operations and practices at this site. This record shall be maintained on a monthly basis and shall as a minimum contain details of the following:

(i) the tonnages and EWC Code for the waste materials imported and/or sent off-site for disposal/recovery;

(ii) the names of the agent and carrier of the waste, and their waste collection permit details, if required (to include issuing authority and vehicle registration number);

(iii) details of the ultimate disposal/recovery destination facility for the waste and its appropriateness to accept the consigned waste stream, to include its permit/licence details and issuing authority, if required;

(iv) written confirmation of the acceptance and disposal/recovery of any hazardous waste consignments sent off-site;

(v) details of all waste consigned abroad for Recovery and classified as 'Green' in accordance with the EU Shipment of Waste Regulations (Council Regulation EEC No. 1013/2006, as may be amended). The rationale for the classification must form part of the record;

(vi) details of any rejected consignments;

(vii) details of any approved waste mixing;

(viii) the results of any waste analyses required under *Schedule C: Control & Monitoring*, of this licence; and

(ix) the tonnage and EWC Code for the waste materials recovered/disposed on-site.

11.10 Each load of waste dispatched to landfill shall be accompanied by documentation verifying, where required, the type of treatment carried out on the waste and, in the case of municipal waste, its biodegradable content.

11.11 A record shall be kept of each consignment of trade effluent, leachate and/or contaminated storm water removed from the facility. The record shall include the following:

(i) the name of the carrier;

(ii) the date and time of removal of trade effluent, leachate and/or contaminated storm water from the facility;

(iii) the volume of trade effluent, leachate and/or contaminated storm water, in cubic metres, removed from the facility on each occasion;

(iv) the name and address of the Wastewater Treatment Plant to which the trade effluent, leachate and/or contaminated storm water was transported; and

(v) any incidents or spillages of trade effluent, leachate and/or contaminated storm water during its removal or transportation.

11.12 A record shall be kept at the facility of the programme for the control and eradication of vermin and fly infestations at the facility. A report on the programme shall be prepared and submitted to the Agency as part of the AER.

11.13 Waste Recovery Reports

The licensee shall as part of the Annual Environmental Report for the site submit a report on the contribution by this facility to the achievement of the waste recovery objectives stated in Condition 2.2.2.2 and as otherwise may be stated in National and European Union waste policies and shall, as a minimum, include the following:

(i) the recovery of metals;

(ii) the recovery of C & D derived waste materials;

(iii) the recovery/treatment of biowaste (including contribution of facility to the pre-treatment targets in the EU Landfill Directive);

(iv) the separation and recovery of other recyclable materials.

11.14 The licensee shall submit report(s) as required by the conditions of this licence to the Agency's Headquarters in Wexford, or to such other Agency office as may be specified by the Agency.

11.15 All reports shall be certified accurate and representative by the facility manager or a nominated, suitably qualified and experienced deputy.

Reason: ***To provide for the collection and reporting of adequate information on the activity.***

Condition 12. Financial Charges and Provisions

12.1 Agency Charges

12.1.1 The licensee shall pay to the Agency an annual contribution of €6,292, or such sum as the Agency from time to time determines, having regard to variations in the extent of reporting, auditing, inspection, sampling and analysis or other functions carried out by the Agency, towards the cost of monitoring the activity as the Agency considers necessary for the performance of its functions under the Waste Management Acts 1996 to 2010. The first payment shall be a pro-rata amount for the period from the date of grant of this licence to the 31st day of December, and shall be paid to the Agency within one month from the date of grant of the licence. In subsequent years the licensee shall pay to the Agency such revised annual contribution as the Agency shall from time to time consider necessary to enable performance by the Agency of its relevant functions under the Waste Management Acts 1996 to 2010, and all such payments shall be made within one month of the date upon which demanded by the Agency.

12.1.2 In the event that the frequency or extent of monitoring or other functions carried out by the Agency needs to be increased, the licensee shall contribute such sums as determined by the Agency to defray its costs in regard to items not covered by the said annual contribution.

12.2 Environmental Liabilities

12.2.1 The licensee shall as part of the AER, provide an annual statement as to the measures taken or adopted at the site in relation to the prevention of environmental damage, and the financial provisions in place in relation to the underwriting of costs for remedial actions following anticipated events (including closure) or accidents/incidents, as may be associated with the carrying on of the activity.

12.2.2 The licensee shall arrange for the completion, by an independent and appropriate qualified consultant, of a comprehensive and fully costed Environmental Liabilities Risk Assessment (ELRA) to address the liabilities from past and present activities. The assessment shall include those liabilities and costs identified in Condition 10 for execution of the DMP. A report on this assessment shall be submitted to the Agency for agreement within twelve months of date of grant of this licence. The ELRA shall be reviewed as necessary to reflect any significant change on site, and in any case every three years following initial agreement. The results of the review shall be notified as part of the AER.

12.2.3 As part of the measures identified in Condition 12.2.1, the licensee shall, to the satisfaction of the Agency, make financial provision to cover any liabilities identified in Condition 12.2.2. The amount of indemnity held shall be reviewed and revised as necessary, but at least annually. Proof of renewal or revision of such financial indemnity shall be included in the annual 'Statement of Measures' report identified in Condition 12.2.1.

12.2.4 The licensee shall have regard to the Environmental Protection Agency Guidance on Environmental Liability Risk Assessment, Decommissioning Management Plans and Financial Provision when implementing Conditions 12.2.2 and 12.2.3 above.

Reason: ***To provide for adequate financing for monitoring and financial provisions for measures to protect the environment.***

SCHEDULE A: Limitations

A.1 Limitations on the Facility

The following waste related processes are authorised:

i. Reception, bulking, storage and transfer of the wastes specified in *A.2 Waste Acceptance* prior to recovery/disposal; and
ii. Recovery of the wastes specified in *Schedule A.2 Waste Acceptance* of this licence by sorting, separation, shredding, crushing, trommelling, screening, baling and repackaging processes.

No additions to these processes are permitted unless agreed in advance with the Agency.

A.2 Waste Acceptance

Table 1: Waste Categories and Quantities

Waste Type		Maximum (Stage 1) Note 2 (Tonnes Per Annum)	Maximum (Stage 2) Note 2 (Tonnes Per Annum)
Non-Hazardous Wastes Note 1	Construction and Demolition	40,000	75,000
	Dry Recyclable Household, Commercial and Industrial Note 3	10,000	35,000
	Paper & Cardboard		90,000
Total		50,000	200,000

Note 1: Any proposals to accept other compatible non-hazardous waste types must be agreed in advance by the Agency. The limitation on individual non-hazardous waste types may be varied with the agreement of the Agency subject to the total limit for non-hazardous waste staying the same.

Note 2: In accordance with Condition 1.2 of this licence, waste acceptance shall be limited to 50,000 tonnes per annum until such time as the 'Stage 2' infrastructure has been installed to the satisfaction of the Agency. Subject to the prior written agreement of the Agency, the licensee shall be permitted to accept a maximum waste intake of 200,000 tonnes per annum.

Note 3: Excluding mixed municipal solid waste, other than mixed dry recyclables.

SCHEDULE B: Emission Limits

B.1 Emissions to Air

There shall be no emissions to air of environmental significance.

B.2 Emissions to Water

There shall be no emissions to water of environmental significance.

B.3 Emissions to Sewer

There shall be no process effluent emissions to sewer.

B.4 Noise Emissions

Daytime dB(A) L_{Aeq} (30 minutes)	Night-time dB(A) L_{Aeq} (30 minutes)
55 Note 1	45 Note 1

Note 1: There shall be no clearly audible tonal component or impulsive component in the noise emission from the activity at any noise-sensitive location.

B.5 Dust Emissions

Locations: AD1 & AD2 as shown on Drawing No. 7.1 'Proposed Monitoring Locations' of the application (or as may be amended under Condition 6.6)

Parameter	Level (mg/m^2 per day) Note 1
Dust Deposition Limits	350

Note 1: 30 day composite sample with the results expressed as mg/m^2 per day.

SCHEDULE C: Control & Monitoring

C.1.1. Control of Emissions to Air

There shall be no emissions to air of environmental significance.

C.1.2. Monitoring of Emissions to Air

There shall be no emissions to air of environmental significance.

C.2.1. Control of Emissions to Water

There shall be no emissions to water of environmental significance.

C.2.2. Monitoring of Emissions to Water

There shall be no emissions to water of environmental significance.

C.2.3. Control of Storm Water Emissions

Emission Control Location: SW1 (Storm water discharge)

Description of Treatment: Oil interceptor

Control Parameter	Monitoring	Key Equipment Note 1
Oil removal	Mineral oil content in water at discharge point	Class I Full Retention Oil Interceptor Shut-off valve

Note 1: The licensee shall maintain appropriate access to standby and/or spares to ensure the operation of the abatement system.

C.2.4. Monitoring of Storm Water Emissions

Emission Point Reference No: SW1

Parameter	Monitoring Frequency	Analysis Method/Technique
Visual Inspection	Weekly	Sample and examine for colour and odour.
pH	Weekly	Standard method
Conductivity	Weekly	Standard method
Mineral Oils	Quarterly	Standard method

C.3.1. Control of Emissions to Sewer

There shall be no process effluent emissions to sewer.

C.3.2. Monitoring of Emissions to Sewer

There shall be no process effluent emissions to Sewer.

C.4 Waste Monitoring

Waste Class	Frequency	Parameter	Method
Waste water sent off-site for disposal	Quarterly	BOD, COD, Metals, Mineral Oils, Chloride, Ammonia, Sulphate, Suspended Solids, pH.	Standard Method
Municipal waste dispatched to landfill	As may be specified by the Agency	BMW content	Waste characterisation or other methods as may be specified
Other [Note 1]			

Note 1: Analytical requirements to be determined on a case by case basis.

C.5 Noise Monitoring

Monitoring Point Reference No.: Site boundary locations AN1 & AN2

Noise sensitive locations ANSL1 & ANSL2

Locations: As shown on Drawing No. 7.1 'Proposed Monitoring Locations' of the application (or as may be amended under Condition 6.6)

Parameter	Monitoring Frequency	Analysis Method/Technique
$L(A)_{EQ}$ [30 minutes]	Annual	Standard Note 1
$L(A)_{10}$ [30 minutes]	Annual	Standard Note 1
$L(A)_{90}$ [30 minutes]	Annual	Standard Note 1
Frequency analysis (1/3 octave band analysis)	Annual	Standard Note 1

Note 1: "International Standards Organisation. ISO 1996. Acoustics - Description and Measurement of Environmental Noise. Parts 1, 2 and 3."

C.6 Ambient Monitoring

Dust Monitoring

Monitoring Point Reference No.: AD1 & AD2

Locations: As shown on Drawing No. 7.1 'Proposed Monitoring Locations' of the application (or as may be amended under Condition 6.6)

Parameter	Monitoring Frequency	Analysis Method/Technique
Dust deposition	Bi-annually Note 1	Bergerhoff Note 2

Note 1: Once during the period May to September, or as otherwise specified in writing by the Agency.

Note 2: Standard Method VD12119 (Measurement of Dustfall, Determination of Dustfall using Bergerhoff Instrument (Standard Method) German Engineering Institute).

SCHEDULE D: Specified Engineering Works

Specified Engineering Works
Development of the facility including installation of waste-handling, processing, recycling/recovery infrastructure and installation of increased waste processing capacity as well as any abatement system(s). Amendments to the waste water and/or surface water drainage networks. Installation of dust/odour system. Any other works notified in writing by the Agency.

SCHEDULE E: Reporting

Completed reports shall be submitted to:

The Environmental Protection Agency
Office of Environmental Enforcement
PO Box 3000
Johnstown Castle Estate
County Wexford

or Any other address as may be specified by the Agency

Reports are required to be forwarded as required in the licence and as may be set out below:

Report	Reporting Frequency	Report Submission Date
Annual Environment Report (AER)	Annually	By 31st March of each year.
Record of incidents	As they occur	As soon as practicable following notification of incident.
Specified Engineering Works reports	As they arise	At least two months in advance of the works commencing.
Bund, tank and container integrity assessment	Every three years	As part of the AER.
Licence monitoring requirements	Annually	As part of the AER.
Schedule of objectives & targets	-	Within six months of the date of grant of licence, thereafter as part of the AER.
Any other monitoring	As they occur	As part of the AER.

Note 1: Unless altered at the request of the Agency.

SCHEDULE F: Annual Environmental Report

Annual Environmental Report Content [Note 1]
Waste activities carried out at the facility.
Quantity and composition of waste recovered, received and disposed of during the reporting period and each previous year (relevant EWC codes to be used).
Emissions from the facility.
Waste management record.
Waste Recovery Report.
Resource consumption summary.
Complaints summary.
Schedule of Environmental Objectives and Targets.
Environmental management programme – report for previous year.
Environmental management programme – proposal for current year.
Full title and a written summary of any procedures developed by the licensee in the year which relates to the facility operation.
Pollutant Release and Transfer Register – report for previous year.
Pollutant Release and transfer Register – proposal for current year.
Volume of waste water and/or contaminated stormwater produced and volume transported off-site.
Noise monitoring report summary.
Ambient monitoring summary.
Review of nuisance controls.
Tank and pipeline testing and inspection report (as necessary).
Reported incidents summary.
Energy efficiency audit report summary.
Report on the assessment of the efficiency of use of raw materials in processes and the reduction in waste generated.
Report on progress made and proposals being developed to minimise water demand and the volume of waste water discharges.
Development/Infrastructural works summary (completed in previous year or prepared for current year).
Reports on financial provision made under this licence, management and staffing structure of the facility, and a programme for public information.
Review of decommissioning management plan.
Statement of measures in relation to prevention of environmental damage and remedial actions (Environmental Liabilities).
Environmental Liabilities Risk Assessment Review (every three years or more frequently as dictated by relevant on-site change including financial provisions).
Any other items specified by the Agency.

Note 1: Content may be revised subject to the agreement of the Agency.

Sealed by the seal of the Agency on this the 31st day of August 2010.

PRESENT when the seal of the Agency
Was affixed hereto:

Laura Burke, Director/Authorised Person

Appendix 3 Traffic Impact Assessment

PANDA WASTE RECYCLING FACILITY, BALLYCOOLIN INDUSTRIAL ESTATE, CAPPOGUE, FINGAL, CO DUBLIN

Transportation Study

August 2005

02692/FR/0803/JK

Bracetown Business Park, Clonee, Co. Dublin
Tel: +353 (0)1 801 4009 - Fax: +353 (0)1 801 4035
E-mail: info@trafficwise.ie Internet: www.trafficwise.ie

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Traffic Survey Data

Copy of Classified Traffic Surveys

1 INTRODUCTION

1.1 General

1.1.1 **Traffic***wise* Ltd. has been retained by PANDA Waste Services Ltd. to provide guidance on the traffic and transportation and access issues relating to the development of a waste recycling facility which it is proposed will be located in Cappogue, Fingal, Co Dublin. Access to the site will be from the adjoining carriageway of the Cappagh Road.

1.1.2 As detailed in the planning application, the facility will be developed in a series of phases or stages. In Stage 1 it is expected that the facility will accept and recycle approximately 50,000 tonnes of Construction and Demolition, and Commercial and Industrial waste per annum. Stages 2 and 3 will involve the expansion of the recycling capacity to process Dry Recyclables and Municipal Solid Wastes.

1.1.3 When fully developed it is intended that the facility will have the capacity to process 250,000 tonnes of potentially recyclable materials per annum. The proposed capacity is designed to allow for the progressive expansion of the recycling activities. PANDA Waste Services Ltd. will then be in a position to tender for local authority contracts in relation to the collection and recycling of Municipal Solid Wastes.

1.1.4 It is envisaged that processing of the levels proposed under Stages 2 and 3 would not be realised at the site prior to both the opening of the N2 Road Improvement Scheme and the realignment and upgrade of the Cappagh Road.

1.1.5 Published data indicates that the N2 is due to be complete two and half years after the construction start date of May 2004; therefore the latter part of 2006.

1.1.6 As we understand Compulsory Purchase Orders were issued along the corridor of the proposed Cappagh Road realignment some time ago. The appointment of consultants to prepare detailed designs for the scheme is pending and it is expected that construction work could commence sometime close to March 2006.

1.1.7 Allowing, say a year to eighteen months for planning and construction, the proposed waste treatment facility could reasonably be expected to be open for Stage 1 operations near the end of 2006 or early in 2007.

1.1.8 For the purposes of the assessments provided in this report it is assumed that the facility would open in mid to late 2006. As can be appreciated, the forecast opening date is likely to coincide with the predicted opening date for the N2 Improvement and quite possibly the Cappagh Road Realignment as it is expected that construction works for the Cappagh Road Realignment works would be well underway by the end of 2006.

1.1.9 The existing site currently enjoys a full planning permission under Planning Register Reference No. F04A/1123. The Applicant in the case of the current permission is Heatherly Securities Ltd. The permitted development is described in the permission as follows.

> *"Industrial/Office development of 10,579sq.m which would consist of 7No. 2 storey Industrial/Office Units varying from 523sq.m. to 2,273sq.m. and in height from 8.3m to 9.85m including ESB substation and switching room of 28.8sq.m. with associated parking for 304 cars, boundary fencing, landscaping, berming, site works and a new access road from the existing Stadium Business Park on a 2.58 hectare site adjacent to the Cappagh Road."*

1.2 Study Methodology

1.1.1.1 In this report we identify the existing traffic conditions and assess the relative level of impact the proposed development is likely to have on the local road network. We also identify how the traffic associated with the proposed development can be accommodated on the existing and future emerging local road network. Where appropriate, measures are discussed regarding the management of traffic associated with the proposed development.

1.2.2 This report which addresses the likely traffic impact of the proposed development and provides a description of the physical characteristics and land-use requirements in relation to the transport needs of the proposed development is structured in accordance with the general advice provided in the Institution of Highways & Transportation document 'Guidelines for Traffic Impact Assessment' (September 1994). This document is recognised by Transportation Planners to represent a structured approach to the preparation of Transport Assessments (formerly Traffic Impact Assessments).

1.2.3 The Institution of Highways & Transportation guidelines provide suggested headings based on current best practice and it is these headings, where relevant or appropriate, under which the report is written.

1.2.4 The existing site currently enjoys full planning permission for Industrial/Office uses, nonetheless this development has not been realised. It is expected that the traffic generation of the current permitted development would have been given due consideration by the Local Authority. The conditions appended the current permission clearly show involvement of the Transportation Department of Fingal County Council when that application was determined and subsequently granted.

1.2.5 The Institution of Highways and Transportation recommends that traffic to permitted, yet unrealised developments should normally be accounted for in the assessment of future likely traffic conditions on the receiving roads environment.

1.2.6 In the interest of a comprehensive and comparative assessment of the likely impact of the 'development site' on the operation of the receiving roads environment we assess the levels of traffic which the site might reasonably be expected to generate both under the current permission and under that for which permission is sought.

1.2.7 In accordance with the Institution of Highways and Transportation guidelines, the true measure of the impact of the current proposed development will be the incremental difference in the respective volumes of traffic which the existing permitted and current proposed developments are likely to generate.

1.2.8 It is anticipated that this Institution of Highways and Transportation recommended approach will provide the decision makers with a comprehensive picture of likely traffic impact and thus likely traffic conditions on the receiving roads environment, which is, the emerging road network serving the general Ballycoolin Industrial Area.

2 EXISTING CONDITIONS

2.1 General Location in Relation to Roads Network

2.1.1 The application lands are located in the Blanchardstown catchment area and on lands adjacent to the southern side of the Cappagh Road, in Cappogue, Fingal, Co Dublin.

2.1.2 In relation to the national primary roads network, the area in which the site is located is generally defined by the N2 National Primary Road to the North which intersects with the M50 at Finglas, the N3 National Primary Road to the south which intersects the M50 at Blanchardstown and the M50 Motorway to the East.

2.1.3 The proposed development is located on the Cappagh Road which crosses the M50 at an overbridge located between the Blanchardstown and Finglas Interchanges.

2.2 Current Local Authority Policy and Roads Objectives

2.2.1 In summarising the current transport policies for the Ballycoolin Area in particular, reference has been made to The National Development Plan 2000-2006 and the Fingal County Development Plan 2005-2011.

2.2.2 The National Development Plan 2000-2006, in terms of infrastructure considerations aims to build upon and enhance Ireland's continuing economic and social development by means of a concentrated and focused development strategy for the national primary road network. In relation to the impact on Fingal, the strategy can be broadly related to the provision of enhanced road and public transport infrastructure.

2.2.3 The development strategy for the general roads network in the Blanchardstown catchment area includes the following road improvement objectives as set out in Table 6.1 of the County Development Plan 2005-2011.

- N2 (Cherryhound) to Harristown Distributor Road
- St. Margarets Road (Ballymun) Improvement Measures
- Ballymun Interchange to Harristown Road

- Phoenix Park (N2 Interchange)
- Access off Corduff roundabout to Ballycoolin Industrial Estate
- Ballycoolin / Snugborough Road Junction Improvement
- Ballycoolin Road Realignment
- Clonsilla Road Junction Improvements
- Mulhuddart Interchange Improvement
- Cappagh Road Realignment
- Dunsink Lane to Cappagh Road
- N2-N3 Church Road Tyrellstown-Rathoath Road (N2 link)
- N2-N3 Link Ballycoolin Road to Cherryhound (N2)
- N2-N3 Link Church Road Tyrellstown to Damastown
- Mitchellstown Road to Kilshane Cross Road Improvement Measures
- Link via SDZ Lands to Porterstown
- Possible alternative Railway Crossing and Link Road at Clonsilla
- Castaheaney Interchange Improvement
- M50 Upgrade
- M2 Motorway

2.2.4 The application site will enjoy the benefit of the continuing development of the emerging roads network in the general vicinity of Ballycoolin Industrial Area together with the Blanchardstown and Mulhuddart areas to the south of the development site and the N2 route alignment which is currently under construction to the north.

2.2.5 The historic development strategy for the general roads network in the Blanchardstown catchment area under the superseded County Development Plan 1999 included the following objectives as set out in Section 5.2.1 of that document. Where possible we attempt to highlight in *italics*, those schemes we understand to have been completed to date, whilst we <u>underline</u> those schemes which have been carried over to the current County Development Plan 2005-2011 as listed above.

Motorway

- *The completion of the M1 motorway from Dublin Airport to the County Meath boundary will facilitate both private vehicle and bus movement and the completion of this road is a fundamental requirement for the facilitation of development in Fingal. It will be a major contributor to the development*

of Swords, Balbriggan and other urban areas in the Dublin - Belfast Economic Corridor.

- *The upgrading of the existing interchange at Turnapin (M50/M1 intersection) in conjunction with the Port Access Tunnel*
- The upgrading of the M50 including the possible provision of a third lane.

National Routes

- *N1 Belfast Road: Airport to Swords By-Pass - dualling,*
- *N2 Ashbourne Road: Motorway interchange to County boundary - dualling.*(Partial)

District Distributors

- *Ballycoolin Road: Rosemount to Cappagh Road - road improvement and re-alignment and junction improvement with Cappagh Road, .*(Partial)
- *Blanchardstown Road North - road improvement,*
- *Upgrading junction at entrance to Castaheany/Damastown Industrial Estate,*
- *Corduff Road - road improvement and realignment,*
- *Corduff Road to Kilshane Cross - new link road* (Partial)
- Rathoath Road: Corduff to Cappagh Road - road improvement,
- Cappagh Road: Corduff to Rathoath Road - road improvement,
- *Snugborough Road: Blanchardstown Road South to Castaheany*
- Construction of the Castaheany Western Distributor Road and Ongar Way,
- *Provision of an interchange at Snugborough Road/Navan Road,*
- Blanchardstown Road South: Clonsilla Road to point north of Luttrellstown Road - new road,
- Extension of the Outer Ring Road from Blanchardstown to the St. Margaret's By-pass,
- Relocation of the section of the Outer Ring Road at present running from Blanchardstown to the N4 (and south) to the periphery of the development area will be pursued with other relevant authorities. This will result in the deletion of the road reservation running through Luttrellstown Golf Club, the Strawberry Beds and over the River Liffey.

Local Distributor Roads

- Cruiserath Road: Ballycoolin Cross to Church Road - new road,
- Tyrellstown Road - completion of link to Ladyswell Road,

- Ladyswell Road Extension: Church Road to Blanchardstown Road North ,
- Carpenterstown Road - completion of link to Blanchardstown Road South.

2.2.6 In summary therefore, with regards to the National Roads Network in the vicinity of the development site the N2 is programmed to be upgraded to dual carriageway standard between the M50 and Ashbourne. This project, which includes a motorway grade separated interchange at Cherrywood will provide an excellent quality route to the north from the Ballycoolin area. Construction on this major road scheme commenced in May 2004 and is expected to take two and a half years to complete. Given the length of the works, it is expected that southern portions of the N2 scheme may reasonably be in use before completion of the entire scheme.

2.2.7 There are a number of general interchange improvements proposed for the existing M50 and these include a revision to the N2/M50 interchange associated with the N2 improvement as detailed above, and an upgrade to the N3 Blanchardstown junction to a partial free-flow arrangement aimed at reducing congestion at Scott's Roundabout.

2.2.8 There are proposals for the upgrade of the M50 to provide three lanes in both directions.

2.2.9 In addition to the above improvement works it is proposed to construct a link road, most likely to dual carriageway standard (or with adequate land reservation to allow an upgrade from wide single carriageway) between the N2 and N3 which will be located to the western edge of the Ballycoolin industrial area. This road will link the proposed Cherryhound interchange on the N2 to an upgraded interchange at Castaheaney.

2.2.10 From previous discussions with the Local Authority, it has been established that the N2 improvement works and the N2-N3 link road will be pivotal to the operation of the general roads infrastructure proposed to serve the greater Blanchardstown area as described in the local authority objectives listed above.

2.2.11 In planning terms it has been indicated to us in previous discussions with the Local Authority that development of the zoned lands in the Ballycoolin area, which are likely to give rise to 'appreciable' levels of traffic generation, will in general not be supported by the roads authority until such time as the proposed infrastructure improvements envisaged as required to serve the area have been implemented.

2.2.12 Notwithstanding the above, in view of the infrastructural nature of the facility and its perceived need within the Fingal area and considering the low traffic generation expected in the early stages of such a facility, it is believed reasonable that the roads authority might not be opposed in principle to the implementation of the proposed waste facility, in part or full, prior to the completion of the 'entire' programme of roads improvements for the area.

2.3 Specific Objectives Influencing Traffic Conditions

2.3.1 The development strategy for the national primary roads will include the development and improvement of the N2 Dublin to Derry route. The N2 Realignment Scheme will include a Bypass of Ashbourne.

2.3.2 The completed scheme will run from the terminal point of the N2 realignment in Fingal County Council in the townland of Ward Lower to an interchange south of Ashbourne in the townland of Fleenstown and from the interchange south of Ashbourne, bypassing Ashbourne to the west, to an interchange north of Ashbourne in the townland of Rath. In total the estimated distance is 17km.

2.3.3 The new Ardee Link Road has been completed and connects to the M1/N1 in the east to the Ardee Bypass and N2 in the west. In the original Environmental Impact Assessment prepared in support of this road scheme it had been estimated that there would be a benefit to the N2 National Primary Route in that the Ardee Link Road should reduce the levels of through traffic in Ardee, Ashbourne and Slane (and past the proposed site) by approximately 27%.

2.3.4 Although the traffic figures in the original Environmental Impact Assessment are at this stage historic in terms of the actual daily traffic flows, both Louth County Council and the National Roads Authority are in agreement that the estimated proportion of traffic relief to the N2 should still be valid. Indeed from discussions with the National Roads Authority, in light of the significant growth in the population of the Greater Dublin Area in the past number of years the estimate of 27% could be considered conservative.

2.3.5 From a review of National Roads Authority traffic counter data, N2 traffic just north of the M50 (N02-23) has reduced every year for the past three years. NRA counter data on the N2 south of Ardee (Ref: N02-15) shows year-on-year reductions in traffic flows for the past five years.

2.3.6 There are plans to upgrade the N3 National Primary route within the County of Meath from Clonee-Dunshaughlin-Navan-Navan(Bypass)-Kells. The road scheme will involve the construction/improvement of approximately 45km of road including the bypass of Dunshaughlin, Navan and Kells at an estimated cost of approximately IR£223M.

2.4 Quantification of Current Traffic Flows on Links and Junctions

2.4.1 In establishing the scope of a traffic impact assessment the Institution of Highways and Transportation recommends the following:

> *"Although most TIAs relate to large or extensive developments it should be recognised that the movement of two milk tankers to a remote farm down a country lane may, in certain circumstances, be deemed to be unacceptable by the planning authority. In contrast, some city centre developments may attract a large proportion of their trips by public transport. This is often ignored because, whilst car trips form a much lower relative trip proportion, their impact often requires more detailed analysis." (Reference - IHT Guidelines for Impact Assessment: para 7; page 5)*

"It is, therefore, not possible to provide any hard and fast rules as to what constitutes a significant traffic impact and hence one for which a full traffic impact assessment should be undertaken. The Guidelines therefore recommend that a TIA should normally be produced where one or other of the following thresholds are exceeded:
(Reference - IHT Guidelines for Impact Assessment: para 8; page 5)

- *Traffic to and from the development exceeds 10% of the two-way traffic flow on the* ***adjoining highway***
- *Traffic to and from the development exceeds 5% of the two-way traffic flow on the* ***adjoining highway****, where traffic congestion exists or will exist within the assessment period or in other sensitive locations*

These thresholds should be applied in the absence of alternative guidelines from the highway (roads) authority in the form of approved or adopted policy."
(Reference- IHT Guidelines for Impact Assessment: para 9; page 6)

"It is recommended that the threshold approach should also be used to establish the area of influence of the development. Hence the study should include all links and associated junctions where traffic from the development will exceed 10% of the existing traffic (5% in congested or other sensitive locations) or such other threshold as may have been adopted by the highway (roads) or planning authority."
(Reference - IHT Guidelines for Impact Assessment: para 13; page 6)

2.4.2 In accordance with the above advice we have included in our assessment locations on the local roads network considered as having the 'potential' to experience increases in traffic flow of +10% as a direct result of traffic generated by the proposed development.

Data Collection - Traffic Surveys

2.4.3 In establishing the scope of the study, given the nature of developments in the general vicinity of the proposed site, it was thought that the influence of any additional traffic generation manifest on the local roads network was not likely to be significant beyond the immediate vicinity of the existing site.

2.4.4 In the interest of a comprehensive assessment of traffic patterns on the local roads network in the vicinity of the proposed development **Traffic***wise* Ltd. has commissioned Abacus Transportation Surveys to carry out 12 hour classified traffic turning count surveys at the existing roundabout junctions located at either end of the existing Cappagh Road onto which it is proposed the development will be provided with direct vehicular access.

2.4.5 The above traffic surveys were carried out on Tuesday 5th July over the period 0700-1900hrs using video surveillance (A copy of the video surveys can be made available upon request).

2.4.6 It is normal practice that traffic surveys are carried out on a 'neutral' day of the week, that being Tuesday. A Tuesday was selected as the traffic flows manifest on this 'neutral' day of the week are normally representative of typical traffic conditions on the local roads network.

2.4.7 It is acknowledged that July is not generally accepted as a neutral month in traffic terms. The primary reason for this is the absence from the roads network of schools related traffic, which has a significant impact on the operation of the general roads network during the commuter peak hour.

2.4.8 Given the industrial nature of the surrounding developments, although there is likely to be commuter traffic on this network, it is not though likely that significant schools traffic would be manifest on the Cappagh Road, and the above traffic surveys of 5th July are therefore considered likely to be representative of normal daily traffic flows on the Cappagh Road.

2.4.9 The locations where the 12 hour traffic surveys were undertaken are the new roundabout junction at the intersection of the Cappagh Road and the Kilshane Road, and the roundabout intersection of the Cappagh Road and the Ballycoolin Road. For ease of reference hereafter these junctions will be referred to in the report as the Kilshane Road Roundabout and the Ballycoolin Road Roundabout, respectively.

2.4.10 In addition to the above traffic survey data we are in possession of traffic count data collected at an existing facility operated by the Applicant adjacent to the N2 National Primary Road at Rathdrinagh in Co Meath. These surveys were commissioned by **Traffic***wise* Ltd. and conducted by Abacus Transportation Surveys on Tuesday 18th November 2003.

2.4.11 It is proposed that these previous surveys will be used to identify the general daily site traffic patterns and other traffic related parameters associated with such waste facilities operated by the Applicant.

2.4.12 **Traffic***wise* Ltd. are in possession of several such counts at similar facilities and care has been taken to generally validate the Rathdrinagh facility count data against our experience in the development and operation of similar waste treatment facilities throughout the country.

Identification of Network Peak Hour

2.4.13 The morning and evening peak hour periods on the Cappagh Road past the site were recorded in the traffic surveys as being 0730-0830hrs and 17:00-18:00hrs respectively.

2.4.14 The peak hour accumulative two-way traffic flow on the Cappagh Road in the morning shows 641 movements, 604 of which are cars and light vans and 37 HGV. Of these vehicles 121 cars and 16 HGV travelled northbound whilst 483 cars and 21 HGV travelled southbound.

2.4.15 The peak hour accumulative two-way traffic flow on the Cappagh Road in the evening shows 968 movements, 941 of which are cars and light vans and 27 HGV. 756 cars and 22 HGV travelled northbound whilst 185 cars and 5 HGV travelled southbound.

2.4.16 A copy of the survey data together with a location map of the junctions surveyed is provided in Appendix A.

2.4.17 In Figure 2.1 below we provide a graph showing northbound and southbound recorded two-way traffic flows on the Cappagh Road past the site during the traffic surveys.

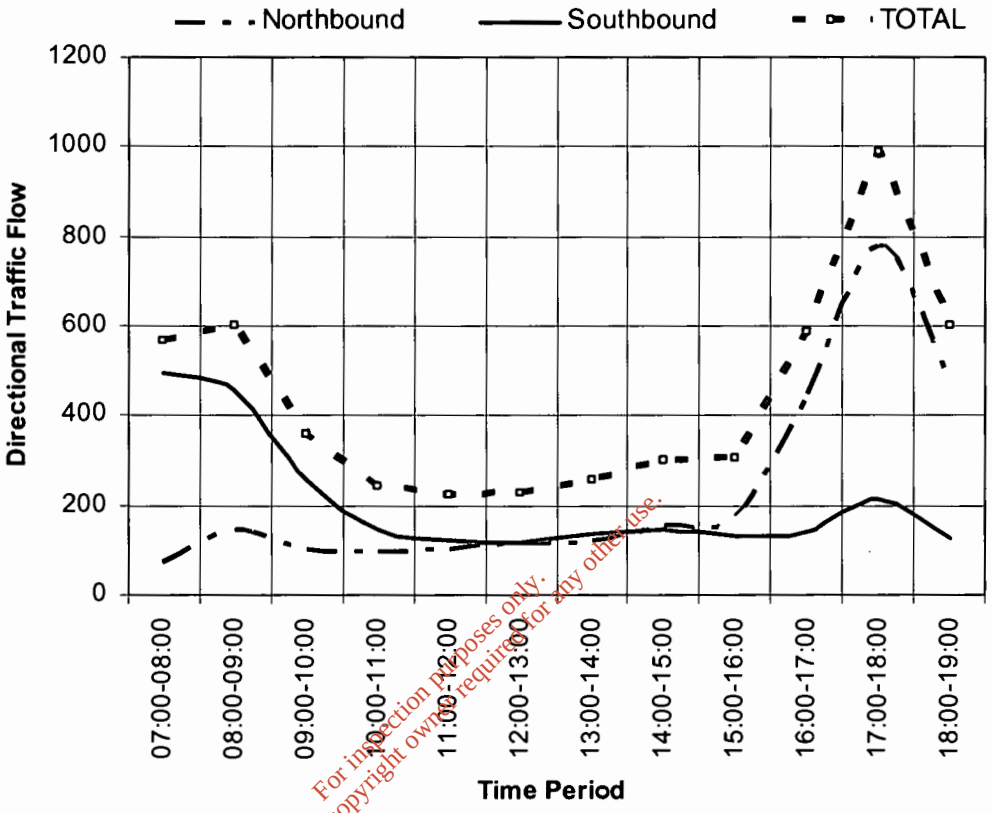

Figure 2.1 Mainline Cappagh Road Recorded Hourly Traffic Flows (2005)

2.4.18 Figure 2.1 above shows that during the day there is a relatively consistent volume of traffic in both directions. Between 10am and 4pm the recorded traffic flows in either direction are practically equal. Over this time period, which constitutes the majority of the working day, traffic flows in both directions are typically 115 cars and 15HGV.

2.4.19 The data in the morning and evening peak periods highlights the tidal nature of traffic movements on the Cappagh Road and it noted that the evening peak is significantly greater than the morning peak.

Estimate of Development Peak Hour

2.4.20 In order to establish the likely maximum period of impact of development generated traffic on the operation of the existing roads network we have prepared Figure 2.2 below which is a graph of all inbound and outbound vehicle movements at the existing PANDA operated waste facility located on the N2 at Rathdrinagh, Co Meath.

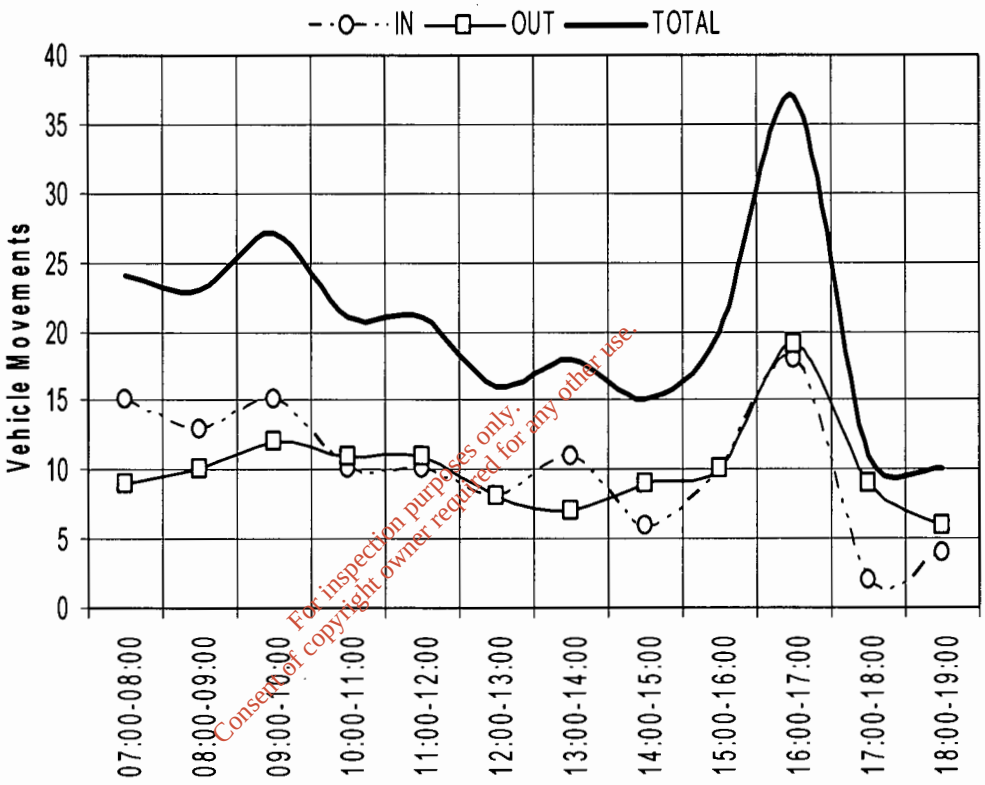

Figure 2.2 Rathdrinagh PANDA Facility Recorded Total Hourly Traffic Flows

2.4.21 From the data recorded at the existing Rathdrinagh waste facility entrance, the average number of inbound vehicles per hour was recorded as 10 and the outbound equivalent was also 10.

2.4.22 As can be seen from Figure 2.2 above there is a modest peak in traffic generation in the period 09:00-10:00hrs with a total two-way traffic flow of 27 vehicles.

2.4.23 The maximum period of activity recorded at the existing entrance occurs between 16:00-17:00hrs with a total two-way flow of 37 vehicles, 18 inbound and 19 outbound.

2.4.24 The evening development peak generation equates to approximately 15% of the total daily traffic generation both inbound and outbound at the facility, in the morning the equivalent percentage is in the region of 8.3%.

2.4.25 From the above therefore it can be seen that the time period during the 2003 traffic surveys which show an identifiable development peak in traffic flows is 16:00-17:00hrs. It is therefore expected that the period of likely maximum impact of the proposed development generated traffic will be manifest during the 16:00-17:00hr period, one hour prior to the typical commuter network peak hour.

2.4.26 Notwithstanding the above, and the identified development peak of 16:00-17:00hrs, in the interest of a robust assessment, which can be compared against the existing permitted development, and in the interest of providing the Local Authority with some degree of comfort in determining the application the evening assessment scenario we have selected will consider the coincident occurrence of the development peak of 16:00-17:00hrs with the road network peak of 17:00-18:00hrs.

2.4.27 It can be seen from Figure 2.2 above that, contrary to the assumed assessment scenario, the site generated traffic is in fact likely to be at its lowest during the recognised evening commuter peak hour of 17:00-18:00hrs. Nevertheless, the assessments to follow in this report will be based on the development peak hour traffic generation flows (16:00-17:00hrs) being assumed to occur in the network peak period.

2.4.28 Combining the two peaks will in theory represent an extreme 'worst case' scenario with respect to potential impact on the operation of the local roads network. As stated above this scenario, however likely or unlikely, is assessed in order to provide the Local Authority with sufficiently robust traffic data upon which to determine the traffic implications of the application with high degree of surety or confidence.

2.4.29 In the morning the modest development peak coincides with the network peak and therefore no adjustments will be made to the traffic figures for the morning peak hour assessments.

3 PROPOSED DEVELOPMENT

3.1 General Operation

3.1.1 PANDA Waste Services (PANDA) propose to construct and operate a recycling facility at Cappogue, Fingal. As outlined in the planning application documents, the facility will be developed in a series of distinct Stages.

3.1.2 In Stage 1 the facility will accept and recycle approximately 50,000 tonnes of tonnes of Construction and Demolition (C & D) and Commercial and Industrial (C & I) waste per annum. Stages 2 and 3 will involve the expansion of the recycling capacity to process Dry Recyclables and source Municipal Solid Wastes (MSW).

3.1.3 As discussed earlier, it is not envisaged that processing of the levels proposed under Stages 2 and 3 would be realised at the site prior to both the opening of the N2 Road Improvement Scheme and the realignment and upgrade of the Cappagh Road. It is though that both of these schemes will be realised before 2007.

3.1.4 When fully operational it is intended to accept and process 250,000 tonnes of potentially recyclable materials per annum. The proposed capacity is designed to allow for the progressive expansion of the recycling activities that can be processed and thus facilitate PANDA in tendering for local authority contracts in relation to the collection and recycling of MSW.

3.2 Facility Layout and Development

3.2.1 The site is located on Cappagh Road to the north of Stadium Business Park. The Cappagh Road forms the northern boundary of the application lands. It is proposed that the facility will be developed in 3 distinct Stages as detailed below.

3.2.2 Stage 1 will include site preparation and provision of site services, construction of perimeter security fencing, internal access roads and hard-standing areas, foul and surface water drainage system, weighbridge(s), the Construction and Demolition and Commercial and Industrial Waste Recycling Building, administration area, ESB substation and car parking. The main building will encompass approximately 1,956 square metres (m^2) The processing equipment will be fitted with dust control systems

3.2.3 Stage 2 will involve the construction of the Dry Recyclables Building which will encompass approximately 3,362 m^2.

3.2.4 Stage 3 will involve the construction of the Municipal Solid Waste Recycling Building. The Building will encompass approximately 5,546 m^2 and will be provided with an odour management system.

3.3 Hours of Operation

3.3.1 The proposed normal waste acceptance hours are 06:00 to 20:00hrs, Monday to Saturday inclusive. The facility will not normally open on Sundays. The proposed operational hours are 06:00 to 22:00hrs. However due to the nature of the waste recycling business on occasion it may be necessary for vehicles delivering wastes and removing recycled materials to operate outside these hours, for example to meet customer demands in relation to the collection of wastes and the delivery of recycled construction materials.

3.4 Waste Types and Volumes

3.4.1 The anticipated waste types and volumes that will be accepted at the facility are shown on Table 3.1. In Stage 1 it is estimated that a maximum of 50,000 tonnes of recyclable materials, comprising Construction and Demolition, and Commercial and Industrial waste will be accepted at the site.

3.4.2 It is anticipated that when the facility is operating at maximum or ultimate capacity (following completion of Stages 2 and 3 and the receipt of a Waste Licence from the Environmental Protection Agency) waste inputs will have grown to a maximum of 250,000 tonnes of waste per annum.

Waste Type	Operational Capacity	
	Stage 1	Ultimate Capacity
C & D and C & I	50,000	120,000
Dry Recyclables	0	30,000
Municipal Solid Wastes	0	100,000
TOTAL	**50,000**	**250,000**

Table 3.1 Total Waste Input to Facility

3.4.3 Initially, the majority of the C & D and C & I waste will be generated by, and delivered to the facility, by PANDA collection vehicles. This will minimise the risk of the delivery of unsuitable material. As the business develops it is envisaged that increasing amounts of waste will be delivered by third parties, including permitted waste collectors. Wastes will not be accepted from individual householders.

3.5 Waste Processing

3.5.1 Although the processing of waste is described elsewhere in the application documentation, it is considered worthwhile to outline the traffic related detail of how wastes are transported to the site, handled and exported. In the following a brief description of the processing procedure is provided for each waste stream.

Construction and Demolition Waste

3.5.2 The waste will be delivered in covered skips. All waste delivered to the facility will be inspected to determine if it is suitable for recycling activities. Any waste loads, which upon inspection are found to contain large amounts of unsuitable wastes, will not be accepted at the site but diverted to PANDA's Waste Licensed facility in Meath. The accepted wastes will be off loaded inside the C & D and C & I Recycling Building.

3.5.3 As outlined above, initially, the majority of the C & D and C & I waste will be generated by and delivered to the facility by PANDA collection vehicles. Form recent empirical data gathered at the PANDA waste facility at Rathdrinagh in Co Meath we have established that the average payload per skip is 6.3 tonnes. This average is derived from recent weighbridge data and is based on the use of modern vehicles.

3.5.4 From our experience of the operation of similar facilities, mixed construction and demolition waste can be expected to arrive in larger loads (20 tonnes), but on average the payload is typically expected to be between 5.5 and 8.0 tonnes per vehicle, accordingly the above figure of 6.3 tonnes adopted from the Meath facility is expected to be representative.

3.5.5 Wood and metal will be separated manually using a mechanical grab and subsequently removed off-site to approved recovery/recycling facilities. The residual material will be shredded and screened to remove the fine fraction containing subsoil and topsoil, which will be removed of site in articulated trucks for use in land reclamation projects. The heavy fraction containing concrete, brick etc. will then pass through a crusher to produce an inert aggregate suitable for use in construction projects. The materials will be removed off-site in articulated trucks for use in construction projects.

3.5.6 As is the typical operation and indeed function of such facilities in transportation terms, all outbound movements of processed materials will be in the most commercially viable payloads.

3.5.7 It is in the interest of the operator to ensure that outbound payloads are maximised. Modern articulated vehicles are typically capable of 24 tonne payloads. In the interest of a robust assessment of the likely traffic generation of the proposed development it is assumed that the average outbound payload will be 20 tonnes. This is a typical outbound payload and takes into account any increases in outbound traffic volumes which might occur as a result of some incidences of partial loads.

Commercial & Industrial Waste

3.5.8 The Commercial and Industrial wastes will include pre-segregated and mixed wastes which will be delivered to the facility in compactors, rear end loaders and skips. In the initial stages the pre-segregated wastes will be off loaded in the C & D and C & I Recycling Building in separate bays from the mixed waste. Following the construction of Stage 2 this waste stream will be diverted to the Dry Recyclables Building.

3.5.9 From our experience of the operation of similar sites, and from the data at the Rathdrinagh site, it is estimated that the typical average load delivered to facilities in the above vehicle types is 6 to 8 tonnes. For the purposes of the traffic assessments herein it is assumed that the average inbound vehicle payload will be 6.5 tonnes.

3.5.10 On the tipping floor the waste will be inspected for unsuitable wastes and such materials will be immediately removed to a designated internal waste quarantine area. The pre segregated material will be moved to the baling units or loading bays where, depending on its nature, it will be baled, or compacted before being loaded onto curtain side trailers for removal off-site.

3.5.11 For the purposes of this assessment and in the interest of simplifying the calculations, it is assumed that outbound C&I waste payloads will be 20 tonnes, although it should be noted that bailed wastes are often transported in larger tonnages (up to 30 tonnes).

3.5.12 The mixed waste will initially be sorted using a mechanical grab to remove large items such as timber and metal. Such items will be removed to the appropriate storage/handling areas inside the building. The remaining waste will be separated manually and mechanically into the different waste streams (paper, cardboard, plastic, glass, metal, organics).

3.5.13 The organic waste will be removed to an off-site composting facility in articulated trucks, while the inert materials will be stored on-site pending removal off-site recovery facilities. As above typical outbound vehicle payloads are 20 tonnes, and this is the figure we have adopted for the purposes of this traffic study.

Municipal Solid Wastes

3.5.14 Municipal Solid Wastes comprising mixed and pre segregated materials will be delivered to the facility in refuse collection vehicles. Although the tonnages carried by refuse vehicles can vary widely (max payloads are in excess of 10 tonnes). The proposed facility will employ modern refuse vehicles similar to those now in use at the Rathdrinagh facility. From a review of recent weighbridge data at that facility it has been established that the current average inbound payload of vehicles transporting Municipal Solid Wastes to the site is 7.99 tonnes. Considering that the same type of vehicles will be used at the proposed facility it is considered reasonable to adopt an average inbound payload of 8.0 tonnes for the purposes of this assessment.

3.5.15 Mixed and pre-segregated dry recyclables will be unloaded in a designated area inside the Dry Recyclables Building, where it will be inspected to ensure it is suitable for processing i.e. it does not contain any hazardous or other unsuitable material.

3.5.16 It is proposed to mechanically separate the mixed waste to remove recyclable materials including metals, paper, plastics, compostable materials and materials that are suitable for energy recovery. The recovered metals, paper and plastic will be stored on-site pending removal to off-site recovery/recycling facilities using curtain side trailers/containers. The compostable materials will be removed off-site for composting at a licensed facility. The residue will be processed on site to produce a refuse derived fuel (RDF) which will be shipped overseas in enclosed containers for use as a fuel pending the development of Irish markets for this product. It is assumed for the purposes of this assessment that all outbound loads will be an average of 20 tonnes per vehicle.

3.6 Existing Planning Permission

3.6.1 The existing site currently enjoys a planning permission Planning Register Reference No. F04A/1123. The Applicant in the case of the current permission is Heatherly Securities Ltd. The development is described in the permission as follows.

"Industrial/Office development of 10,579sq.m which would consist of 7No. 2 storey Industrial/Office Units varying from 523sq.m. to 2,273sq.m. and in height from 8.3m to 9.85m including ESB substation and switching room of 28.8sq.m. with associated parking for 304 cars, boundary fencing, landscaping, berming, site works and a new access road from the existing Stadium Business Park on a 2.58 hectare site adjacent to the Cappagh Road."

3.6.2 As described in the introduction, in the interest of a comprehensive and comparative assessment of the traffic characteristics of the existing 'development site' we will provide an assessment of the traffic generation potential of the existing permitted Industrial/Office development together with that of the proposed waste treatment facility.

4 MODAL CHOICE/TRIP ATTRACTION

4.1 Current Permitted Development – Potential Traffic Generation

4.1.1 As outlined above the current planning permission includes for 10,579sq.m Industrial/Office development with parking provision for some 304 vehicles. The conditions appended the permission stipulates in 5(a) that the office element can occupy up to 25% of the total floor area. The detail of Condition 5(b) infers that dual warehouse and or production activities are expected at the site in the granting of permission.

4.1.2 In the interests of establishing the likely levels of traffic expected to be attracted by a development of the nature permitted we have interrogated the TRICS v4.7 database (Trip Rate Information Computer System). The current version of TRICS contains over 1,200 development sites and 3,000 survey days, within 81 separate land uses across the development spectrum. The flexibility of the system allows the user to calculate trip rates from individual, or a group of selected development sites, which can be selected by the user imposing a wide range of database field criteria (such as Site Area, Gross Floor Area, Retail Floor Area, number of employees etc.).

4.1.3 In forecasting the likely traffic generation at a proposed development through reference to a database, the Institution of Highways and Transportation guidelines advise as follows,

> *"having assessed the database to derive an estimate of trip attraction, professional judgement has to be applied in determining how the information should be used. It will be noted that that for most land uses the spread of data is very large and hence the use of average trip rates as a guide to the design of junction layout or the sizing of a car park could lead to under or over-provision. As the real cost of undersizing infrastructure is frequently very considerable, since additional land cannot be made available later, it is recommended that developers and highway authorities should adopt a robust forecast i.e. a value higher than the average.*

An approach that is currently in widespread use is to consider a range of values with the higher value being the 85th percentile of the data sample (i.e. .the trip rate exceeded by only 15% of the sample) and the lower value being reflected by the average trip rate."

4.1.4 We have interrogated the TRICS database under the following land-use categories.

- Employment – Office
- Employment – Warehousing
- Employment – Industrial

Office Development - Assessment Trip Rate

4.1.5 Results for office developments were returned based on a selection of some 122 individual surveys. To determine the 85th percentile site in accordance with the above advice of the Institution of Highways and Transportation, the database survey sites were ranked in order of traffic generation. The ranking parameter was the total number of vehicle movements to and from the survey sites over the peak hour traffic periods on the Cappagh Road, identified as 07:30-08:30hrs and 17:00-18:00hrs respectively.

4.1.6 TRICS site reference WS-02-A-04 is the 85th percentile survey site for both the morning and evening peak periods. By way of further information, this is the site of Southern Water's Offices of 6,502sq.m in Worthing, West Sussex, England. TRICS detail on the 85th percentile site is as follows. *"This site was part of the TRICS Seasonality Research project, and was surveyed continuously over the duration of a year. The site is located at the edge of the Durrington-on-Sea part of Worthing, at the western edge of the town. It is off the A2032, which heads west out of Worthing and past Angmering, and east through Worthing and past Sompting. Other local roads head towards the coastal areas. A college is located to the east of the site, whilst non built-up areas to the east and north-east include woodlands and campsites. More built-up areas are in the other directions.'*

4.1.7 The 85th percentile assessment traffic generation rates forecast at typical office developments is as shown in Table 4.1 below. Based upon 25% of the GFA accommodating office type uses the potential traffic generation of this element of the permitted development is also provided in Table 4.1.

Peak Time Period	Forecast Assessment Trip Rate per 100sq.m		Potential Traffic Generation	
	Arrival Rate	Departure Rate	Arrivals	Departures
Morning 07:30-08:30hrs	2.17	0.35	**57**	**9**
Evening 17:00-18:00hrs	0.50	2.40	**13**	**63**

Table 4.1 Forecast Potential Peak Hour Traffic Generation - Offices
(Source TRICS v4.7)

Warehouse Assessment Trip Rate

4.1.8 The selection of sample sites in the TRICS database is not as extensive in this category of development, accordingly rather than estimate or interpolate an 85th percentile site, we have chose the 100th percentile trip rates for all sites. Results for warehouse developments were returned based on a selection of some 6 individual surveys.

4.1.9 The 100th percentile peak hour assessment traffic generation rates forecast at warehouse developments are as shown in Table 4.2 below. Based upon 75% of the total GFA accommodating warehouse uses the potential traffic generation to this element of the permitted development is also provided in Table 4.2.

Peak Time Period	Forecast Assessment Trip Rate per 100sq.m		Potential Traffic Generation	
	Arrival Rate	Departure Rate	Arrivals	Departures
Morning 07:30-08:30hrs	0.73	0.37	**58**	**29**
Evening 17:00-18:00hrs	0.10	0.48	**8**	**38**

Table 4.2 Forecast Potential Peak Hour Traffic Generation - Warehouse
(Source TRICS v4.7)

Industrial Units Assessment Trip Rate

4.1.10 The selection of sample sites in the TRICS database for industrial uses is similarly not as extensive as for offices. Nonetheless there are 16 individual survey days. The 85th percentile site is not reported by TRICS since the sample size is less than 20 sites, accordingly judgement has been used in the selection of trip rates considered representative of the 85th percentile.

4.1.11 The estimated 85th percentile peak hour assessment traffic generation rates forecast at industrial unit developments are as shown in Table 4.3 below. Based upon 75% of the total GFA accommodating industrial units the potential traffic generation to this element of the permitted development is also provided in Table 4.3.

Peak Time Period	Forecast Assessment Trip Rate per 100sq.m		Potential Traffic Generation	
	Arrival Rate	Departure Rate	Arrivals	Departures
Morning 07:30-08:30hrs	2.2	0.17	**175**	**13**
Evening 17:00-18:00hrs	0.13	0.68	**10**	**54**

Table 4.3 Forecast Potential Peak Hour Traffic Generation – Ind. Units
(Source TRICS v4.7)

Overall Development Considered as an Industrial Estate

4.1.12 It might not be unreasonable to assume that the permitted development would in traffic terms operate in a manner similar to an Industrial Estate. In the interest of a comprehensive study of the potential traffic generation of the permitted development in the following we provide an estimate of the peak hour assessment traffic generation of the permitted development under the TRICS category of 'Industrial Estate'.

4.1.13 The selection of 85th percentile peak hour trip rates is based on a sample of 189 survey sites. The estimated 85th percentile peak hour assessment traffic generation rates forecast at industrial estate type developments are as shown in Table 4.4 below. Based upon 100% of the total GFA being modelled as an industrial estate the potential traffic generation to the permitted development is also provided in Table 4.3.

Peak Time Period	Forecast Assessment Trip Rate per 100sq.m		Potential Traffic Generation	
	Arrival Rate	Departure Rate	Arrivals	Departures
Morning 07:30-08:30hrs	RE-02-D-04 1.19	RE-02-D-04 0.35	**126**	**37**
Evening 17:00-18:00hrs	LC-02-D-03 0.37	ST-02-D-02 1.37	**39**	**145**

Table 4.4 Forecast Potential Peak Hour Traffic Generation – Ind. Estate.
(Source TRICS v4.7 – 85th%ile Site Referenced)

Summary of Potential Traffic Generation of Permitted Development

4.1.14 The following Table 4.5 is a summary of the above traffic generation rate assessments and provides a range of traffic generation which could reasonably be expected at the permitted development land uses during the peak hour periods.

4.1.15 Four separate scenarios are considered as follows:

- Scenario A: 25% Office Use + 75% Warehouse
- Scenario B: 25% Office Use + 75% Industrial Units
- Scenario C: 25% Office Use + 37.5% Industrial Units + 37.5% Warehouse
- **Scenario D: 100% Industrial Estate**

Assessment Criteria	Peak Time Period	Potential Traffic Generation	
		Arrivals	Departures
Morning 07:30-08:30hrs	Scenario A	115min	38
	Scenario B	232max	22min
	Scenario C	173	30
	Scenario D	126	37
	AVERAGE	**161**	**32**
Evening 17:00-18:00hrs	Scenario A	21min	101min
	Scenario B	23	117
	Scenario C	22	109
	Scenario D	39max	145max
	AVERAGE	**26**	**118**

Table 4.5 Potential Peak Hour Traffic Generation – Permitted Development

4.1.16 From the above data of Table 4.5 it can be seen that the traffic generation forecast for the site under the various scenarios is relatively similar. The average inbound traffic generation in the morning peak hour is 161 vehicles and the average outbound generation in the evening is 118 vehicles.

4.1.17 Although under Scenario D the morning peak is less intense than the average, the evening peak is higher. On balance it is considered that the Scenario D (Industrial Estate) is likely to provide a reasonable estimate of traffic generation to the permitted site development on a daily basis. For the purposes of the assessments herein it is assumed that 20% of the traffic to the permitted development, modelled as an Industrial Estate, would be HGV.

4.1.18 Form the TRICS database under the category of Industrial Estate the 85th percentile trip rates for the 12 hour period 07:00-19:00hrs are 6.71/100sq.m. and 6.61/100sq.m for departures and arrivals respectively.

4.1.19 Over the course of the entire working day it is therefore estimated that the permitted development would be likely to generate approximately 710 inbound vehicles movements, and 700 outbound movements.

4.2 Proposed Development – Potential Traffic Generation

4.2.1 PANDA Waste Services (PANDA) propose to construct and operate a recycling facility at Cappogue, Fingal. As outlined in the planning application documents, the facility will be developed in a series of Stages.

4.2.2 In Stage 1 the facility will accept and recycle approximately 50,000 tonnes of tonnes of Construction and Demolition (C & D) and Commercial and Industrial (C & I) waste per annum. Stages 2 and 3 will involve the expansion of the recycling capacity to process Dry Recyclables and source Municipal Solid Wastes (MSW).

4.2.3 When fully operational it is intended to accept and process 250,000 tonnes of potentially recyclable materials per annum.

4.2.4 In the following, combined with the information provided in Section 3.5 *'Waste Processing'* we provide an estimate of the number of works vehicles which might reasonably be expected to be generated by the proposed development when fully operational. The methodology adopted in the assessment is based on empirically derived data from similar waste facilities throughout the country (predominantly within 20km of Dublin) together with data recorded at the PANDA waste facility located adjacent to the N2 at Rathdrinagh, Co Meath.

4.2.5 In Section 3.5 empirically derived data is provided regarding the typical payloads of the various vehicles which are normally used to transport the various waste streams imported and exported from similar waste facilities. Given the estimated ultimate quantities of waste it is proposed will be processed in each waste stream, it is possible to estimate likely traffic generation rates at the proposed development site over the course of a typical working day. Derivation of traffic generation by this methodology is endorsed by the Institution of Highways and Transportation.

Waste Transportation Related Traffic Generation – Stage 1

4.2.6 In Stage 1 of the proposed development it is proposed to accept an ultimate quantity of some 50,000 tonnes of waste in C&D and C&I waste streams. From Section 3.5 the typical payload of Skip Lorries importing C&D waste is shown to be 6.3 tonnes. The equivalent typical inbound payload for Rear End Loaders, Skips and Compactors delivering C&I waste is estimated to be approximately 6.5 tonnes. In the interest of simplifying the calculations it is assumed that the average inbound payload for both waste streams is the lower of the two values.

4.2.7 Based on all waste, be it C&D or C & I, imported in payloads of 6.3 tonnes, the annual import of a combined total of 50,000 tonnes is estimated as likely to generate in the region of 7,936 vehicle trips per annum.

4.2.8 As is typical practice at similar facilities, it is expected that the operator of the site will exploit insofar as practicable the load carrying capacity of the articulated vehicles used to export waste from the site. The typical payload of vehicles exporting was is approximately 20 tonnes. Based on 50,000 tonnes of waste being processed at the facility it is likely that some 2,500 vehicles would be generated by the export of materials during Stage 1 operations.

4.2.9 Stage 1 is therefore likely to generate in the region of 7,936 smaller rigid body HGV (skip lorry) importing waste and some 2,500 articulated HGV exporting processed wastes.

4.2.10 Allowing for bank holidays and half-day working on Saturdays there are approximately 272 working days per year when wastes will be received at the facility. Accordingly it can be appreciated that the typical daily traffic generation of the proposed Stage 1 facility, when fully developed, will be some 29 vehicles importing waste and 9 exporting waste.

4.2.11 In the above assessment all vehicles importing waste are presumed to leave the site empty and we have presumed there will be no backhaul of materials. Given that skip lorries are presumed to leave empty, those movements associated with the delivery of skips to customers are considered to be included for in the calculations. In the interest of clarity, the above data is summarised in Table 4.6 below.

Waste Type	Quantity	Daily Vehicle Trip Generation Stage 1		
		Import	Export	Total
		Veh/day	Veh/day	Veh/day
C & D and C & I	50,000	29	9	38
Dry Recyclables	0	0	0	0
MSW	0	0	0	0
TOTAL	**50,000**	**29**	**9**	**38**

Table 4.6 Daily Works Traffic Generation of Proposed Facility – Stage 1 (Assessment Traffic Flows)

4.2.12 From Table 4.6 the proposed facility is forecast as likely to generate 38 daily vehicle trips with respect to waste transportation. A trip incorporates two separate vehicle movements, in and out of the site, in total therefore the site is estimated as likely to generate 38 vehicle movements both to and from the site giving a total number of individual vehicle movements in the order of 76 per day.

4.2.13 From our review of the operation of similar sites together with the operation of related waste and landfill sites, significant peaks in traffic generation are not normally experienced in relation to works traffic.

4.2.14 Save for a peak in the morning during which typically 14% of daily works traffic is generated, normally such sites generate in the region of 9% of daily traffic for each hour of off-peak operation. It is normal for works traffic generation to reduce significantly after about 17:00hrs. In general, save for a unique peak between 16:000-17:00hrs, these patterns of traffic generation are reflected in the 2003 traffic surveys of the existing PANDA waste facility at Rathdrinagh.

4.2.15 Form the 2003 data recorded at the Rathdrinagh site it has been estimated that peak morning traffic to that site is approximately 8.3% of daily traffic, whilst in the evening the equivalent figure is 15%. This shows a reversal in peak activity over the norm outlined above. Given this disparity with respect only to the peak hours, in the interest of a robust assessment it is assumed that there would be a peak traffic generation of 15% of daily traffic generation in both the morning and evening network peak hours. Clearly this assumption is robust.

4.2.16 Based on the above assumption it is expected that during the peak hours the proposed site will generate an 'assessment' traffic flow of approximately 4.35 trips by smaller rigid body HGV such as skips and the like and 1.4 articulated HGV trip exporting waste.

4.2.17 Works traffic generation beyond the hour ending 17:00hrs is likely to drop from the average, nevertheless for the purposes of the assessments herein it is assumed that the evening peak hour period will see the above peak development traffic generation of 15% of daily traffic generation, which is indeed considered robust.

4.2.18 A summary of the forecast peak hour assessment traffic generation of Stage 1 is provided in Table 4.7 below.

Time Period	Works Vehicle Trip Generation – Stage 1					
	Rigid Body		Articulated		Total	
	In	Out	In	Out	In	Out
Morning 07:30-08:30hrs	4	4	1	1	5	5
Off Peak Times	3	3	1	1	4	4
Evening 17:00-18:00hrs	4	4	1	1	5	5

Table 4.7 Peak Works Traffic Generation at Proposed Facility – Stage 1
(Assessment Traffic Flows)

Waste Transportation Related Traffic Generation – Ultimate Capacity

4.2.19 It is proposed that the development will have the ultimate processing capacity of some 250,000 tonnes per annum. The proportion of handling capacity for each waste stream is estimated to be 120,000 tonnes of C&D and C&I, 30,000tonnes of Dry Recyclables and 100,000 tonnes of MSW.

4.2.20 From Section 3.5 the typical payload of Skip Lorries importing C&D waste is shown to be 6.3 tonnes. The equivalent typical inbound payload for Rear End Loaders, Skips and Compactors delivering C&I waste is estimated to be approximately 6.5 tonnes. In the interest of simplifying the calculations a typical payload of 6.3 tonnes is assumed in both waste streams. Based on the import of 120,000 tonnes this element of the facility would be likely to generate in the region of 19,047 vehicles per annum.

4.2.21 By way of information only, if all waste were C&I and were imported in 6.5 tonne loads this figure would reduce to 18,460 vehicles per annum due to the increased average payload normally associated with C&I waste streams.

4.2.22 In the Dry Recyclable and MSW waste streams the inbound typical loads are estimated to be approximately 8.0 tonnes per vehicle. Based on the import of 130,000 tonnes, this element of the facility is forecast as likely to generate in the region of 16,250 vehicle movements per annum.

4.2.23 As is typical practice at similar facilities, it is expected that the operator of the site will exploit insofar as practicable the load carrying capacity of the articulated vehicles used to export waste from the site. The typical payload of these vehicles is approximately 20 tonnes. Based on 250,000 tonnes of waste being processed at the facility it is likely that some 12,500 vehicles per annum would be generated by the export of materials if the site were operating at Ultimate processing capacity.

4.2.24 In summary therefore, when fully operational the facility is estimated as having the potential to generate in the region of 19,047 smaller rigid body HGV and 16,250 refuse vehicles importing waste and some 12,500 articulated HGV exporting processed wastes.

4.2.25 Allowing for bank holidays and half-day working on Saturdays there are approximately 272 working days per year when wastes will be received at the facility. Accordingly it can be appreciated that the typical potential daily traffic generation of the proposed facility if operating at ultimate capacity will be some 70 smaller rigid body HGV together with 60 refuse vehicles importing waste and 46 articulated vehicles exporting waste.

4.2.26 In the above assessment all vehicles importing waste are presumed to leave the site empty and we have presumed there will be no backhaul of materials. Given that skip lorries are presumed to leave empty, those movements associated with the delivery of skips to customers are considered to be included for in the calculations. In the interest of clarity, the above data is summarised in Table 4.8 below.

Waste Type	Quantity	Vehicle Trip Generation		
		Import	Export	Total
		Veh/day	Veh/day	Veh/day
C & D and C & I	120,000	70	22	92
Dry Recyclables	30,000	60	24	84
Municipal Solid Wastes	100,000			
TOTAL	**250,000**	**130**	**46**	**176**

Table 4.8 Works Traffic Generation of Proposed Facility – Ultimate Capacity
(Assessment Traffic Flows)

4.2.27 From Table 4.8 the proposed facility is forecast as likely to generate 176 vehicle trips with respect to operations traffic in the import and export of waste. A trip incorporates two separate vehicle movements, in and out of the site, in total therefore the site is estimated as likely to generate 176 vehicle movements both to and from the site giving a total number of individual vehicle movements in the order of 352 per day.

4.2.28 Earlier calculations based on the TRICS database indicate that the likely daily traffic generation of the permitted Industrial development is in the order of 700 vehicle trips per day or 1,400 vehicle movements to and form the site.

4.2.29 Even allowing for a robust 50 additional traffic movements to and from the proposed facility by staff and sundry visitors it can be seen that the potential daily traffic generation of the proposed facility operating at ultimate capacity is likely to be in the region of a quarter that of a typical Industrial Estate as is currently permitted on the subject site.

4.2.30 From our review of the operation of similar sites together with the operation of related waste and landfill sites, significant peaks in traffic generation are not normally experienced in relation to works traffic. Save for a peak in the morning during which typically 14% of daily works traffic is generated, normally such sites generate in the region of 9% of daily traffic for each hour of operation. It is normal for works traffic generation to reduce significantly after about 17:00hrs.

4.2.31 Notwithstanding this information, as in the derivation of assessment flows for Stage 1, given the evening peak (16:00-17:00) recorded in the data at the existing Radthdrinagh facility it is assumed for the purposes of assessment that 15% of daily development generated traffic will be manifest in both the morning and evening peak periods on the local roads network. Off-peak traffic generation is assumed to be 9% of daily traffic generation per hour over the course of the working day.

4.2.32 Based on the above assumption it is expected that during the peak hours when operating at Ultimate Capacity the proposed site will generate an 'assessment' traffic flow of approximately 12 trips by smaller rigid body HGV such as skips, 27 trips by refuse vehicles and 7 articulated HGV trip exporting waste and product.

4.2.33 Works traffic generation beyond 17:00hrs is likely to drop from the average, nevertheless for the purposes of the assessments provided in this report it is assumed that the evening peak hour period will see the above peak development traffic generation of 15% of daily traffic generation, which is indeed considered robust.

4.2.34 A summary of the forecast peak hour traffic generation of Stage 1 is provided in Table 4.9 below.

Time Period	Works Vehicle Trip Generation – Stages 2 & 3							
	Rigid Body		Refuse Veh		Articulated		Total	
	In	Out	In	Out	In	Out	In	Out
Morning 07:30-08:30hrs	11	11	9	9	7	7	27	27
Off Peak Times	6	6	5	5	4	4	15	15
Evening 17:00-18:00hrs	11	11	9	9	7	7	27	27

Table 4.9 Works Traffic Generation of Proposed Facility – Ultimate Capacity (Assessment Traffic Flows)

Staff and Sundry Traffic Generation

4.2.35 In addition to the above works vehicles, clearly there will be other sources of traffic generation at the site. This traffic will arise primarily from staff, sundry visitors etc. From traffic surveys undertaken at the PANDA facility located on the N2 at Rathdrinagh, Co Meath we have established that at that facility, in total over the course of the working day there were 68 inbound and 64 outbound car movement recorded. The following Figure 4.2 shows the 2003 daily profile of pcu or passenger car units to and from the Rathdrinagh Facility.

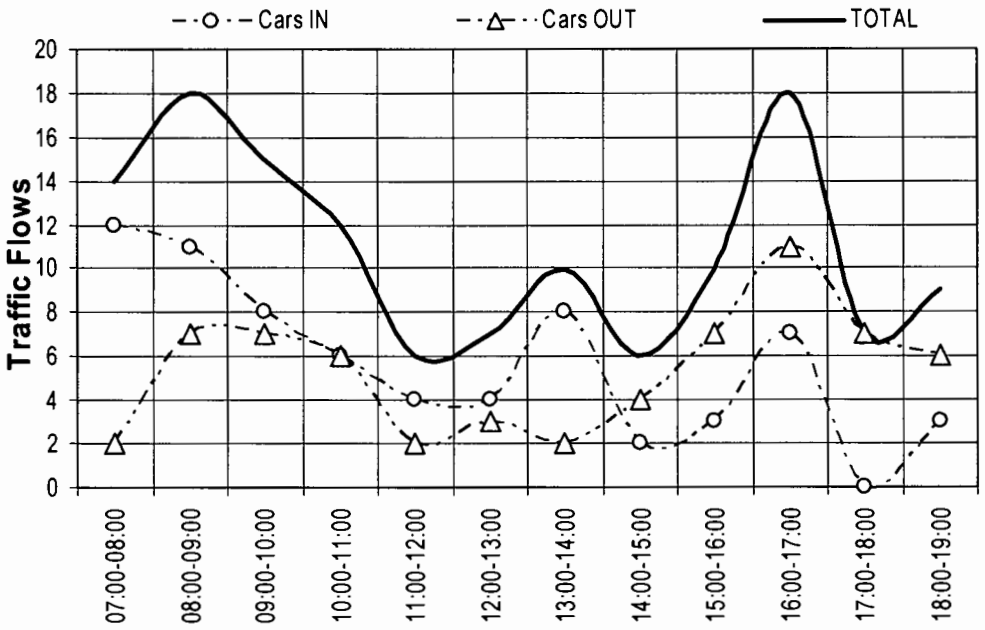

Figure 3.3 Typical 2003 Daily Pattern of Car Bourne Arrivals/Departures
(Source Abacus Transportation Surveys Count of 18th Nov 2003 - Rathdrinagh)

4.2.36 It can be seen that the peak associated with staff arrivals has already occurred prior to the 07:00hrs commencement of the surveys. During the morning peak hour period of 08:00 - 09:00hrs there were 11 inbound and 7 outbound car movements. In the evening development peak hour 16:00 - 17:00hrs there were 11 inbound and 7 outbound movements by private car.

4.2.37 From discussions with the Applicant it is expected that the proposed site would have a lower level of employment than at the Rathdrinagh survey site and indeed should by virtue if its commercial operation (no public access) generate less sundry car traffic than at Rathdrinagh.

4.2.38 The proposed Stage 1 facility will process a similar quantity of waste as was processed at the Rathdrinagh facility in 2003 albeit that there will be only two waste streams processed in Stage 1. Accordingly, it is expected that staffing numbers in Stage 1 will be less than at the existing PANDA facility at Rathdrinagh.

4.2.39 When operating at ultimate capacity in the subsequent phases it is considered reasonable to assume a doubling in the initial Stage 1 staff and sundry vehicle movements generated at the facility over the course of the working day. From discussions with the Applicant and future operator of the site it is estimated that final staffing levels will be less than at Rathdrinagh. For the purposes of this assessment it is assumed that the in the ultimate stage of operation, staffing levels will be approximately 2/3 of that at the Rathdrinagh facility. During Stage 1 it would accordingly be 1/3.

4.2.40 The surveyed pcu (passenger car unit) traffic generation at the Rathdrinagh site shows that 7 inbound and 11 outbound vehicles are recorded during the identified morning peak hour periods. As discussed above, these are assumed to be sundry car movements since staff vehicles generally arrive prior to 07:00hrs.

4.2.41 During the evening peak hour it can be seen form the above Figure 4.2 that activity at the site generally reduces after a peak in and around 17:00hrs. Typical pcu traffic generation is shown as a reversal in the morning situation with 11 inbound vehicles and 7 outbound.

4.2.42 Given that staff should arrive at the site well before the morning peak and leave well after the evening peak this traffic is not included in the peak hour assessments. Unlike the Rathdrinagh facility, the proposed development will not be open to the public, accordingly it is reasonable to expect that sundry car movements would be less at the proposed facility than recorded at Rathdrinagh.

4.2.43 Notwithstanding the above, It is assumed for the proposes of a robust assessment that 5 sundry vehicles (services, postman, late staff etc.) will enter and exist over both the morning and evening peak hour periods. In the interest of simplicity this assumption spans all stages of the project.

Forecast Peak Hour 'Assessment' Traffic Generation

4.2.44 From the above the following Table 4.10 shows the forecast peak hour and off-peak traffic generation at the proposed facility for Stage 1 whilst Table 4.11 shows the equivalent traffic 'assessment' flows for when the facility is operating a ultimate processing capacity of 250,000tonnes per annum.

Time Period	Works Vehicle Assessment Trip Generation – Stage 1					
	Rigid Body		Articulated		Private Cars	
	In	Out	In	Out	In	Out
Morning 07:30-08:30hrs	4	4	1	1	5	5
Off Peak Times	3	3	1	1	2	2
Evening 17:00-18:00hrs	4	4	1	1	5	5

Table 4.10 Morning and Evening Assessment Traffic Flows – Stage 1

Time Period	Works Vehicle Assessment Trip Generation – Stages 2 & 3							
	Rigid Body		Refuse Veh		Articulated		Private Cars	
	In	Out	In	Out	In	Out	In	Out
Morning 07:30-08:30hrs	11	11	9	9	7	7	5	5
Off Peak Times	6	6	5	5	4	4	2	2
Evening 17:00-18:00hrs	11	11	9	9	7	7	5	5

Table 4.11 Morning and Evening Assessment Traffic Flows - Ultimate Capacity

4.2.45 The robust assessment traffic flows assumed for the peak hours of Stage 1 above, show that in total some 10 vehicle movements are expected inbound and outbound at the proposed site access. In the subsequent stages of the project, assuming the site realises its full operational potential, the equivalent assessment traffic flows show some 32 vehicle movements inbound and outbound.

4.2.46 It should be noted that these 'assessment' traffic flows are considered robust and should not be viewed as 'typical' flows expected at the facility. As discussed earlier, robust assessment traffic flows are used so as to provide the Local Authority with an appraisal of the proposed development under extreme operational conditions or under a 'worst case scenario'.

4.2.47 As can be seen form the above Tables 4.10 and 4.11 typical traffic flows during off-peak times are likely to be significantly lower with 6 trips per hour expected in Stage 1 and 17 trips per hour when operating a full capacity and receiving 250,000 tonnes of material per annum.

Construction Related Traffic Attraction

4.2.48 It is proposed that the development would be implemented in distinct phases. It is expected that a significant proportion of overall development should be completed before Stage I or at mid to late 2006 in order to facilitate Stage 1 operations. It is proposed that practically all infrastructure and ancillary buildings etc. would be constructed before Stage 1 becomes operational.

4.2.49 Clearly the construction phases of the project will generate traffic on the local road network. We consider that the primary generators of traffic will be deliveries of construction materials and construction staff.

4.2.50 In the assessment of traffic attraction to the development we have made the following assumptions, based on the experience of the consultants involved in the preparation of the Planning Application. General workforce for construction is expected to constitute approximately 30 staff which it is assumed would constitute 25 vehicles into the development in the morning and 25 vehicles out in the evening, whilst delivery of materials has been assumed to account for no more than 10 vehicles throughout the day.

4.2.51 In terms of the importation of construction materials for the facility it is expected that the site will have a high degree of self-sufficiency in this respect. We have been advised that site preparation works are likely to be minimal. It is assumed that earth/materials would be moved about the site in large site vehicles therefore, save for the transportation of these vehicles to the site at the beginning of each of the phased construction period, there is likely to be no traffic generation as a result of these operations.

4.2.52 Given below in Table 4.12 is a summary of the assumed arrival/departure patterns associated with the construction related traffic. Figures are provided for total daily traffic movements and the assumed likely distribution of traffic throughout the day.

Time Period	Construction Traffic		IN	OUT	Comment
	Staff	Deliveries			
0700-0800	25 All Staff	2	27	2	Construction start at 0800hrs
0800-0900	2	2	4	4	
0900-1000	1	1	2	2	
1000-1100	0	1	1	1	
1100-1200	1	1	2	2	
1200-1300	0	0	0	0	
1300-1400	5	0	5	5	Lunch Hour
1400-1500	0	1	1	1	
1500-1600	1	1	2	2	
1600-1700	0	1	1	1	
1700-1800	0	0	0	0	
1800-1900	25 All Staff	0	0	25	Construction finish 1800
TOTALS	**60 veh**	**10**	**45**	**45**	

Table 4.12 Estimate of Construction Related Traffic Generation

4.2.53 In the above Table 4.12 we have assumed that all construction staff would arrive prior to 0800hrs in the morning and would depart after 1800hrs in the evening, this is based on the hours of construction between 0800-1800hrs.

4.2.54 It is assumed that a nominal number of trips would be undertaken by staff throughout the day, these trips are assumed to be associated with the likes of trips to hardware stores for sundry equipment and trips to purchase lunch etc. In terms of the deliveries of construction related materials we have assumed a concentration in the morning with a decrease in the number of deliveries later in the day.

4.2.55 Comparing the figures of Table 4.12 above with the assessment traffic generation of Stage 1 shown in Table 4.6, it can be appreciated that the traffic generated during the construction period is likely to be relatively similar in volume and make-up to the works generation of Stage 1.

4.2.56 Given such similarity it is not intended to provide a separate assessment of traffic impact during the construction period since the results of the assessments for Stage 1 are likely to provide a reasonable estimate of any such impacts.

4.3 Threshold Approach and Need for Traffic Impact Assessment

General

4.3.1 You will recall the threshold approach of the Institution of Highways & Transportation outlined in 2.4.1 above. In the following we will determine the need for a detailed assessment (computer modelling analysis of road link and junction performance) of traffic impact arising from the proposed development.

4.3.2 The total existing two-way peak hour traffic flows on the Cappagh Road or adjoining roads network has been shown in the traffic surveys to be 641 movements in the morning; 604 of which are cars and light vans and 37 HGV. Of these vehicles 121 cars and 16 HGV travelled northbound whilst 483 cars and 21 HGV travelled southbound.

4.3.3 The peak hour accumulative two-way traffic flow on the Cappagh Road in the evening shows 968 movements, 941 of which are cars and light vans and 27 HGV. 756 cars and 22 HGV travelled northbound whilst 185 cars and 5 HGV travelled southbound.

Forecast Peak Hour Percentage Traffic Increase - Proposed Development

4.3.4 The total peak hour 'assessment' traffic generation of the proposed development is estimated to be 10 vehicles in Stage 1 and 32 vehicles when operating at full capacity.

4.3.5 Clearly the Stage 1 traffic flows are considerably less than the 10% threshold recommended by the Institution of Highways and Transportation for both the morning and evening peak hours.

4.3.6 The increase in traffic on the Cappagh Road during Stage 1 is estimated to be between **1.5% and 3.1%** in the morning and **1.0% and 2.1%.** The lower percentages are based upon a 50/50 directional split of development traffic at the site access, the greater figure assumes all traffic arrives and departs by one direction.

4.3.7 During Stages 2 and 3, when operating at ultimate capacity the likely percentage increases in peak hour traffic under the robust assessment forecast generation is in the order of **4.9% and 9.9%** in the morning and **3.4% and 6.8%** in the evening.

Forecast Peak Hour Percentage Traffic Increase - Permitted Development

4.3.8 The current permitted Industrial Estate type development (which the Applicant could reasonably implement if so desired) is shown as likely to generate an assessment traffic flow of 126 inbound and 37 outbound movements in the morning peak hour and 39 inbound and 145 outbound movements in the evening peak hour.

4.3.9 The forecast increase in traffic on the Cappagh Road due to the permitted development is likely to be in the order of **12.5% to 25%** in the morning peak and **9.7% to 19.5%** in the evening peak hour period.

4.3.10 Notwithstanding the fact that the percentage HGV content of the waste related traffic streams is likely to be greater for the proposed facility than for the industrial estate, the increase in vehicle numbers due to the possible implementation of the permitted development is likely to be between two to four times that of the proposed waste facility.

Forecast Traffic Impact of Proposed Development

4.3.11 It is expected that the Local Authority, would in granting the current planning permission, have been satisfied that the emerging roads network has the capacity to cater for the expected traffic generation of the 'permitted' industrial development.

4.3.12 Assuming the site were a greenfield development the forecast percentage increase in traffic on the adjoining highway (Cappagh Road) as a result of the proposed waste facility development would be lower than the thresholds normally applied under the recommendations of the Institution of Highways and Transportation.

4.3.13 Nonetheless, the site is not strictly greenfield as it currently enjoys a full planning permission, in which regard it has been shown above that the proposed development is likely to generate between ½ and ¼ of the likely traffic forecast at the permitted industrial development.

4.3.14 On balance, the implementation of the proposed development would bring about a reduction in the potential volume of traffic on the adjoining roads network. It follows that the traffic impact of the proposed development is likely to be 'positive' and accordingly detailed capacity assessments are considered unnecessary.

4.4 Proposed Development Access

Current Permitted Development - Conditions Regarding Future Access

4.4.1 In respect to the provision of future access to the site, the conditions appended the current permission outline the approach desired by the Trnasporation Department of the Local Authority. Condition 7 of the permission relates (Reg. Ref. F04A/1123). In the interest of clarity the relevant sections of the condition are transcribed below.

> *Condition 7*
>
> *"The following requirements of the Transportation Dept. shall be strictly adhered to:*
>
> *a) Revised details of connection to the future realigned Cappagh Road shall only be made subject to the prior written approval of the Transportation Department,*
>
> *b) Details of any future entrance to the Cappagh Road shall be submitted for the written agreement of the Transportation Department prior to the commencement of any works on the entrance,*

c) *Prior to the connection of the Development to the future realigned Cappagh Road the internal/parking/traffic layout shall be revised to accommodate the connection. A through road to the Stadum Business Park shall not be permitted.*

d) *Revised footway details shall be submitted to the Transportation Department for written agreement, prior to the commencement of development,*

e) *Prior to the occupation of any units within the development, the realigned Ballycoolin Road from the existing roundabout at the entrance to Stadium Business Park to the roundabout north of the M50 shall be designed in accordance with submitted drawing 03/003/011 by Clifton Scannell Emerson Associates and be completed and open to traffic.*

Future Connection to the Cappagh Road Realignment

4.4.2 From the current conditions of planning for the permitted development, it can be appreciated that the Local Authority has in principle made provision for direct access to the site form the Cappagh Road realignment.

4.4.3 Given the likely future capacity of the upgraded road, together with lower traffic generation of the proposed development over that currently permitted, clearly the proposed site would be satisfactorily served by a similar arrangement to the current permitted development.

4.4.4 Under the current terms of the permitted development, the design of a future connection to the realigned Cappacgh Road will be prepared for agreement with the Local Authority.

4.4.5 From a review of the current application drawings together with the future preliminary alignment of the Cappagh Road, it is expected that only minor revision works will be required to connect the proposed access to the realigned road which it is proposed will run across the site frontage.

4.4.6 The forecast likely traffic generation of Stage 1 is shown to be 38 vehicle trips per day. During construction of Stage 1 the forecast traffic flows are similar with 45 vehicle trips generated. The total two-way traffic flow on the Cappagh Road over the course of the 12 hour surveys was 5,215 vehicles.

4.4.7 From these 'assessment' figures it can be seen that the traffic associated with the construction and operation of Stage 1 (38 -45 daily trips) is likely to equate to an approximate 1.5% increase in daily traffic volumes on the Cappagh Road between the hours of 07:00-19:00hrs. Clearly if based upon Annual Average Daily Traffic Volumes (24hr) this percentage would be even lower.

4.4.8 The increase in traffic associated with construction and operation of Stage 1 are considerably less than the typical daily fluctuation of ±10% expected on the general roads network and accordingly should be considered negligible in terms of traffic impact. Indeed the impact of this Stage 1 traffic is likely to be imperceptible to existing users of the Cappagh Road, save for directly at the proposed access to the site.

4.4.9 Although each case must be adjudged on its own unique merits, you will recall the advice of the Institution of Highways and Transportation which advises that impact is not generally considered significant if increases in traffic on the adjoining highway are less than 10%.

4.4.10 It follows form the above that the likely increase in traffic on the Cappagh Road as a direct result of the construction and operation of Stage 1 of the proposed development will be wholly insignificant in terms impact on the operation of the surrounding roads network.

4.4.11 Should the Cappagh Road realignment not be realised before 2007, given the very modest levels of traffic associated with the construction and operation of the proposed Stage 1 it is considered reasonable that the facility could be constructed and Stage 1 put into operation using an upgrade of the existing direct vehicular site access to the Cappagh Road as show on the application drawings.

4.4.12 It is proposed that an interim or temporary access to the proposed development will be implemented, and will provide direct vehicle access from the existing Cappagh Road. Clearly there is a reasonable likelihood that this access may never need to be used, should the Local Authority implement the Cappagh Road realignment before development commences.

4.5 Layout of Proposed Site Access to Existing Cappagh Road

4.5.1 The speed limit along the Cappagh Road in the vicinity of the proposed facility is not very clear, however it is assumed from signs on the Ballycoolin Road that the current speed limit is 80kph. From observation of vehicular speeds past the site it is expected that the existing 'Design Speed' on the Cappagh Road is likely to be lower if measured through speed surveys.

4.5.2 From a review of the emerging improved roads network it is expected that the single lane Cappagh Road realignment will be subject to a 60kph speed limit, as is the wide single carriageway of the Cruiserath Road. This lower limit is considered more appropriate in a built-up industrial are where traffic flows and turning movements are expected to be relatively high and junctions and access points frequent.

4.5.3 Notwithstanding the above, in accordance with the NRA: Design Manual for Roads and Bridges (TD9. Table 3) the required visibility 'y' distance corresponding to a design speed of 85kph is 160m (equal to the Stopping Sight Distance).

4.5.4 CPM Drawings No. V083_003/B, V083_002/A shows the visibility criteria achievable at the proposed upgraded existing entrance. The sightlines shown on the drawings have been measured in accordance with the NRA: Design Manual for Roads and Bridges TD42 Figures 7/1 and 7/2 as appropriate. The sightlines are depicted for the upgraded access entering onto the existing Cappagh Road carriageway only and clearly show that the NRA:Design Manual for Roads and Bridges prescribed distances are achievable.

4.5.5 It can be seen from the drawings that the proposed development access is satisfactory and will, upon completion of the proposed development and associated road works, be strictly in accordance with the current requirements of the NRA: Design Manual for Roads and Bridges albeit that the existing Cappagh Road is not compliant with such National Primary Roads design standards.

4.5.6 Upon completion of the Cappagh Road Realignment the set-back of development boundaries is such (measured as 6.5m) that satisfactory visibility sightlines in both directions will be easily achieved.

4.6 Distribution of Development Traffic

Stage 1 – Development Traffic Distribution

4.6.1 In terms of the distribution of development traffic on the local roads network, it is established practice and recommended by the Institution of Highways & Transportation that, in the absence of other more reliable information, development traffic can be assumed to distribute to the local roads network in the proportions yielded in the survey of existing traffic.

4.6.2 Notwithstanding the above, given the current roads layout it is expected that all traffic in Stage 1 will arrive and depart via. the existing Kilshane Road Roundabout. Until such time as the Cappagh Road Realignment is realised. and in the interest of limiting the use of the existing Cappagh Road insofar as practicable, the Applicant is not averse to a condition in respect of limiting access to the northern end of the Cappagh Road for the construction and operation of Stage 1.

Stages 2 & 3 – Development Traffic Distribution

4.6.3 It is acknowledged that the traffic associated with the development operating at ultimate capacity of 250,000 tonnes is in the region of the 5% to 10% which is approaching the threshold of the Institution of Highways and Transportation. Given the current alignment of the receiving roads environment it is not considered reasonable to expect the 'full' development to be serviceable from the existing Cappagh Road.

4.6.4 Notwithstanding the above, construction of the various additional buildings provided under Stages 2 & 3 is not likely to have any appreciable impact on the operation of the receiving roads environment, nonetheless it is recommended that Stages 2 & 3 should not be put into operation prior to the Cappagh Road Realignment. Clearly such a decision is at the discretion of the Local Authority and it may well be that some fraction of Stage 2 & 3, subject to restrictions in the overall number of vehicle movements, may reasonably be permitted to operate prior to the completion of the Cappagh Road Realignment.

4.6.5 For the purposes of this assessment, after the construction of the Cappagh Road Realignment, site traffic will be afforded practically equal opportunity to enter the site from either side of the proposed access, accordingly it is assumed for Stages 2 & 3 that traffic to and from the site will distribute to the network with half entering and leaving by either direction (i.e. 50/50 split at entrance).

Permitted Development – Development Traffic Distribution

4.6.6 In the interest of a comparative assessment we also examine the likely traffic impact of the permitted Industrial Estate development.

4.6.7 In terms of the distribution of development traffic on the local roads network, given that the development is of a similar nature to the surrounding employment opportunities this potential development traffic is assumed to distribute to the local roads network in the proportions yielded in the survey of existing traffic (as recommended by the Institution of Highways and Transportation).

5 ASSESSMENT YEAR(S) AND FUTURE TRAFFIC FLOWS

5.1 Development Traffic

5.1.1 The levels of traffic generation and distribution assumed at the proposed development site are outlined above. The figures presented for the various stages, represent those stages as operating at full capacity. It is expected nonetheless that it will take some time for business to develop and thus for such tonnages to be realised at the site.

5.1.2 Considering that the development site will receive a finite or capped amount of material every year during the lifetime of the facility it is assumed that the waste facility will have a relatively finite or consistent level of traffic attraction over its life span.

5.1.3 We do not consider that the levels of traffic to and from the development site assumed in this report will fluctuate appreciably and therefore we do not consider that the forecast levels of traffic at the site could reasonably be expected to experience significant growth in relation to time.

5.2 Estimation of Network Traffic Growth

5.2.1 In the National Roads Authority publication 'National Roads Needs Study' it is assumed that traffic growth rates on the national roads system between the years 1995 and 2020 can be reasonably represented by a uniform annual traffic growth rate of 3.5%.

5.2.2 Traffic growth on the Primary Road Network, in general terms, results from development associated with economic growth. Traffic from new developments filters into the Primary Road Network system via the regional and distributor road network, resulting in traffic growth on the primary roads.

5.2.3 The road network in the vicinity of the proposed site is made up principally of distributor routes, which under normal circumstances would usually experience a lower growth rate than the National Primary Road Network.

5.2.4 The Ballycoolin Industrial Estate is however continuously developing and it is considered appropriate in the interest of a reasonable assessment that a higher value of network growth on the Cappagh Road should be used. For the purposes of this assessment therefore we have assumed that traffic volumes in the vicinity of the proposed development will experience a level of growth in the region of 6.0% per annum.

5.2.5 It must be appreciated that in our analysis of the roads network we have applied the above traffic growth rate directly to the peak hour period. However these growth rates are not always applicable to the peak hour period and it is generally accepted by traffic engineers that the peak hour, instead of increasing or intensifying as a peak, tends to spread over a longer period. Furthermore, the traffic generate by the proposed facility could be considered to contribute to the overall growth rate on the network, nonetheless we have simply added the development generated traffic to the factored network figures, thus compounding the total percentage growth on the network.

5.2.6 From the above, we consider that the assessment of future traffic growth on the local roads network in the vicinity of the proposed development will yield a realistic basis for a 'comparative' assessment of the traffic situation likely to prevail in future years before and after implementation of the proposed development.

5.3 Assessment Scenarios

5.3.1 The proposed development is likely to generate considerably less traffic than the permitted development during the peak hours, and indeed over the course of a full day. It follows that it should not be absolutely necessary for the Applicant to examine in detail the likely impact of the proposed development.

5.3.2 Nevertheless, in the following we provide an assessment of the impact of site generated traffic on the operation of the local roads network and specifically on the operation of both the Ballycoolin Road Roundabout and Kilshane Road Roundabout.

5.3.3 It should be noted that the assessments are provided for information and in the interest of a comprehensive and transparent assessment of the likely influences of the proposed and permitted developments.

5.3.4 For the purposes of providing comparative assessments of the traffic situation on the roads network in the vicinity of the proposed development we have chosen a series of assessment scenarios as follows:

Scenario 1 - Opening Year 2006 – Do Nothing (No Development at Site)

Scenario 2 - Opening Year 2006 – Permitted Development Implemented

Scenario 3 - Opening Year 2006 – Stage 1 Fully Operational

Scenario 4 - Future Year 2007 – Do Nothing (No Development at Site)

Scenario 5 - Future Year 2007 – Permitted Development Implemented

Scenario 6 - Future Year 2007 – Stages 1, 2 & 3 Fully Operational

5.4 Future Year Network Traffic Flows

5.4.1 The emerging general roads network in the Ballycoolin Area has been designed to cater for the likely future needs of the surrounding Industrial type developments. Accordingly it is not expected that the impact of the traffic generated by the proposed development would have an appreciable influence or impact on the operation of the local road network beyond the immediate environs of the development site.

5.4.2 As a result the scope of future year assessments covers the operation of the Cappagh Road and the junctions located at the intersection of the Cappagah Road and the Kilshane and Ballycoolin Roads.

5.4.3 As discussed in Section 4.5 above, the levels of traffic generated at the proposed development site have been calculated for the assessment years and assigned to the proposed development based on an approximation that 50% of traffic will approach the site form the Ballycoolin Road Roundabout and an equal proportion would approach from the Kilshane Road Roundabout.

5.4.4 In the assessment of Stage 1 operation nonetheless, all traffic is assumed to arrive and depart from the Kilshane Road Roundabout.

5.4.5 Given the similarity between the traffic which would be generated by the permitted development and general Ballycollin traffic, this future potential traffic is distributed in the proportions currently manifest for both cars and HGV on the Cappagh Road, as determined in the traffic surveys. In general there is a directional split in the morning with 80% of traffic travelling southbound on the Cappagh Road, this scenario is reversed in the evening peak hour.

5.4.6 The traffic flows used in the network assessments are provided in the following Tables 5.1 through 5.4. Base network traffic flows are shown in the tables together with the forecast traffic generated by the various developments or stages thereof. The resulting Scenario traffic flows are also presented.

5.4.7 The movement (MVT) numbers used in the tables correspond to those used in the traffic surveys for the respective junctions. The traffic surveys, including movement diagrams, are provided in Appendix A.

5.4.8 The 'Do Nothing Scenario' is a scenario in which no distinct allowance is made for any specific planned or permitted developments; essentially the present scenario.

Movement	MVT 1			MVT 2			MVT 3			MVT 4			MVT 5			MVT 6		
Traffic Flow Scenario	Car	HGV	Total	Car	HGV	Total	Car	HGV	Total	Car	HGV	Total	Car	HGV	Total	Car	HGV	Total
2005	106	66	172	480	16	496	114	11	125	7	5	12	3	5	8	8	15	23
Base 2006	112	70	182	509	17	526	121	12	133	7	5	13	3	5	8	8	16	24
Base 2007	119	74	193	539	18	557	128	12	140	8	6	13	3	6	9	9	17	26
Stage 1 Traffic	0	0	0	5	4	9	5	3	8	0	2	2	0	1	1	0	0	0
Stage 1,2 & 3 Traffic	0	0	0	2	10	13	2	9	12	0	4	4	0	3	3	0	0	0
Permitted Dev. Traffic	0	0	0	102	20	122	5	1	6	0	0	1	1	6	7	0	0	0
Scenario 1	112	70	182	509	17	526	121	12	133	7	5	13	3	5	8	8	16	24
Scenario 2	112	70	182	611	37	648	126	12	138	8	6	13	4	12	15	8	16	24
Scenario 3	112	70	182	514	21	535	126	15	141	8	7	15	3	6	10	8	16	24
Scenario 4	119	74	193	539	18	557	128	12	140	8	6	13	3	6	9	9	17	26
Scenario 5	119	74	193	641	38	679	133	13	146	8	6	14	4	12	16	9	17	26
Scenario 6	119	74	193	542	28	570	130	22	152	8	10	18	3	9	12	9	17	26

Table 5.1 Forecast Traffic Flow Scenarios – Kilshane Road RDBT – AM Peak Hour

Movement	MVT 1			MVT 2			MVT 3			MVT 4			MVT 5			MVT 6		
Traffic Flow Scenario	Car	HGV	Total	Car	HGV	Total	Car	HGV	Total	Car	HGV	Total	Car	HGV	Total	Car	HGV	Total
2005	137	19	156	181	5	186	734	21	755	22	1	23	4	0	4	32	0	32
Base 2006	145	20	165	192	5	197	778	22	800	23	1	24	4	0	4	34	0	34
Base 2007	154	21	175	203	6	209	825	24	848	25	1	26	4	0	4	36	0	36
Stage 1 Traffic	0	0	0	5	5	10	5	5	10	0	0	0	0	0	0	0	0	0
Stage 1,2 & 3 Traffic	0	0	0	2	14	16	2	13	15	0	1	1	0	0	0	0	0	0
Permitted Dev. Traffic	0	0	0	16	4	20	18	4	23	1	0	1	0	0	0	0	0	0
Scenario 1	145	20	165	192	5	197	778	22	800	23	1	24	4	0	4	34	0	34
Scenario 2	145	20	165	208	9	218	796	27	823	24	1	25	5	0	5	34	0	34
Scenario 3	145	20	165	197	10	207	783	27	810	23	1	25	4	0	4	34	0	34
Scenario 4	154	21	175	203	6	209	825	24	848	25	1	26	4	0	4	36	0	36
Scenario 5	154	21	175	220	10	229	843	28	871	25	1	27	5	0	5	36	0	36
Scenario 6	154	21	175	206	19	225	827	36	864	25	2	27	5	0	5	36	0	36

Table 5.2 Forecast Traffic Flow Scenarios – Kilshane Road RDBT – PM Peak Hour

Movement	MVT 1			MVT 2			MVT 3			MVT 4			MVT 5			MVT 6		
Traffic Flow Scenario	Car	HGV	Total	Car	HGV	Total	Car	HGV	Total	Car	HGV	Total	Car	HGV	Total	Car	HGV	Total
2005	445	12	457	14	9	23	6	8	14	552	38	590	444	28	472	113	8	121
Base 2006	472	13	484	15	10	24	6	8	15	585	40	625	471	30	500	120	8	128
Base 2007	500	13	513	16	10	26	7	9	16	620	43	663	499	31	530	127	9	136
Stage 1 Traffic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Stage 1,2 & 3 Traffic	2	8	10	0	6	6	0	7	7	0	0	0	0	0	0	2	7	9
Permitted Dev. Traffic	20	3	23	1	2	3	1	3	5	0	0	0	0	0	0	24	3	28
Scenario 1	472	13	484	15	10	24	6	8	15	585	40	625	471	30	500	120	8	128
Scenario 2	492	15	507	15	12	27	8	12	19	585	40	625	471	30	500	144	12	156
Scenario 3	472	13	484	15	10	24	6	8	15	585	40	625	471	30	500	120	8	128
Scenario 4	500	13	513	16	10	26	7	9	16	620	43	663	499	31	530	127	9	136
Scenario 5	520	16	536	16	12	29	8	12	20	620	43	663	499	31	530	151	12	164
Scenario 6	502	21	524	16	16	32	7	16	23	620	43	663	499	31	530	129	16	145

Table 5.3 Forecast Traffic Flow Scenarios – Ballycoolin Road RDBT – AM Peak Hour

Movement	MVT 1			MVT 2			MVT 3			MVT 4			MVT 5			MVT 6		
Traffic Flow Scenario	Car	HGV	Total	Car	HGV	Total	Car	HGV	Total	Car	HGV	Total	Car	HGV	Total	Car	HGV	Total
2005	195	4	199	5	1	6	16	0	16	549	21	570	253	18	271	704	22	726
Base 2006	207	4	211	5	1	6	17	0	17	582	22	604	268	19	287	746	23	770
Base 2007	219	4	224	6	1	7	18	0	18	617	24	640	284	20	304	791	25	816
Stage 1 Traffic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Stage 1,2 & 3 Traffic	2	11	13	0	3	3	0	0	0	0	0	0	0	0	0	2	14	16
Permitted Dev. Traffic	74	15	89	2	4	6	0	0	0	0	0	0	0	0	0	4	1	5
Scenario 1	207	4	211	5	1	6	17	0	17	582	22	604	268	19	287	746	23	770
Scenario 2	281	19	300	7	5	12	17	0	17	582	22	604	268	19	287	750	24	775
Scenario 3	207	4	211	5	1	6	17	0	17	582	22	604	268	19	287	746	23	770
Scenario 4	219	4	224	6	1	7	18	0	18	617	24	640	284	20	304	791	25	816
Scenario 5	293	19	312	8	5	12	18	0	18	617	24	640	284	20	304	795	26	821
Scenario 6	222	15	237	6	4	10	18	0	18	617	24	640	284	20	304	793	38	832

Table 5.4 Forecast Traffic Flow Scenarios – Ballycoolin Road RDBT – PM Peak Hour

5.4.9 From Tables 5.1 to 5.4 above, the peak hour traffic generation of the permitted development is show as likely to have the potential to generate approximately 193 vehicles in the morning peak and 144 in the evening, 20% of which have been assumed for the purposes of this report to be HGV.

5.4.10 In comparison to the above permitted development, in Stage 1 of the proposed waste facility development is forecast to generate a total two-way traffic flow of some 10 vehicles in the peak hours and 6 in off-peak hours.

5.4.11 When operating at ultimate capacity of 250,000 the total two-way traffic generation of the proposed development is forecast for the purposes of assessment to be 32 vehicles in the peak hour periods and 17 during off-peak hours.

5.4.12 Notwithstanding the composition of the various traffic streams compared above, we believe it is clear that the likely traffic impact of the proposed waste facility will be significantly less than that of the current permitted development. This is especially so when it is considered that such waste treatment facilities typically generate a minimal number of traffic movements after approximately 16:00hrs. We have presumed for the purposes of assessment that the site would generate some 15% of daily traffic between 17:00-18:00hrs, which is unlikely.

5.5 Forecast Impact on Road Network

Cappagh Road Realignment

5.5.1 As discussed earlier, the above Tables 5.1 through 5.4 are provided in the interest of a comparative assessment only. Given the current and continuing changes in the emerging roads environment in the locality of the site, and the changing planning environment it is not expected that any detailed assessments will reflect precisely the future traffic flows to all planned and permitted developments.

5.5.2 Such an assessment would require a significant area-wide network model and an insight onto the future potential development of all lands in the vicinity of the proposed development. This type of in-depth analysis is normally reserved for master-planning by the Local Authority in the strategic planning and design of future roads improvements to cater for forecast demand.

5.5.3 The preparation of such a model is considered beyond the remit of a Traffic Impact Assessment for the proposed development, especially in light of the fact that permission has already been granted on the site for a more traffic intensive development.

5.5.4 As discussed earlier, the site currently enjoys full planning permission for an Industrial Estate type development. It has been shown in this report that the permitted development would most likely generate greater daily increases in traffic flows on the local roads network than the proposed waste facility; almost quadruple. Given the employment characteristics of the permitted development, it is considered highly likely that traffic generation during the peak hours under the permitted development would be significantly greater than that of the proposed waste facility.

5.5.5 Under the current application and taking into consideration the different composition of the traffic streams generated by the proposed and permitted developments, we consider that it is highly likely that the proposed development, when operating at ultimate capacity will have significantly less of an impact on the operation of the receiving roads environment than the current permitted development.

5.5.6 It is not unreasonable to presume that in the design of the emerging roads network, the Local Authority has accounted for the land-use zoning and potential traffic demands of the general area and that the new roads system, including the Cappagh Road Realignment, has been designed to cater for such likely future demand.

5.5.7 Given the grant of permission for the Industrial type development at the site, it is reasonable to assume that the Local Authority would have allowed for the traffic generated by that site in the design of the Cappagh Road.

5.5.8 It follows that the lesser traffic volumes generated by the proposed waste facility would equally be accommodated on the new realigned Cappagh Road. Accordingly, given the likely inaccuracies of a detailed assessment it is not proposed that the future traffic scenarios will be examined using capacity assessment models such as ARCADY or PICADY.

5.5.9 We believe it to be clear form the figures prepared in Tables 5.1 to 5.4, that traffic impact arising from the development will not be significant.

Existing Cappagh Road

5.5.10 It is not expected that the proposed Stages 2 and 3 of the waste treatment facility could be adequately served from the existing Cappagh Road. In discussions with the Local Authority some site preparation works, mainly involving earth moving have been permitted to occur under the current roads regime.

5.5.11 From discussions with the Local Authority consultants Clifton Scannell Emerson Associates that it is likely that construction may commence on the Cappagh Road Realignment sometime in mid 2006 or perhaps earlier. As we understand, the Local Authority is currently in the process of appointing consultants for the detailed design work which we assume will start soon.

5.5.12 Under the conditions of the current permission at the site, it is understood that construction of the development would be facilitated at the site prior to the opening of the Cappagh Road, indeed in the interest of limiting construction impacts it is considered rational that the development of the site could at least run along in parallel with the construction works on the Cappagh Road Realignment.

5.5.13 As can be seen from the calculations provided in this report, the traffic associated with construction is practically inconsequential to the capacity and operation of the existing road network. By the same rationale, the traffic generated by Stage 1 of the development is also considered insignificant. You will recall that the operations of Stage 1 have been forecast as likely to increase traffic flows on the Cappagh Road by as little as 1% which would essentially be imperceptible to existing road users both on the Cappagh Road and the surrounding receiving roads environment.

5.5.14 As can be appreciated the current forecast increase in traffic for Stage 1, as reported herein assumes that 50,000 tonnes of material would be handled at the facility upon opening. Clearly in practice this will not be the case, and tonnages in the early months are likely to be lower. It follows that impact on the existing Cappagh Road in the interim before the new realignment is opened are likely to be even less than the above figure of 1%.

5.5.15 Given the above. It is the aspiration of the Applicant, that construction work can be carried out and Stage 1 of the development put into operation prior to the completion of the Cappagh Road Realignment works.

6 CONCLUSION

6.1.1 The existing site enjoys full planning permission for an Industrial Estate type development.

6.1.2 It has been shown in this report that the permitted development would most likely generate greater daily increases in traffic flows on the local roads network than the proposed waste treatment facility. Indeed the permitted development is estimated as likely to generate almost four times as much traffic on a daily basis, but more significantly, as much as seven times as much traffic in the critical commuter peak hours on the roads network.

6.1.3 Given the employment characteristics of the permitted development, it is considered highly likely that traffic generation during the peak hours under the permitted development would be significantly greater than that of the proposed waste facility. Under the current application essentially more than 150 cars to or from the permitted Industrial development in the mornings and evening peak hours would be replaced by 5 cars, 4 skip lorries and 1 articulated vehicle in Stage 1, and 5 cars, 20 skip/refuse lorries and 7 articulated vehicles in Stages 2 and 3.

6.1.4 It follows therefore that it is highly likely that the proposed development, when operating at ultimate capacity will have significantly less of an impact on the operation of the receiving roads environment than the current permitted development.

6.1.5 Given the Local Authority grant of permission at the site it is not unreasonable to presume that the emerging roads network has been designed to cater for considerably more traffic that is likely to be generated by the proposed waste treatment facility.

6.1.6 Traffic generation rates associated with the construction and operation of Stage 1 of the waste treatment facility have been shown to be very low indeed. Such traffic is not thought likely to have any appreciable or indeed perceptible impact on the operation of the existing Cappagh Road. Accordingly it is expected that Stage 1 could reasonably be constructed and operable prior to the completion of the Cappagh Road Realignment.

Appendix 4 Fingal Transportation Department

Fingal County Council Comhairle Contae Fhine Gall

Mr Peter Fagan
Clifton Scannell Emerson Associates
Seafort Lodge
Castledawson Avenue
Blackrock
CO DUBLIN

20 March 2007

RE: Development of a Materials Recycling Facility at Cappagh Road (Planning Reference F05A/1156)

Dear Peter,

I refer to the above Planning Permission and specifically the condition restricting the permitted development to 50,000 tons (Phase 1) only. This restriction arose from a number of considerations as follows:-

1. The nature of the traffic generated by this development, primarily HGV, and the relatively high increase over existing traffic levels on the Cappagh Road for the full build-out of the development (250,000 tns per annum). This increase was estimated in the EIS at between 3.4% and 9.9% for the morning and PM peaks on the Cappagh Road.
2. The expectation stated in the EIS that traffic will access the site predominantly via the Kilshane Road.
3. Visibility from the development site entrance (in the absence of the Cappagh Road Upgrade Scheme) is marginally below standard notwithstanding a relaxation within standard on the set-back distance from 4.5m to 2.4m.

The Transportation Department concluded that the current structural deficiencies in both the existing Cappagh Road and Kilshane Road were such that they were not capable of sustaining the additional level of HGV traffic from the full development build-out.

In relation to Item 3 above the Transportation Department was also concerned that, if for some unforeseen reason the upgrade of the Cappagh Road was delayed, the volume of HGV traffic using an entrance with reduced-standard visibility would be unacceptably high.

Transportation Department
Postal Address
P.O. Box 174,
County Hall,
Swords,
Fingal,
Co. Dublin

An Roinn Iompair
Bosca 174,
Áras an Chontae,
Sord,
Fine Gall,
Contae Á. tha Cliath

Office Address
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Telephone
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01 890 5847
Facsimile
01 890 6711
Email
Transportation.Planning@fingalcoco.ie
www.fingalcoco.ie

Since this application was submitted significant progress has been made on the planned road improvements in the vicinity of the site. I am advised by our Roads Design Section that the commencement of the Cappagh/Ballycoolin Road Improvement scheme is imminent and that the design/planning of the N2-N3 link is also progressing well.

Regarding further development at this particular application site, it is the view of the Transportation Planning Section that, when the Cappagh/Ballycoolin Improvement Scheme is implemented and further progress is made on the N2-N3 road link, there would be no compelling reason not to permit the latter phases (2 & 3) of this development to proceed subject to normal planning conditions.

These comments are provided in accordance with Section 247 of the Planning & Development Act 2000.

Yours Faithfully,

Dominic Moloney
Executive Engineer

Appendix 5 Site Investigation

cpm engineering
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East Wall Road
Dublin 3
Tel 01 874 5411 Fax 01 835 5779

Project				Job Ref.	
Panda Waste - Lands at Cappoge Road				V083	
Section				Sheet no./rev.	
Site Investigation				1	
Calc. by	Date	Chck'd by	Date	App'd by	Date
JMcE	22/07/05				

Report on Site Investigation

Introduction

A trial pit investigation was carried out to establish subsoil conditions at Cappagh Road, Finglas on 15th July 2005.

The days that preceded the opening of the trial holes were reasonably dry.

Trial pit locations are shown on the attached location map, No V083-E-010

Fieldwork

Trial pits were excavated using a JCB. A total of 7 No trial pits were undertaken.

A visual inspection only of the trial pits was made. The results of this inspection are recorded in the trial pit logs, which follow. No laboratory testing of the excavated materials was undertaken.

No running water was encountered in the trial pits.

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Site Investigation				2	
Calc. by	Date	Chck'd by	Date	App'd by	Date
JMcE	22/07/05				

Trial Pit No.1

Equipment & Methods: Machine (JCB) excavated trial hole	Location No.	
	Location: Lands at Cappoge Road	
Carried out for: Panda waste Ltd	Ground Level 83.1	Coordinates / Date 15/07/05

Description	Reduced Level	Depth	Thickness	Sample	Test	
Building Waste (Crushed concrete Etc.)	83.1	0.00m	0.25m			
Vegetable Soil	82.85	0.25m	0.30m			
Light Brown Boulder Clay	82.55	0.55m				
Bottom of pit	81.5	1.60m	1.05m			No water visible
Dark brown/black hard Clay with stones Difficult to excavate						

Remarks:

Notes

Logged by JMcE

SCALE: NTS

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JMcE	22/07/05				

Trial Pit No.2

Equipment & Methods: Machine (JCB) excavated trial hole	Location No.	
	Location: Lands at Cappoge Road	
Carried out for: Panda waste Ltd	Ground Level: 83.00	Coordinates / Date: 15/07/05

Description	Reduced Level	Depth	Thickness	Sample	Test	
Vegetable Soil	83.00		0.25m			
Light brown clay	82.75	0.25m				
Bottom of pit	81.7	1.30m	1.05m			No water visible
Dark brown/black hard Clay with stones Difficult to excavate						

Remarks:

Notes

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JMcE	22/07/05				

Trial Pit No.3

Equipment & Methods: Machine (JCB) excavated trial hole	Location No.	Location: Lands at Cappoge Road	
Carried out for: Panda Waste Ltd	Ground Level 82.90	Coordinates	Date 15/07/05

Description	Reduced Level	Depth	Thickness	Sample	Test	
Vegetable Soil	82.90		0.30m			
Light brown clay	82.60	0.30m	0.60m			
Brown/grey mottled silty sandy stiff Clay (boulder clay)	82.00	0.90m				
Bottom of pit	81.40	1.50m	0.60m			No water visible
Dark brown/black hard Clay with stones Difficult to excavate						

Remarks:

Notes

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JMcE	22/07/05				

Trial Pit No.4

Equipment & Methods: Machine (JCB) excavated trial hole	Location No.
	Location: Lands at Cappoge Road
Carried out for: Panda Waste Ltd	Ground Level 82.87
	Date 15/07/05

Description	Reduced Level	Depth	Thickness	Sample	Test	
Vegetable Soil	82.87		0.30m			
Light brown clay	82.57	0.30m	0.40m			
Brown/grey mottled silty sandy stiff Clay (boulder clay)	82.17	0.70m				
Bottom of pit	81.37	1.50m	0.80m			No water visible
Dark brown/black hard Clay with stones Difficult to excavate						

Remarks:

Notes

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JMcE	22/07/05				

Trial Pit No.5

Equipment & Methods: Machine (JCB) excavated trial hole	Location No. / Location: Lands at Cappoge Road
Carried out for: Panda Waste Ltd	Ground Level: 83.65 — Coordinates — Date: 15/07/05

Description	Reduced Level	Depth	Thickness	Sample	Test	
Vegetable Soil	83.65		0.30m			
Light brown clay	83.35	0.30m	0.50m			
Brown/grey mottled silty sandy stiff Clay (boulder clay)	82.85	0.80m				No water visible
Bottom of pit	82.45	1.20m	0.40m			
Dark brown/black hard Clay with stones Difficult to excavate						

Remarks:

Notes

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cpm engineering River House East Wall Road Dublin 3 Tel 01 874 5411 Fax 01 835 5779	Project: Panda Waste - Lands at Cappoge Road				Job Ref.: V083	
	Section: Site Investigation				Sheet no./rev.: 7	
	Calc. by: JMcE	Date: 22/07/05	Chck'd by:	Date:	App'd by:	Date:

Trial Pit No.6

Equipment & Methods: Machine (JCB) excavated trial hole	Location No. Location: Lands at Cappoge Road					
Carried out for: Panda Waste Ltd	Ground Level 83.10	Coordinates				Date 15/07/05
Description	Reduced Level	Depth	Thickness	Sample	Test	
Vegetable Soil	83.10		0.30m			
Light brown clay	82.80	0.30m	0.30m			
Brown/grey mottled silty sandy stiff Clay (boulder clay)	82.50	0.60m				
Bottom of pit	82.00	1.10m	0.50m			No water visible
Dark brown/black hard Clay with stones Difficult to excavate						

Remarks:	Logged by: JMcE
Notes	SCALE: NTS

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Trial Pit No.7

Equipment & Methods:	Location No.				
Machine (JCB) excavated trial hole	Location: Lands at Cappoge Road				
Carried out for:	Ground Level	Coordinates			Date
Panda waste Ltd	82.90				15/07/05

Description	Reduced Level	Depth	Thickness	Sample	Test	
Vegetable Soil	82.90		0.30m			
Light brown clay	82.60	0.30m	0.50m			
Brown/grey mottled silty sandy stiff Clay (boulder clay)	82.10	0.80m				No water visible
Bottom of pit	81.70	1.20m	0.40m			
Dark brown/black hard Clay with stones Difficult to excavate						

Remarks:

Notes

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Project				Job Ref.	
Panda Waste - Lands at Cappoge Road				V083	
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JMcE	22/07/05				