An Bord Pleanála

Inspector's Report ABP 303211-18

Development	Facility for the disposal, treatment and recovery of waste at Knockharley Landfill.
Location	Knockharley, Tuiterath, Flemington. Navan. Co Meath.
Planning Authority	Meath Co Council.
Applicant(s)	Knockharley Landfill Ltd.
Type of Application	Strategic Infrastructure (Section 37E).
Observer(s)	c. 50
Date of Site Inspection	May 7th, 2019 & 18th February 2020.
Date of Oral Hearing	December 16th, 17th & 18th 2020.
Inspector	Breda Gannon

List of Observers

1. Aled & Eileen Ingman
2. Aoife & John Geoghehan
3. Ashbourne Tidy Towns Committee
4. Balrath Woods Preservation Group
5. Carmel Mc Donnell
6. Carol & Terry Davis
7. Cathal & Alice Gogan
8. Ciara Clifford
9. Claire O' Driscoll & Others
10. Cllr Darren O'Rourke
11. Cllr Sharon Keogan
12. Dr Seamus Mc Menamin
13. Emer Gallagher Hall
14. Fergal O' Byrne
15. Fiona & Patrick Mc Cabe
16. Gary & Anita Carolan
17. Geological Survey Ireland
18. Grainne & Raymond Bowens
19. Grzegorz Chmielewski
20. Harry & Margaret Hall
21. Health Service Executive
22. Health Service Executive
23. Helen McEntee TD
24. Henry Barry
25. Hugh Coughlan (Eastern-Midlands, Southern, and Connaught -Ulster Waste Management Planning Regions
26. Irish Aviation Authority
27. James Carroll
28. John Coveney

29. Cllr Joseph Bonner
30. Kentstown and Seneschalstown Accordion Band
31. Kentstown ICA Guild
32. Kentstown Parish Maintenance Committee
33. Laurence Kinsella & Others
34. Lorraine Finegan
35. Mary Mooney
36. Mary Nugent
37. Niall Sheridan (21st Meath Scout Group)
38. Paddy Lawlor
39. Pascal Marry
40. Paul & Paula Connell
41. Paul Nolan (Kentstown Hall Committee)
42. Peadar Moynihan (Board of Management Kentstown N.S)
43. Richard Finegan
44. Steven Dillon
45. Tara & Rick Kearns and others
46. Teresa Carroll
47. Terri Bones
48. Kentstown N.S Parent Association
49. Thomas Byrne TD
50. Transport Infrastructure Ireland.

Contents

1.0 Introduction

This is an application made by Knockharley Landfill Ltd for strategic infrastructure under section 37E of the Planning and Development Act, 2000, as amended. The application is made pursuant to formal notice issued by the Board dated 14th November, 2017, where it determined under section 37B(4)(a) of the Planning and Development Act, as amended that the proposed development falls within the scope of paragraphs 37A(2) (a),(b) and (c), requiring that the application be made directly to the Board.

2.0 Site Location and Description

The site is located at Knockharley Landfill in Co. Meath. It is located 7km south of the village of Slane and 7km west of Duleek. Navan is located 10km to the west and Kentstown, the closest settlement is c 1.3 km to the south.

The site which occupies an area of 135.2 hectares accommodates an operating landfill facility where waste disposal and recovery activities are undertaken. Associated infrastructure includes landfill gas treatment compound, leachate lagoon, surface water management system, administration and maintenance buildings and other structures.

The site rises gradually northwards and westwards from approximately 50m OD at the south-east corner to almost 70m OD at the western boundary. The topography in the area is generally low-lying.

The existing landfill is positioned near the centre of the site on a north-south axis. The landfill development and waste placement is in a northerly direction. The leachate lagoon and landfill gas compound are located to the east and the surface water attenuation pond and wetland are positioned to the southeast of the landfill footprint. The administrative buildings, weighbridges and quarantine facilities are clustered close to the site entrance. Areas to the west, north and parts of the east have been planted with trees and berms have been constructed to the south. Knockharley Stream enters the site from the west and flows in an easterly direction along the northern edge of the landfill footprint, before turning south and travelling along part of the eastern boundary.

The site has a direct access route off the N2. A ghost island provides access for vehicles travelling from the north and there is an auxiliary left turn deceleration lane to facilitate access for vehicles travelling from the south. The access road runs west from the N2 and under the CR384 local road. The site access is c.100m west of the underpass.

The existing site is bound immediately to the north by the local road CR384 and agricultural land. To the west, east and south the site is also surrounded by agricultural land. Further east the CR384 runs in a north south direction. There are numerous residential properties scattered in ribbon form along the local road network.

There is an existing gas main running east-west within the site boundary and adjacent to the landfill footprint to the south. There is a 220kV ESB line running north-south adjacent to the western boundary and a 20kV line to the east with spurs to 2 no. ESB substations, one importing power to the administration building and one exporting power from the landfill gas compound.

The existing permission permits the development of approximately 25ha of landfill cells for waste disposal and recovery activities. The landfill accepts residual household, commercial and industrial wastes, together with construction/demolition wastes and incinerator bottom ash and is licensed under EPA Industrial Emissions (IE) Licence W0146-02, a copy of which is included in Appendix 1 of Volume 3 of the EIAR.

The landfill is being developed in 7 no. phases and the current authorised landfill, when fully developed, will comprise 28 landfill cells. To date Cells 1-12 have been filled and permanently capped. Landfilling is on-going in Cells 17,18,19 and 20[1].

The landfill which opened for waste acceptance in December 2004, has permission to operate up until 26th August 2021. Currently it is permitted to accept 88,000 tonnes per annum for disposal. The site layout is indicated on Drawing No LW14-821-01-P-0000-02 (Existing Site Layout).

[1] Mr David Tobin's submission to the Oral Hearing (Day 1)

3.0 **Proposed Development**

A description of the proposed development is provided in the public notices submitted and a detailed description is contained in Chapter 2 of the EIAR. The proposed development includes the following:

- The acceptance of up to 435,000 tonnes per annum of non-hazardous waste, which will include up to 150,000 tonnes per annum of incinerator bottom ash (IBA) as well as household, commercial and industrial waste including residual fines, non-hazardous contaminated soils, construction and demolition (C&D) waste and baled recyclables. It is also proposed to accept 5,000 tonnes per annum of stable non-reactive hazardous waste. Permission is sought for the acceptance of the waste until the landfill cells are full.
- The increase in height of the landfill body from the current permitted post settlement final contour height of 74 mOD to a post settlement contour height of 85 mOD. The proposed height increase will apply from the active landfill phase at the time of grant of permission.
- The construction and operation of a dedicated Incinerator Bottom Ash (IBA) facility. The facility would be located to the east of the existing landfill and to the north of the site access road. It would consist of 5 no. cells (29-33) which will be constructed in accordance with the requirements of the Landfill Directive for non-hazardous waste and have a final post settlement contour height of 85 mOD. It would also include 1 no. portal frame building (76m x 76m x 15.5m) to facilitate weathering and recovery trials and processing. Facilities for leachate storage would be provided. Permission is sought for the operation of the IBA facility until the cells are full and subsequent aftercare activities, as may be required, are complete.

  The IBA facility would accept up to 150,000 tonnes per annum and permission is sought to store the IBA until recovery outlets are identified and for trials to prepare IBA for recovery and removal off site. The development includes additional perimeter (haul) roads and screening berms.
- The construction and operation of a building for the biological treatment of the organic fraction of MSW (fines material) and for contingency storage of baled

recyclables and baled MSW. The building would have a portal frame construction (108m x 50m x 17m). It would have 12 no. concrete composting tunnels (6m x 25m x 5m) located within the building and a covered bio-filtration unit with a stack height of 20m. Leachate storage would be provided in an underground tank. A bio-treatment system would be provided for sanitary wastewater. It is proposed to accept up to 25,000 tonnes per annum of MSW fines material at the biological waste treatment facility and to continue to operate this facility post filling of the landfill cells on the site. The biological treatment facility would be located to the east of the landfill footprint and to the south of the leachate lagoons.

- The construction and operation of a leachate management facility comprising 3 no. additional floating cover leachate storage lagoons (L2, L3 and L4) of c. 3000 m2 each; 5 no. bunded above ground tanks for raw leachate from IBA cells (S1 and S2), treated leachate from the landfill (S3), treated leachate from IBA (S4) and leachate concentrate (S5); a modular plant unit, and articulated tank loading areas. Permission is sought for the continued operation of this plant post filling of the landfill cells to facilitate leachate management. The leachate management facility would be located to the east of the landfill footprint, adjacent to existing leachate lagoon.
- Construction of screening berms along the western boundary to a maximum height of 10m, on the eastern boundary to a maximum height of 10m and on the northern boundary to a maximum height of 6m, with a total berm footprint of c 11.3 ha. Haul roads for construction will be in or immediately adjacent to the berm footprint.
- Construction of surface water management infrastructure with discharge to Knockharley Stream at the northern end of the permitted landfill footprint and proposed IBA cells to include (i) holding pond for surface water run-off; (ii) storm water attenuation lagoon to maintain green field surface water discharges to Knockharley stream and to facilitate suspended solids management; (iii) wetland, (iv) flood compensation culvert to provide equivalent 1:1000-year flood plain storage and (v) permitted stream diversion around permitted development.

- The felling of approximately 12.5 hectares of commercial broadleaf/conifer mix plantations to facilitate the construction of the screening berms along the western boundary, to the north of the proposed IBA facility, the construction of Phase 7 (Cells 27 and 26) of the permitted landfill and the proposed northern surface water attenuation lagoon. Replanting and planting totalling approximately 16.8 hectares is proposed at the following locations (i) replanting over the proposed screening berms and (ii) new planting on the cap over cells 25, 26, 27 and 28 in the currently permitted landfill body.
- The relocation of an existing 20 kV powerline serving the facility administration buildings that will be impacted by the development of the screening berm to the east of the IBA cell.
- The construction of two additional ESB sub-stations (4.4m x 4.8m x 2.9m) in the following locations (i) new ESB sub-station and overhead ESB supply at the north-western corner of the permitted landfill footprint to serve pumps and other infrastructure and (ii) new ESB sub-station adjacent to proposed biological treatment building with ESB connection to adjacent 20 kV power lines.
- The extension of existing and provision of new below ground infrastructure (power, water, telemetry, leachate rising mains, drainage) and extension of the existing car park for the administration area to provide 40 no. additional car parking spaces.

The waste types to be accepted at the facility would be similar to those currently accepted, with the addition of two new waste types; stable non-reactive hazardous waste (maximum 5,000 tonnes per annum) and baled recyclable waste. The waste activities to be undertaken at the facility will be;

- Placement of waste within lined cells
- Biological treatment of residual MSW fines
- Management of leachate
- Storage of water for attenuation prior to discharge
- Storage of unsuitable waste in quarantine area prior to removal off-site

- Contingency storage for baled recyclables
- Contingency storage of baled MSW
- IBA recovery trials (screening and washing and recovery of metals).

The changes proposed to the operation of the landfill include intensification of landfilling, increase in final contour height and operation of 2 no. active faces in the permitted landfill and a working face in the IBA cells (Fig 2-2 of EIAR). Residual non-stabilised waste will be placed in a south to north direction reflecting current practice. Stabilised and inert waste will be accommodated in the most northerly cells and filling will progress in a southerly direction. IBA will be placed in cells 29 to cell 33 and filling will progress in a westerly direction (Figure 2-3).

An application will be made to the EPA to facilitate the licencing of the proposed development.

The proposed site layout is shown on Drawing No's LW14-821-01-P-0000-003 to LW14-821-01-P-0000-011.

The application is supported by an Environmental Impact Assessment Report (EIAR), a Stage 1 Screening Report for Appropriate Assessment and a Natura Impact Statement (NIS).

4.0 Planning History

The applicant provided the following details of the planning history relating to the site:

- **Reg Ref NO 01/5006** – Permission sought for the development and operation of an engineered landfill and ancillary facilities to accept 180,000 tonnes per annum of non-hazardous waste for 14 years. The planning authority decided to grant permission. The decision was upheld by the Board (PL 17.125891) subject to conditions which included a restriction on the waste to be accepted to be limited to waste arising from the North-East region as defined by counties Meath, Louth, Cavan and Monaghan. (Condition 2 (a)). The quantities of waste accepted at the was restricted to 132,000 tonnes per annum until December 2007 and thereafter to a maximum of 88,000 tonnes per annum (Condition No 2(b)).

- **Reg Ref No NA 50453** – In April 2006 Meath County Council refused permission for the change of use of maintenance building to offices and to omit Condition No 2(a) of 01/5006 which limited the waste to be accepted at the facility to waste arising from the North East Region.
- **Reg Ref No NA 60336** – Permission sought for the extension of the landfill footprint (c. 2 ha), an increase in the intake volume to 200,000 tonnes per annum and the removal of the original regional restriction on the origin of the waste accepted at the landfill by modifying condition no 2(a) of permission Ref No 01/5006 so that the facility could accept waste from adjoining waste regions. The planning authority issued a split decision permitting waste to be accepted from adjoining regions and refusing permission for the increase in the landfill footprint. The Board (PL17 220331) granted permission for the extension to the landfill footprint, the removal of the regional restriction and for the approved level of annual intake volume of 132,000 tonnes until the end of 2010. It refused permission for an increase in the waste intake volume to 200,000 tonnes per annum.
- **Reg Ref No NA 70015** – Permission granted by Meath Co Council for the installation and operation of a gas utilisation plant on a 0.3 ha site to generate up to 4.2 MW of electricity for export to the National Grid.
- **PL17**.**PA0009** – Permission refused by An Bord Pleanala for an increase in the rate of waste acceptance to 400,000 tonnes per annum and to alter the landfill phasing sequence with no extension to the permitted landfill void. It was considered that the proposal to increase the tonnage per annum intake would compromise the viability of more sustainable waste infrastructure and would compromise the long-term waste infrastructure requirements of the region and the designation of Knockharley as the long-terms residual landfill for the region.
- **Reg Ref AA161431** – Permission granted by Meath Co Council in January 2017 for an extension of duration of permission Reg Ref No 01/50006 for five years. The permission expires on 26th August 2021.
- **Reg Ref No AA 180145 –** Permission granted on June 21st, 2018 by Meath County Council for a solar farm with export capacity of approximately 3MW.

The panel arrays would be located on the top of the engineered landfill cells that have been capped and reinstated.

Other relevant consents

The site Is regulated under EPA Industrial Emissions (IE) Licence W0146-02. Under the licence the waste intake is limited to 200,000 tonnes per annum. The waste for disposal consists of residual, non-hazardous household, commercial and industrial waste.

The licence was amended as follows:

- Technical Amendment A - for a conditional amendment relating to ground water risk assessment.
- Technical Amendment B – regarding a trial for incinerator bottom ash metals recovery.
- Technical Amendment C - in relation to the acceptance of further quantities of waste for a limited period of time up until 31st December 2016.
- Technical Amendment D – authorised the acceptance of waste from an unauthorised landfill remediation.

Copies of the licence and technical amendments are provided in Volume 3 (Appendices) of the EIAR.

5.0 Legislative & Policy Context

Introduction

The legislative and policy context for the proposed development is set out in Chapter 3 of Volume 2 of the EIAR. It outlines European, national, regional and local legislation and the waste/planning policy framework that underpins the proposed development. It also sets out the relevance of policy to the proposed development, which is discussed in more detail in the assessment section of this report.

The following provides a summary of the most relevant together with details of more recent policy developments on waste.

5.1. European Legislation/Policy

Council Directive 1999/31/EC on the Landfilling of Waste – the objective of the Directive is to prevent or reduce as far as possible the negative effects on the environment arising from the landfilling of waste, in particular on surface water, groundwater, soil, air and on human health by introducing stringent technical requirements for waste and landfills. It sets out a number of obligations in relation to waste acceptance at landfills. One of the main acceptance obligations is that operators of landfills are not permitted to accept waste unless it has been pre-treated (including diversion). The Directive also sets out specific pre-treatment obligations for Biodegradable Municipal Waste and an EU-wide reduction of the use of landfill as an option for the disposal of biodegradable municipal waste.

Council Directive 2008/98/EC on Waste – A revised Waste Framework Directive was adopted in 2008. It required that waste be managed without endangering human health and harming the environment, and in particular without risk to water, air, soil, plant or animals, without causing nuisance through noise or odours and without adversely affecting the countryside or places of special interest. It set out a number of new targets for member states, including recycling rates. It also required member states to develop national waste policy programs. It clearly defines a five-stage waste management hierarchy (prevention, preparation for re-use, recycling, recovery and disposal).

It introduced the concept of 'self-sufficiency and proximity' and required Member States *'to take appropriate measures, in cooperation with other Member States where this is necessary or advisable, to establish an integrated and adequate network of waste disposal installations and of installations for the recovery of mixed municipal waste.*

It envisaged that the network would *'enable waste to be disposed of or waste (mixed municipal) to be recovered in one of the nearest appropriate installations, by means of the most appropriate methods and technologies, in order to ensure a high level of protection for the environment and human health'*.

While the Waste Framework Directive does not require each Member State to possess the full range of final recovery facilities within that Member State, its intention is that Member States, should on the whole and excepting for certain types

of waste, be in a position to appropriately manage waste generated within their own country.

The Directive was transposed into Irish law by the European Communities (Waste Directive) Regulations, 2011, as amended. Therefore, the waste hierarchy and the concepts of self-sufficiency and proximity are legislative requirements in Ireland.

Landfill Directive (EU) 2018/850, amending Directive 1993/31/EC requires that Member States significantly reduce the amount of municipal waste that is landfilled. Member States will be required to ensure that, as of 2030, waste suitable for recycling or other recovery, in particular contained in municipal waste will not be permitted to be disposed of to landfill. It is a requirement that the amount of municipal waste disposed of in landfills is reduced by 10% or less of the total amount of municipal waste generated by 2035.

EU Action Plan for the Circular Economy 2020 Circular Economy Action Plan 'For a cleaner and more competitive Europe' – which was launched in March 2020 recognises the need to accelerate the transition to a circular economy. The plan presents a set of interrelated initiatives to establish a strong and coherent product policy framework that will make sustainable products, services and business models the norm and transform consumption patterns so that no waste is produced in the first place.

It acknowledges that despite efforts at EU and National level, the amount of waste generated is not going down and that decoupling of waste generation from economic growth will require considerable effort across the whole value chain and in every home. It is also acknowledged that there is a requirement for enhanced waste policy in support of waste prevention and circularity. It acknowledges that further measures will need to be put in place to reduce waste and ensure that the EU has a well-functioning internal market for high quality secondary raw materials.

5.2. National Waste Management Policy

National Waste Policy has been evolving since 1998 and numerous documents have been published, which provide a commitment to reduce dependency on landfill as a primary waste disposal route and to provide more sustainable alternatives higher up the waste hierarchy. The EIAR provides details of documents dating back to 1998,

the following provides a summary of the most relevant, together with more recent policy developments.

A Waste Action Plan for a Circular Economy - Irelands National Waste Policy 2020-2025, which was published in September 2020 is described as a roadmap for the country to embrace the opportunities in becoming a circular economy. It fulfils the Government's commitment in the Programme for Government to start implementing a new National Waste Action Plan. The previous national waste policy *'A Resource Opportunity-Waste management policy in Ireland'* drove delivery on national targets under EU legislation, but the Irish and international waste context has changed in the years since its launch.

Under the plan ambitious targets to tackle waste and move towards a circular economy will be introduced. One of the overarching objectives of the action plan is to shift the focus away from waste disposal and treatment to ensure that materials and products remain in productive use for longer thereby preventing waste and supporting reuse through a policy framework that discourages the wasting of resources and rewards circularity. The targets include halving our food waste by 2030, a ban on certain single use plastic products from July 2021 and a plethora of other measures.

It sets out a strategy to decouple economic growth from waste generation and commits Ireland to transitioning to a circular economy in line with European policy goals and the UN's 17 sustainable development goals. It contains over 200 measures across various waste areas including Circular Economy, Municipal Waste, Plastics and Packaging, Construction and Demolition, Textiles, End of Waste etc.

A Resource Opportunity – Waste Management Policy in Ireland which was published in July 2012 outlines the measures through which Ireland will make *'the further progress necessary to become a recycling society, with a clear focus on resource efficiency and the virtual elimination of landfilling of municipal waste.* It acknowledges that the country requires an adequate network of quality waste treatment facilities and that a review of waste infrastructure in Ireland is being undertaken by the EPA that will examine the capacity for managing municipal waste in conformity with the principles of proximity and self-sufficiency.

In terms of how to refocus the approach to waste management and exploit fully the potential of waste as a resource, it sets out the guiding principles as set out below:

- Firstly, we must place prevention and minimisation at the forefront of waste policy by ensuring that we minimise the generation of waste through better design, through smart green purchasing and through a keener awareness of locally produced goods which boost jobs and the economy and can reduce impacts associated with transportation.
- Secondly, when waste is generated, we must extract the maximum value from it by ensuring that it is reused, recycled or recovered, including by the appropriate treatment of mixed municipal waste or residual waste collected in our black bins.
- Thirdly, disposal of municipal waste to landfill must be the last resort-in fact, we must now work to effectively eliminate our use of landfill for this purpose within the next decade, in line with the 2011 EU Roadmap to a Resource Efficient Europe[2].

Construction & Demolition Waste -Soil and Stone Recovery/Disposal Capacity Report, published by the combined regional authorities in December 2016 outlines a very significant shortfall in capacity for soil and stones in the GDA, in excess of 2.6 million tonnes of capacity per annum from 2019 onwards. In terms of options in relation to capacity provision for this shortfall, it is identified in the report that *'existing licensed facilities with capacity to expand, or with a readiness to increase their annual limit, could choose to apply for an extension to their existing licensed capacity'.*

The Construction & Demolition-Soil and Stone Recovery /Disposal Update Report 2020 notes that the capacity to treat non-hazardous non-inert C&D waste remains tight and there remains continued reliance on export.

5.3. Regional Waste Policy

Eastern Midlands Regional Waste Management Plan 2015-2021 – The plan was made in 2015 and the approach is to put in place coherent policy objectives and actions which align with European and National policy and support Ireland's move to

[2] A Resource Opportunity-Waste Management Policy in Ireland (DoECLG, July 2012). Section 1

an economy defined by higher resource efficiency and productivity. The strategic vision of the Plan is to view waste streams as valuable resources, leading to a healthier environment and sustainable commercial opportunities. It seeks to encourage a transition from a waste management economy to a green circular economy by increasing the value, recovery and recirculation of resources. One of its targets is to reduce and where possible eliminate, the landfilling of all major waste streams including municipal, industrial and construction and demolition wastes in favour of the recovery of residual wastes.

The Plan addresses many topics with varying degrees of direct relevance to the proposed development which are summarised as follows;

Section 4.3 Residual and Biowaste Exports - Under Policy A4 *the 'aim to improve regional and national self-sufficiency of waste management infrastructure for the reprocessing and recovery of particular waste streams, such as mixed municipal waste, in accordance with the proximity principle. The future of any national economic or policy instrument to achieve this policy shall be supported'.*

Section 11.2 Construction and Demolition Waste - the plan identifies historic trends in C&D waste generation which having declined have increased since 2012. It identifies the sharp decrease in the number of operational landfill nationally which were significant outlets for C&D waste in the past and the need for more recovery options to be developed.

Section 13 Disposal Infrastructure - identifies the reduction in disposal capacity available in the Region. It notes the increasing quantities of bio-stabilised residual fines accepted at landfill between 2012-2014 and that the *'decreasing availability of landfill as an option for this stabilised waste requires the region to research alternative options for bio-stabilised residual waste'.*

The issue of repatriated waste from Northern Ireland is also considered. The Irish Government is obligated to accept this illegally disposed of waste. Knockharley is the closest landfill in the ERM to the source of waste. It is estimated that 120,00 tonnes of mixed municipal waste will be repatriated in the coming years.

A specific policy measure for remediating historic closed landfills also is presented in the Plan (Policy G2). Appendix 4 of the Plan identifies a number of high risk (Class A) historic and legacy sites. It is likely that for a significant proportion of these sites,

the removal of the waste material will be the only preferable remediation option, with landfill capacity required.

Section 16 Market Analysis and Infrastructure Planning -recognises that there will be an on-going need for landfill capacity during the plan period for processed residual wastes. There is also a need for a contingency supply, in response to potential situations which pose a risk to the health and well-being risk of citizens, livestock and the environment. This section also addresses the issue of repatriation of waste stating that *'all waste repatriated must go to disposal'* and that the plan *'supports the repatriation of this waste to landfills in the region'*

Relevant policies include:

Policy E1: - Future authorisations by local authorities, the EPA and An Bord Pleanala of pre-treatment capacity in the region must take account of the authorised and available capacity in the market while being satisfied the type of processing activity being proposed meets the requirements of Policy E2.

Policy E2: - The future authorisation of pre-treatment activities by local authorities over the plan period will be contingent on the operator demonstrating that the treatment is necessary and the proposed activities will improve the quality and add value to the output materials generated on the site.

Policy E8: - The waste plan supports the development of disposal capacity for the treatment of hazardous and non-hazardous wastes at existing landfill facilities in the region subject to the appropriate statutory approvals being granted in line with the appropriate environmental protection criteria.

Policy E9a: - The ongoing availability of disposal facilities for non-hazardous municipal wastes in the region will be required during the plan period. The local authorities consider that there is no need to provide additional disposal facilities for residual wastes over and above the existing (i.e. operational, inactive or uncommenced) facilities in place.

Policy E10: - The waste plan recognises the need for on-going disposal capacity to be available in response to events which pose a risk to the environment and/or health of humans and livestock. The local authorities of each region shall monitor available contingency capacity annually.

Policy E 12: - The plan supports the repatriation of residual waste illegally disposed of in Northern Ireland to licensed disposal facilities appointed to a framework set up on behalf of the State by the National Trans Frontier Shipment office.

Policy E15a: - The plan supports the development of up to 300,000 tonnes of additional thermal recovery capacity for the treatment of non-hazardous waste nationally to ensure that there is adequate and competitive treatment in the market and the State's self-sufficiency requirements for the recovery of municipal waste are met. This capacity is a national treatment need and is not specific to the region. The extent of capacity determined reflects the predicted need of the residual waste market up to 2030 at the time of preparing the waste plan. Authorisations above this threshold will only be granted if the applicant justifies and verifies the need for the capacity and the authorities are satisfied it complies with national and regional waste policies and does not pose a risk to future recycling rates. All proposed sites for thermal recovery must comply with the environmental protection criteria set out in the Plan.

Policy E17: - The waste plan supports the development of at least 75,000 tonnes of additional biological treatment capacity in the region for the treatment of bio-wastes (food wastes and green wastes) primarily from the region to ensure there is adequate active and competitive treatment in the market. The development of such treatment facilities needs to comply with the relevant environmental protection criteria in the plan.

Policy G3: - Ensure that there is a consistent approach to the protection of the environment and communities through the authorisation of locations for the treatment of waste,

Policy G5: - Ensure that the implementation of the regional waste management plan does not prevent achievement of the conservation objectives of sites afforded protection under the EU Habitats and Birds Directives.

5.4. National Planning Policy

Project Ireland 2040 - The National Planning Framework **(NPF)-** which was published in 2018 is a strategic plan to guide development and investment out to 2040. It is envisaged that the population of the country will increase by up to 1 million

by that date and the strategy seeks to plan for the demands that growth will place on the environment and the social and economic fabric of the country.

The plan supports Ireland's move towards a circular and bio economy:

'Ireland is advancing its development as a circular economy and bio economy where the value of all products, materials and resources is maintained for as long as possible and waste is significantly reduced or even eliminated. Further developing the circular economy will require greater efficiency with raw materials, energy, water, space and food by constantly reusing natural resources wherever possible and where smartly designed products based on alternative plastic feedstock and recyclable materials will form the basis of smart material cycles, in order to create less waste and reduce resource consumption. A recycling rate of 65% has been proposed by the European Commission for 2030 for the Circular Economy Package[3].

The Plan sets out 10 goals, referred to as National Strategic Outcomes.

Under **National Strategic Outcome 9** the emphasis is on the sustainable management of water, waste and other environmental resources.

Under **National Policy Objective 56** the NPF aims to *'Sustainably manage waste generation, invest in different type of waste treatment and support circular economy principles, prioritising prevention, reuse, recycling and recovery, to support a healthy environment, economy and society'.*

Under **Section 9.1 Environmental and Sustainability Goals** the NPF reaffirms the role of waste management and capacity and to provide;

'Adequate capacity and systems to manage waste, including municipal and construction and demolition waste in an environmentally safe and sustainable manner and remediation of waste sites to mitigate the risk to environmental and human health'.

Project Ireland 2040 -National Development Plan (NDP) - which was published in tandem with the National Planning Framework seeks to drive Ireland's long term

[3] Project Ireland 2040-The National Planning Framework, Section 9.2.

economic, environmental and social progress over the next decade, in accordance with the spatial context of the NPF.

Under **National Strategic Outcomes and Public Investment Priorities: National Strategic Outcome 9** in Section 5 of the Plan it is stated that;

'Investment in waste management infrastructure is critical to our environment and economic well-being for a growing population and to achieving circular economy and climate objectives.'

Under National Strategic Outcome 9 it is also stated that:

'capacity will continue to be built in waste facilities, including anaerobic digestion, hazardous waste treatment, plastic processing, recycling, waste to energy and landfill and landfill remediation to meet future waste objectives.

Significant infrastructure capacity development will be required to separate and process various waste streams at municipal and national levels to achieve the new legally binding targets.

5.5. **Regional Planning Policy**

The **Eastern and Midland Regional and Spatial Economic Strategy 2019-2031**, came into effect on June 28th, 2019. Its principal purpose is to support the implementation of the NPF and the economic policies and objective of the Government by providing a long-term strategic planning and economic framework for the development of the region. It seeks to determine at a regional scale how best to achieve the shared goals set out in the National Strategic Outcomes of the NPF and it sets out 16 Regional Strategic Outcomes (RSO's) which set the framework for city and county development plans. It supports the circular economy to make better use of resources and become more resource efficient.

Regional Strategic Outcome 7 -Sustainable Management of Water, Waste and other Environmental Resources states:

'Conserve and enhance our water resources to ensure clean water supply, adequate waste water treatment and greater resource efficiency to realise the benefits of the circular economy'.

Regional Policy Objective RPO 10.25 – highlights that *'development plans shall identify how waste will be reduced, in line with the principles of the circular economy,*

facilitating the use of materials at their highest value for as long as possible and how remaining quantums of waste will be managed and shall promote the inclusion in developments of adequate and easily accessible storage space that support the separate collection of dry recyclables and food and shall take account of the requirements of the Eastern and Midlands Regional Waste Management Plan .

5.6. **Local Planning Policy**

The operative development plan for the area is the **Meath County Development Plan 2013-2019.** A new draft plan is currently under preparation but has not yet been adopted.

The site is located in a rural area and is unzoned. The closest settlement is Kentstown Village. Under Variation No 2 of the Plan, development and zoning objectives for the village were adopted. The Goal for Kentstown is;

'To protect the scale, character and the built and natural heritage of the village by encouraging development which will improve the character and structure of the village core and the social and physical infrastructure of the village'

Waste Management

Section 7.17 of the development plan is dedicated to waste management. It contains a number of policies/objectives as follows:

WM POL 1: - To adopt the provisions of the waste management hierarchy and implement policy in relation to the county's requirements under the current or any subsequent waste management plan. All prospective developments in the county will be expected to take account of the provisions of the regional waste management plan and adhere to the requirements of the plan. Account shall be taken of the proximity principle and the inter-regional movement of waste as provided for under appropriate Minister Directives from time to time.

WM POL 3: - To seek the provision of quality cost effective waste infrastructure and services, which reflects and meet the needs of the local community.

WM POL 3: - To seek in the Council's dealings with private companies that all waste shall be undertaken in compliance with the requirements of the EPA and relevant waste management legislation and policy.

WM POL 6: - To encourage the development of waste infrastructure and associated developments in appropriate locations, as deemed necessary in accordance with the requirements of the Regional Waste Management Plan.

WM POL 7: - To encourage the recycling of construction and demolition waste and the reuse of aggregate and other materials in future construction projects.

WM OBJ 1: - To facilitate the provision of appropriate waste recovery and disposal facilities in accordance with the principles set out in the appropriate Waste Management Plan applicable from time to time made in accordance with the Waste Management Act 1996.

WM OBJ 8: - To facilitate the implementation of national legislation and national and regional waste management policy.

WM OBJ 18: - To seek to ensure in cooperation with relevant authorities that waste management facilities are appropriately managed and monitored according to best practice to maximise efficiencies and to protect human health and the natural environment.

Section 8.1.9 of the Plan refers to Energy from Waste.

EC POL 3: - To encourage the production of energy from renewable sources, such as biomass, waste material, solar, wave, hydro, geothermal and wind energy, subject to normal planning considerations, including in particular, the potential impact on areas of environmental or landscape sensitivity and Natura 2000 sites.

6.0 Planning Authority Submission

The submission from Meath Co Council includes the report of the Chief Executive, details of internal referrals (Appendix 1) and presentation/minutes of meeting with elected members (Appendix 2).

6.1. Planning Reports

The Planning Report submitted by Meath Co Council summarises the content of the EIAR under each topic, considers the Appropriate Screening Stage 1 Report and the Natura Impact Statement. It sets out its views on a range of topics and provides an overall planning assessment, conclusions and recommendations. It is supported by separate reports from the Environment Section, Transportation Department, Water

Services and the Conservation Officer. It also includes a peer review of the biodiversity section of the EIAR, the Appropriate Assessment Screening Report and the Natura Impact Statement.

The following provides a summary of the key issues raised:

With regard to the **principle of the development** it is accepted that there will always remain a requirement for landfill capacity as part of a fully integrated waste management system, which incorporates high recovery and recycling, to provide management capacity for non-recoverable/recyclables wastes, as well as to provide back-up contingency and emergency capacity, as and when required. Post 2021, there is likely to be only 120,000 tonnes of landfill capacity in the country and that fact alone, when viewed against the identified capacity requirements, supports the need for increased landfill capacity. The applicant has demonstrated that there is a need and requirement for the proposed development. This need is supported by the National Planning Framework, the Regional Planning Guidelines, Draft Regional Spatial and Economic Strategy and the Regional Waste Management Plans.

Regarding **population and human health** it is noted that comprehensive reports have been received from the Environment Section which recommends that a number of conditions be attached to any grant of permission. Emissions to air, dust, odour, noise and water quality will be subject to the EPA IE licence. It is acknowledged that many people may experience disturbance during the construction phase. However, it is noted that the proposed development is not a greenfield site, but is set in the context of an existing waste management facility with long established operations.

In terms of **air quality & climate** it is stated that following the implementation of the mitigation measures outlined in the EIAR and the implementation of good housekeeping and management procedures and techniques, it is predicted in the EIAR that the proposed development will not have a significant impact on ambient air quality, dust exposure or PM_{10} exposure. The odour exposure levels are predicted to be lower than the current baseline and the 'do nothing' situation for the first four years.

It is noted that the Traffic Impact Assessment contained in the EIAR concluded that the construction and operational stage of the proposed development will have no significant impact on **roads, traffic & transportation** in the area and mitigation

measures have been proposed which include vehicles utilising only the designated haul routes. However, a number of issues have been raised by the Road's Section, which requires the submission of additional information.

The planning authority is generally satisfied with the content of Chapter 9 regarding **noise & vibration** impacts. A detailed report has been received from the Environment Section. Noise emissions will be subject to limits under the EPA IE licence.

A detailed Peer Review Report of the **Biodiversity** chapter was carried out by Dr Pat Moran on behalf of Meath Co Council. The Review Report found numerous deficiencies and issues which impact on the identification of potential impacts, and the prescription of mitigation measures. No surveys have been carried out on a number of habitats and in relation to protected species which are known to exist on the site or where there is a high probability of them existing. A range of additional information is required in this regard.

With regard to **Land, Soils and Geology** a detailed report has been received from the Environment Section. A number of conditions are recommended to any grant of permission.

The implementation of the Construction and Environmental Management Plan together with proposed mitigation measures should ensure that the proposed development has no impact on **hydrology & surface water quality.**

With regard to **landscape and visual assessment,** the Visual Impact Assessment concludes that the proposed buildings and the increase in height will not be highly visible from viewpoints on the local road network. The applicant has considered the protected viewpoints within a 5km radius of the site and the proposal will not impact on any of those views. The applicant has not considered protected views from outside a 5km radius and the report received from the Conservation Officer recommends that the visual impact of the new height should be illustrated from the Hill of Skreen. It is also noted that no landscaping, restoration or aftercare plan has been submitted for approval.

The proposal will involve the provision of a number of additional buildings and structures on the site. All of these buildings and structures will be located within and around the existing developed footprint of the landfill facility. The proposal will also

involve increasing the height of the landfill body from a post settlement final contour height of 74m OD to 85m OD. Given the lack of drawings and lack of clarity regarding shape and heights of the proposed landfill together with the proposed berms, it is unclear what the impact will be on the local area. It is unclear where the increase in height will commence as the site layout plan appears to show the finished level of the entire landfill as 85m OD which does not correspond with the development description.

The proposed biological treatment facility and IBA plant while large in plan area will be located in a low-lying part of the site and set back 250m from the L-5056-13 and 850m from the N2. Having regard to the set back from the local road network and the existing/proposed screening berms, it is not considered that the proposed buildings and ancillary structures would impact significantly on the visual amenity of the area, or, be highly visible from any viewpoints on the local road network.

The main landscape impacts associated with the proposed development will be the removal of existing woodland boundary planting and the construction of soil berms and the increase in landfill height. The proposed new buildings will be significantly screened in views from vantage points to the south and east of the site by a combination of existing vegetative cover and their placement at a low point on the site. It is not considered therefore that buildings will become a significant feature in views from the local road network, from residences to the east of the site or from Kentstown Primary School to the south. The existing permitted development within the site has already altered the landscape character of the site and it is not considered that the proposed development will result in significant changes in the size, elevation or landscape character in this location.

While it is noted that an ‘Existing Forestation Proposed Felling and New Planting’ drawing has been submitted, the drawing does not provide any detail in relation to the type or age of trees that will be felled and planted. No arborist report has been provided regarding felling and proposed planting. More detailed information is required in relation to the proposed landscaping of the site.

In terms of **archaeology, architecture and the cultural heritage** of the area it is stated that the fieldwork carried out for the phased development of the Knockharley landfill revealed substantial archaeological remains within the immediate vicinity of

the proposed development area. Having regard to the previously unrecorded archaeological remains, which were uncovered as part of the original development, it is considered that a detailed archaeological study and survey of the subject site would be required in advance of the commencement of the development.

With regard to **material assets** the proposed development will involve the continued generation of electricity from landfill gas and export to the national grid, a reduction in the volume of Biodegradable Municipal Waste to landfill in line with National and EU waste policy and facilitate the future recovery of IBA for use as an aggregate. The diversion of BMW from landfill and the generation of energy from landfill gas will have a positive impact on climate. The impact of the relocated ESB line on bird flight-paths needs to be assessed.

The purpose of Chapter 16 is to assess the overall effects and **cumulative impacts** of the proposed development. With the successful application of the mitigation measures presented and best practice techniques implemented during construction and operation, it is stated in the EIAR that the proposed development is not anticipated to have any significant long term, negative impacts on the local environment. It is clear that there are both potential positive and negative effects associated with the proposed development. A number of internal reports have raised issues in relation to traffic, surface water management and ecology in particular. These reports require additional information to be submitted.

Appropriate Assessment – The Peer Review of the Natura Impact Statement concluded that arising from the inadequacies of the EIAR and AA Screening, there are unforeseen potential impacts on a minimum of five Natura 2000 sites. The potential for the proposed development to impact on the conservation objectives of the qualifying interests or integrity of Natura sites has not been adequately identified. It is considered that further information is required.

Conclusion – The overall conclusion reached by the planning authority is that the Knockharley site is of National and Regional importance and fulfils a significant role in terms of key waste infrastructure for different waste streams. However, it is considered that various issues need to be addressed by way of further information.

In addition to the matters raised regarding roads/ traffic, surface water management, biodiversity and landscape and visual impacts, it is considered that the submitted

information is inadequate to provide an overall view and background to the existing operation of the facility and how the proposed extension will alter practices and operations on the site. It is recommended that a planning report be provided detailing the planning history and how this relates to current practice and operations at the landfill. The report should detail the time period remaining with each planning permission and the amount of waste that existing permissions would accommodate. A clear delineation of what ancillary infrastructure is on the site and what is proposed should be provided. The time period for which planning permission is being sought should also be clarified.

6.2. Other Technical Reports

Environment Section

A detailed report was received from the Environment Section of Meath Co. Council (Appendix 1). The main points raised are as follows:

- there will be an on-going need for the management of residual waste at landfills and that provision should be made for contingency capacity, repatriation of waste and the need to manage hazardous waste which cannot be recycled or recovered.
- The proposed development, while still having disposal as the main activity, is more of a waste management facility than disposal facility. The management and segregation of IBA, biological treatment of MSW fines, self-sufficiency in the management of leachate as well as providing contingency provides a more sustainable facility.
- With regard to **dust**, in the period between 2013 and 2018 there were 2 exceedances of the dust levels of 350mg/m3/day and no exceedances of the PM_{10} 50 ug/m3 limits.
- The risk of dust from earthworks and construction are assessed to be low/negligible. Existing forestry will help to act as a buffer and it is recommended that existing planting remain in place for as long as possible during the construction stage and that compensatory planting take place at the beginning of the works.

- Due to the nature of landfill construction, the construction period may be lengthy and accordingly the CEMP should examine the sequencing of the work, the concurrent nature of the work and the estimated emissions produced by the work as well as mitigation measures. It should also consider and mitigate against the impact of climate change in the form of extreme or severe events such as high temperatures and drought, intense or prolonged precipitation, extreme wind or gusts. Constraints relating to same examined, for example, drought conditions and water restrictions, therefore an alternative to dampening dust would need to be considered.
- During the operational stage dust will be created from the various vehicles operating in and around the site, from placement of waste and IBA in cells. These will be more localised than the general construction activities. The impacts from vehicle emissions was found to be negligible.
- While vehicle emissions during the construction phase are assessed as Imperceptible, the applicant should be encouraged to use energy efficient, low emission vehicles and plant and to consider ways to reduce emissions in construction practice, methodology and sequencing. With regard to the operational phase vehicle emissions are predicted to be Negligible.
- Flare and engine stack monitoring is undertaken yearly and these remain within the emission limit values.
- Emissions associated with the biological treatment facility process are mainly bio-aerosols and air borne micro-organisms (fungi, bacteria etc). Reference is made to documents and literature on bio-aerosols. It is noted that a document prepared by CRE (Compost Association of Ireland) recommend a 250m buffer from receptors. The nearest receptor is 346m from the building and the process would be undertaken indoors further reducing the likelihood of emissions. Reference is also made to ammonia and hydrogen sulphide and predicted concentrations are unknown as they vary depending on waste make-up, age of waste and composting system that will be used. However, 90% of these emissions will be captured in the scrubber and biofilter.
- With regard to **odour**, there are three ways the new application could impact on odour emissions from the site. These include the biological treatment

facility, the quality and quantity of waste received, and the creation of the leachate storage tanks. For a number of years odour was an intermittent issue for Knockharley. The EPA in 2016 published the poorer performing licenced sites and this action greatly reduced the number of odour complaints. This period also included the Section 56 acceptance of 70,000 tonnes of waste from an unauthorised site in Timoole. This waste which sat in a perched water table was highly odorous. It is considered that the proposed process is a more sustainable approach as pre-treatment stabilises the waste resulting in less onerous odour emissions. IBA does not have an offensive odour.

- The odour modelling undertaken predicts that the proposed development will have a beneficial effect on current odour emissions, due to enhanced capping and the stabilised nature of the waste (stabilised fines and non-biological waste). The number of dwellings exposed to odour levels that exceed the threshold fall from 12 under current conditions to 4 in Year 4 of development. This rises to 6 in Year 6 as development occurs in a northerly direction.
- While the proposed scenario has a positive impact on odour compared to the current arrangement, mitigation and control measures must be carefully considered and included in an Odour Management Plan The applicant should be conditioned to install a number of E-Nose technology or equivalent odour monitoring technology at sites around and external to the landfill.
- With regard to noise and vibration, given the distance of the proposed development from receptors, vibration impacts are considered to be imperceptible. The existing development is conditioned under the licence to undertake quarterly noise monitoring at 4 no. locations. The noise modelling results show 6 possible breaches of the licence limits over 3 of the 12 scenarios, which include tree felling and berm construction. The berms when completed will help mitigate against noise nuisance and it is estimated that this will take 2-3 weeks to complete. The EIAR details a range of mitigation measures to limit noise nuisance and these are considered satisfactory and should be included as conditions.

A number of conditions are recommended which includes;

- Maximum of 180,000 tpa of MSW to be accepted for disposal, accept in an emergency situation.
- An annual contingency capacity of 44,000 tpa shall be maintained.
- Temporary storage of baled waste should be stored inside the biological treatment facility and temporary storage shall be for a period of no longer than 8 weeks.
- Applicant shall on a three yearly basis prepare a report on the management of IBA in the facility, which shall include details of the volumes of IBA, further treatment of IBA, trends in relation to IBA, potential indigenous uses, development of Article 28 for IBA (if applicable) and the applicant shall liaise with stakeholders involved in the production and management of IBA and statutory and non-statutory stakeholders.
- The applicant shall prepare, update accordingly and communicate to all site personnel the Construction Environmental Monitoring Plan (CEMP). The CEMP shall include, but not be limited to, operational controls for dust, noise and vibration, waste management, protection of soils and groundwaters, protection of flora and fauna, site housekeeping, emergency response planning, site environmental policy, environmental regulatory requirements and project roles and responsibilities. The CEMP should be treated as a live document.
- The CEMP and mitigation measures shall include management of potential nuisance factors as a result of extreme weather events and consider constraints associated with such events.
- The applicant shall commence and complete compensatory tree planting in advance of other construction work associated with the development.
- The applicants shall ensure all customers to the facility have appropriate covers on HGV's carrying waste to prevent littering and to limit offensive odours.
- The applicant shall install 'E-Nose' technology or equivalent odour monitoring technology at locations around and external to the site. The number and locations to be agreed with the EPA and the planning authority.

Transportation Department

The Senior Executive Engineer's report of February 6th, 2019 noted that the applicant has utilised a number of previous traffic surveys from 2010, 2015 and 2016 to supplement the review of traffic and transportation.

The use of traffic data which is 5 years old and greater is not acceptable for the purpose of determining traffic assignment and distribution to and from the proposed development. The applicant should be requested to undertake up to date traffic survey information that meets the requirements of determining such data.

Based on a review of the surrounding network the most critical junctions would appear to be the site access junction, the R150 O' Brien's Cross and the R153 Balrath Cross junction. No drawings are provided of the existing/proposed haulage routes which are to be used to confirm that the proposed development would not impact on these junctions.

The applicant should be requested to submit a Traffic Management Plan, the contents of which should be agreed with Meath Co. Council that includes an assessment, that fully assesses the network to be traversed and drawings indicating proposed haul routes. As there is potential for HGV traffic to travel through the villages of Slane and Duleek the Traffic Management Plan should indicate how these movements will be managed and proposed mitigation measures identified to limit the impact on the villages, which may include consideration of alternative routes.

Given the significant increase in annual waste acceptance at the proposed development, the type of traffic that will be generated and the sensitivity and strategic importance of the N2 national primary road in general, it is not considered that a threshold sensitivity assessment is an appropriate method of assessing the traffic impact of the proposed development on the key national road junctions in the vicinity of the site.

The applicant should be requested to undertake a detailed traffic assessment using appropriate industry standard software to determine the impact of the proposed development on the following junctions;

- N2/Site Access Junction
- N2/Rathrinagh Cross

- N2/O Brien's Cross
- N2/Balrath Cross
- N2/Kilmoon Cross (if used as a haul route).

The impact of the additional traffic on the villages of Slane and Duleek should be assessed and mitigation measures identified and implemented as necessary.

The existing access was designed for the proposed development in 2004. The standards have been revised since 2004 and the latest standard is TII DN-GEO-03060 'Geometric design of Junctions'. The applicant should be requested to provide drawings, demonstrating that the access junction complies with this standard or to provide a drawing showing the amendments necessary to ensure the junction layout meets with this standard. The necessary sightlines and swept path analysis should also be illustrated on the drawing. Any changes in the layout should be subject to a Road Safety Audit.

Conservation Officer

The report of 15/01/19 states that the visual impact of the proposal should be illustrated from the Hill of Skreen.

Water Services

The report of 18/01/19 states that the development as proposed broadly meets the requirements of Meath Co. Council Water Services Section with respect to the orderly development, treatment and disposal of surface water. However, clarification is required in respect of the proposed site discharge rates and attenuation volumes. The applicant is required to provide clarification for using the 1 in 20-year storm event rather than the 1 in 100-year storm event to determine the site attenuation volume.

If it is the applicant's intention to apply a greenfield run-off allowance greater than the 1 in 1-year storm event clarification is required in relation to the long-term storage proposal. Further detail is required in relation to flow control devices which will be applied and their relationship with the proposed overflows and top water levels within the attenuation systems during storm events. Attenuation volumes should be upsized by 10% to allow for climate change.

Fire Services Department

The Assistant Chief Fire Officer's report of 16/1/19 noted that a Fire Safety Certificate is not required for the development.

Peer Review

The Peer Review of the Biodiversity chapter, the AA Screening report and the NIS is considered in the planning assessment and under Appropriate Assessment.

7.0 Submissions Received

Submissions in respect of the application have been received from prescribed bodies, public representatives, individuals and groups. This section of the report seeks to draw the attention of the Board to the significant matters raised by these parties.

7.1. Prescribed Bodies

Health Service Executive

The submission provides an overview of the content of the EIAR under various headings. The conclusions arrived at are as follows:

- The proposal contradicts Ireland's Waste Management Policy, A Resource Opportunity, 2012, which provides a roadmap on how Ireland will reduce its dependency on landfill, while at the same time putting in place appropriate measures and approaches to reduce waste, and making the most of opportunities to recover resources from waste. The Eastern Regional Waste Management Plan 2015-2021 states that waste should be viewed as a valuable resource.
- The EIAR states that recovery of IBA is well developed in the UK and continental Europe, where the use of incinerator bottom ash aggregate is quite commonplace and is approved for use by the Environmental Agency. The focus on the treatment of IBA should be on recovery options rather than landfilling.
- The rate of waste acceptance on site has far exceeded the volumes permitted under the planning conditions. The proposal is to significantly increase the rate of landfilling of waste by up to 4.4 times the rate permitted by the existing

planning permission. The scale of expansion proposed contradicts national policies and defies the EU's Waste Management Hierarchy.

- The biological treatment of the organic fraction of municipal solid waste on site will reduce the volume going to landfill and will also have a beneficial effect on odour exposure. It is also stated in the EIAR that it will benefit climate by reducing green-house gases and the generation of power and subsequent saving of fossil fuels at power plants. This is an example of further processing which is more in line with both National and Regional polices and will result in less waste going to landfill.
- The odour baseline conditions in the odour impact assessment were established using modelling based on a rate of disposal of 88,000 tpa. The actual rate of disposal appears to be 200,000 tpa, which is more than double the waste that was used to establish baseline conditions. The odour impact assessment should be based on the actual rate of waste disposal in order to provide an accurate reflection of existing conditions.
- The results of modelling in the odour impact assessment show that 12 properties are currently exposed to odour levels that exceed the threshold where a potential significant risk of odour impact could develop. Modelling has shown that 4-6 properties will exceed this threshold as a result of the proposed development. As evidenced by the number of complaints made in the past two and a half years, odour nuisance is impacting on the lives of some residents in the vicinity of the landfill.
- It is stated in the odour impact assessment that *'the characteristics of the odour generated from the landfill process, in terms of intensity and offensiveness will ultimately depend upon the age, type and quantity of waste received'.* The waste acceptance criteria at the landfill is therefore of the upmost importance and the types/quantities proposed to be accepted reviewed with more onus placed on accepting wastes which have received pre-treatment or stabilization processes. The biological treatment of the organic fraction of municipal solid waste on site is welcome as it will have a beneficial effect on odour exposure and reduce the volume of waste being landfilled.

- A number of noise complaints have been received as a result of operations on site in the past number of years. The applicant states that when investigating these noise complaints, the boundary noise levels measured were compliant with the daytime noise limit set in the licence. Adherence to specified noise limit values may not protect sensitive receptors from noise nuisance. In the investigation of complaints current noise monitoring results should be compared to pre-development baseline noise results for the site. The significance of the change in the noise environment should be assessed in line with *BS 4142:2014 Method for Rating Industrial Noise Affecting Mixed Residential and Industrial Areas*. The tonal and impulsive nature of the noise source must be taken into account.

Transport Infrastructure Ireland

It is acknowledged that the subject site utilises an existing direct access to the N2, national primary road at a location on the network subject to a 100kph speed limit. The Board will be aware that the DoECLG *'Spatial Planning and National Roads Guidelines'* advise, in relation to access to national roads at locations where a speed limit greater than 60kph applies, that the policy of the planning authority will be to avoid the creation of any additional access points for new development or the generation of increased traffic from existing accesses to national roads.

Section 2.6 of the DoECLG Guidelines also provide for 'exceptional circumstances' where a less restrictive approach to the general policy on controlling access to national roads can be applied to developments of national and regional strategic importance, but only as part of reviewing or varying relevant development plans.

Following consultation with Meath Co Council during the preparation of the current development plan, provisions relating to the access at Knockharley were agreed for inclusion in the plan (Section 6.10.8 refers). Having regard to the foregoing, TII has no objection in principle to the access proposals outlined in the application subject to compliance with Section 6.10.8 of the development plan and standard road safety considerations.

The TII is satisfied with the scope of the traffic analysis carried out in support of the application and has no objection to the findings presented in terms of potential impact on the safety and efficiency of the national road network. Subject to

operations based on the analysis set out in the EIAR, the TII has no specific comments to make on the proposed development. Any recommendations arising from the traffic analysis contained in the EIAR should be included in any decision to grant permission in the interests of maintaining levels of safety, capacity and efficiency on the national road network.

It is noted that the proposed development is located within the line of the Leinster Orbital Route (LOR), formerly known as the Outer Orbital Route. The TII notes the relationship of the subject site to the LOR has been assessed (Section 8.5.1 of the EIAR). It is noted that the extent of the subject site does not appear to be altered in the current application. Having regard to the foregoing, TII is satisfied with the conclusions of the EIAR in this regard.

Geological Survey of Ireland

Record show that there are no County Geological Sites (CGS) located within the vicinity of the site.

Irish Aviation Authority

The IAA stated that they did not wish to make any observations on the application.

7.2. Observers

The issues raised by the observers are summarised in Appendix 1, appended to the back of the report. The main issues raised are in respect of:

- The need for the development.
- Increase in waste acceptance at the facility.
- Type of wastes being accepted at the facility.
- Impacts on health.
- Impacts on roads/traffic.
- Odour.
- Noise.
- Residential amenity.
- Visual amenity.
- Biodiversity.
- Tourism
- Lack of public consultation.

The raised by the observers is addressed in the Planning Assessment Section of this report.

7.3. Further Information

Further information on the application was requested by the Board on May 16th, 2019 on the following matters;

- Need for the development.
- Roads, traffic & transportation
- Landscape & visual impact
- Biodiversity.

The applicant responded to the further information on October 25th, 2019.

Submissions on the further information were received from the following parties:

Transport Infrastructure Ireland stated that the Authority's position remains as outlined in TII's initial submission to the Board.

The **Health Service Executive** does not accept that landfill is the only treatment option for the majority of non-hazardous wastes (non-municipal bulky wastes, non hazardous soil and stone and other C&D wastes). All resource opportunities from waste must be exhausted before final disposal.

The HSE are in agreement with the proposal that contingency capacity of 44,000 tonnes per annum be maintained at the landfill facility to ensure that there is on-going disposal capacity available for events that pose a risk to the environment and/or health of humans and livestock.

The HSE reiterate that the focus for the treatment of IBA should be on recovery options for this waste product rather than landfilling in line *with 'A Resource Opportunity - Waste Management Policy in Ireland*' and the proposals outlined in the *Eastern Regional Waste Management Plan 2015-2021.* Every effort should be made to re-purpose IBA back into a green circular economy.

The **Geological Survey of Ireland** had no further comments to make to its original response.

Mr Richard Finnegan reiterated some of the matters raised in his original submission. He also stated that the operator was in breach of its planning permission and is accepting more than 88,000 tonnes per annum. He stated that there are adequate facilities for recycling and reprocessing of organic waste in Ireland (EPA's Clean Technology Centre presentation), but that the collection service is hugely inadequate.

The proposal is contrary to the Government's new Waste Action Plan for a Circular Economy which aims to move away from landfill towards more sustainable use of materials and to limit the amount going to landfill to 10% by 2035.

Mr Finnegan noted that landfill levy is not charged on the vast bulk of waste that enters the site. Waste 'treated' on site is not subject to the landfill levy. Levies are not being paid on C&D waste, recovered waste and engineering waste. These waste streams are being referred to a recovery and not waste and are not be included in the 88,000 tonnes for which there is planning permission. This is a cynical strategy which is being used to circumvent both the planning conditions and the landfill levy.

Kentstown Hall Committee repeats the issues raised in its previous submission.

8.0 Oral Hearing

An oral hearing using Microsoft Teams was held on December 16th, 17th and 18th 2020 from the Board's offices. The proceedings included the following:

Day 1 (December 16th) – Mr David Tobin stated that since the application was made, the applicant, Knockharley Landfill Limited, underwent a change of ownership and is now within the group of companies owned by Beauparc Utilities. Mr Tobin provided an overview of the proposed development on behalf of the applicant. He set how the waste policy landscape and residual waste arisings have changed since the application was made. He reiterated that the proposed development remains fully aligned with both latest government policy and current residual waste disposal demands.

Mr Hugh Coughlan on behalf of the Eastern Midlands, Southern and Connacht - Ulster Waste Management Planning Regions (The Regions) responded to the applicants response to further information.

Day 2 (December 17th) - Submissions were made by observers on a range of issues similar to those raised in the submissions.

Day 3 (December 18th) - Submissions on Traffic & Transportation were made by Mr Julian Keenan (Trafficwise) on behalf of the applicant and by Mr Joe Mc Garvey S.E.E Transportation Department on behalf of Meath Co Council.

Submissions were made on Biodiversity and Appropriate Assessment by Mr Patrick Moran (FERS), on behalf of Meath Co Council and by Mr Carl Dixon on behalf of the applicant.

A short statement on Landscape and Visual Impact was made by Mr Robert Miles, Conservation Officer, Meath Co Council. Ms Caroline Corrigan S.E.E Environment Department made a statement on carbon sequestration associated with removal of trees.

Cross questioning was facilitated each day.

The matters discussed during the oral hearing are discussed in more detail below in the assessment.

The Board retained the services of Mr Pierce Regan, Artane Recording Studio, to record the proceedings. This constitutes the official record of the proceedings.

9.0 **Planning Assessment**

In order to comply with the requirements of the Planning and Development Act, 2000 (as amended), the assessment is divided into three parts to include a Planning Assessment, Environmental Impact Assessment and Appropriate Assessment.

There is an inevitable overlap between the assessment with matters falling within both the planning assessment and the environmental impact assessment. In such cases, matters are not repeated but such overlaps are referred to in subsequent sections of the report.

I have examined the file and the planning history, considered European, national regional and local policy and I have inspected the site and environs. I have assessed the proposed development and considered the various submissions received from the applicant, the planning authority, prescribed bodies and the observers.

I consider that the key issues arising for determination by the Board in respect of the planning assessment include the following:

- Need for the Development
- Landscape and Visual Amenity
- Roads and Traffic
- Impacts on Human Health
- Impacts on Air Quality
- Noise & Vibration
- Biodiversity
- Public consultation

9.1. **Need for the development**

The proposal is to increase the quantity and types of waste accepted at the facility. It is also proposed to increase its capacity by raising the height of the landfill body and providing dedicated storage for IBA. Under the terms of the existing permission up to 88,000 tonnes per annum of non-hazardous residual waste for disposal can be accepted at the landfill for disposal. The proposal seeks to increase the amount of waste accepted to 440,000 tonnes per annum for disposal and recovery. No change is proposed to the existing permitted footprint of the landfill.

The existing facility currently accepts residual, commercial and industrial waste, in addition to C&D waste and incinerator bottom ash for disposal and recovery. The waste types to be accepted will be broadly similar, with the addition of two new waste types to include stable non-reactive hazardous waste (maximum 5,000 tonnes per annum) and baled recyclable waste. The waste accepted at the facility will be managed through disposal or recovery facilities, depending on the nature of the waste materials.

Issues raised by the observers during the course of the application and during the oral hearing.

Many of the observers express dissatisfaction with the proposal on the basis that it will significantly increase the capacity and extend the life of the landfill. There are

also concerns that this will facilitate landfilling which is the least favourable option on the waste hierarchy. The HSE state that the proposal contradicts national policies and defies the EU's waste management hierarchy by significantly increasing landfilling and failing to exhaust resource opportunities from waste prior to disposal.

It is applicant's contention that the need for the development is established. This is described and assessed in the EIAR (Chapter 4), with further clarification provided in the response to further information. The EIAR examines the need for the development both currently and in the future by providing an analysis of the quantities of waste arising in each waste stream and the adequacy of the existing means of management for these wastes.

Municipal Solid Waste

Table 4-12 of the EIAR (Future Management Scenario) provides details of the estimated municipal solid waste (MSW) that will be generated over the period 2017-2030 and its potential future management. Using data from the three regional waste management plans (Table 4-3 of the EIAR), it is estimated that c 3.9 million tonnes of MSW will be generated nationally by 2030, the residual fraction of which may potentially be landfilled. Year on year recycling rates are applied to the volumes of MSW generated annually to provide future projections of residual MSW remaining (Table 4-4). This equates to between 1.4 and 1.49 million tonnes requiring management annually over the next number of years.

Table 4-12 details the quantities of waste that will be diverted to non-landfill options (waste to energy, SRF production, export) and the volumes remaining for management at landfill. In addition to residual MSW waste, there will be other wastes requiring management including IBA, C&D, street sweepings, grit & screenings, repatriated waste and historic legacy site dig outs. The EIAR provides projected quantities for each waste stream and estimates the total volume of waste that will require management over the period 2017-2030. When this is considered against the permitted capacity at the remaining active landfill, a capacity gap arises from 2021 onwards.

The Regional Waste Management Planning Offices (RWMPO's) prepare quarterly reports on waste capacity in Ireland. Both Mr David Tobin (applicant) and Mr Hugh Coughlan (Waste Region) referred to the most recent report of Q3 2020 at the oral

hearing. It predicts that by the end of 2020 the residual waste arisings would be in the region of 1,720,000 tonnes. These figures are significantly higher than those predicted in Table 4-12 of the EIAR (1,463,976 tonnes). Mr O Callaghan (applicant) also stated that these figures excluded repatriated waste, legacy sites and the reduction due to Covid (estimated at 90,000 tonnes to the end of Q3 2020), and that the current proposal will only partially address this shortfall in national capacity.

The Region's quarterly report states that all active capacity is currently being utilised and that exports are expected to reach 319,000 tonnes by the end of the year. It also states that export of residual MSW for recovery continues to be a significant activity and is critical to the successful management of residual MSW generated. There was a reliance on export to overseas waste-to-energy facilities to process in the region of 349,000 tonnes in 2020.

The Joint Waste Regions report confirms that the projected overall treatment capacity for MSW, including secure export options as well as domestic thermal treatment, for 2019 and beyond is very limited and considers that an increase in landfill capacity for non-hazardous waste, and in particular the non-hazardous wastes listed in the application is timely and justified. It is acknowledged in the Regional Waste Management Plans that the volumes of MSW generated nationally will continue to increase. While the role of indigenous thermal recovery from waste is increasing in the management of this waste, the national need for an additional 300,000 tonnes is identified in the waste plans. This has not yet been delivered.

In November 2020, the EPA published its latest state of the environment report[4]. It also referred to the country's limited, and in some cases zero national capacity to treat the waste generated. The report acknowledges that national municipal landfills and waste-to-energy facilities are operating at capacity and that the country has some significant waste infrastructure deficits, as evidenced by its high dependence on export markets for treating municipal and hazardous wastes, which places the state in a very vulnerable position. It also referred to the lack of contingency capacity currently in place for emergency/unforeseen events and that lack of capacity has affected the State's ability to repatriate deposited illegally in Northern Ireland.

[4] 'Irelands Environment - An Integrated Assessment (EPA, 2020).

On the basis of the foregoing, I consider that the need for additional landfill capacity has been established. The Waste Regions acknowledge that the Knockharley site is of national and regional importance and fulfils a significant role in terms of waste infrastructure for the different waste streams. The Regions have raised no objection to the proposed overall tonnage of 440,000 tonnes per annum. The proposal will allow the various waste streams to be managed in conformity with the principles of proximity and self-sufficiency.

Incinerator Bottom Ash

While Knockharley accepts some IBA material from Carranstown for disposal and recovery, most of the material from Poolbeg is currently exported as required by the conditions of the permission. The waste management plan also identifies the need for an additional 300,000 tonnes per annum of thermal treatment within the State which will produce additional quantities of IBA requiring treatment.

The observers expressed concerns during the oral hearing that the applicant's proposals for IBA storage at the facility was in fact disposal under a different guise. It was argued that the material should continue to be exported where it could be re-used as opposed to deposited in the ground.

The applicant proposes to store the IBA pending the conclusion of trials on its suitability for re-use in the manufacture of products. Mr Tobin (applicant) confirmed that trials are currently taking place on the development of a soil restoration medium which would include IBA as a constituent. Once the trials were successful an End-of-Waste (EOW) application would be made to the EPA, a process which could take up to a period of 2 years.

The applicant's submission to the oral hearing noted the complexity of the material and while its use for roadbuilding in the US, EU and UK, its use is not standardised and a common approach to its re-use has not been adopted anywhere in the EU. End-of-waste decisions require considerable research to ensure that the material does not pose a risk to the environment and human health. It is a lengthy process and decisions are made on a case-by-case basis. Until such time as end-of-waste certification has been achieved, some of the material will continue to be used for landfill engineering purposes such as road building on the site, which is a recovery use.

The proposed construction of a dedicated IBA facility for the weathering and storage of IBA until recovery outlets and the regulatory mechanism facilitating its recovery are established is consistent with Policy E2 of the waste plan. The Regions support this proposal stating that it would provide a domestic outlet for this material, supporting the self-sufficiency and proximity provisions of the Waste Framework Directive. The proposal will help to start the recovery process for IBA in accordance with the principle of the circular economy and the retention of the material in Ireland, as opposed to its export, accords with the proximity principle. I have therefore no objection to this part of the proposal.

Construction & demolition waste

Infrastructure is also required to provide disposal and recovery facilities for C&D waste. It is stated in the regional waste authority submission that there are few treatment options for non-hazardous C&D wastes, with non-hazardous landfill being one of the few options. Apart from the provision of new facilities to manage this waste, extending capacity at existing waste licensed facilities with capacity to expand, is identified as an alternative in the waste plan.

Knockharley landfill currently accepts C&D for recovery activities in accordance with the conditions of its licence (up to 25,000 tonnes of C&D waste per annum). Significant void capacity remains at Knockharley and it is the applicant's contention that it has the potential to accept C&D waste for both disposal and recovery, addressing the capacity issues that exist for this waste stream. I note that the Regions have not raised any objection to this aspect of the proposal.

The volumes of C&D waste generated annually varies and is influenced by the performance of the construction industry. The Regions recent quarterly report on waste capacity acknowledge that the capacity to treat inert C&D waste remains tight and that there is continued reliance on export. Reference was also made during the oral hearing to the recently published updated National C&D report[5] which projects that C&D waste could reach 10.1 million tonnes by 2029 in a high growth scenario. One of its recommendations is that additional disposal capacity is provided for this

[5] Construction and Demolition Waste-Soil and Stone Recovery/Disposal Capacity Update Report, 2020 RWMPO.

stream in the short to medium term to facilitate progress on key infrastructure under the National Development Programme.

Similar issues were raised at the oral hearing regarding the placing of this waste stream in the landfill when there are other options available. While there are other alternatives that may exist that would provide opportunities for re-use by achieving by-product/end-of-waste status, these involve complex regulatory mechanisms and are only achievable in certain circumstances[6].

I accept that the proposed development is acceptable in terms of addressing the identified capacity issues for the management of this waste stream. I also accept that the waste landscape has changed significantly over a very short period of time and while every effort should be made to repurpose this material, it will take time and significant Government intervention before circular economic principles are fully realised.

Contingency capacity

The EIAR also considers the requirement for contingency capacity, for foreseen and unforeseen events. The requirement for ongoing disposal capacity to be available in response to events which pose a risk to the environment, or human and animal health is recognised in the waste plan. The Joint Waste Regions Report states that the case for the provision for contingency capacity has been rising and that emergency measures have been implemented by local authorities through the enactment of section 56 of the Waste Management Act in order to quickly provide disposal capacity. The Regions recommend the provision of an annual contingency capacity of 44,000 tonnes per annum at the Knockharley facility.

There are also issues surrounding capacity for repatriated waste, waste from 'Class A' historic legacy landfill and waste from other illegal landfills. It is estimated that c.170,000 tonnes of waste requires repatriation from Northern Ireland, c.300,000 tonnes deposited in illegal landfills and c.400,000 tonnes to be excavated from Class A historic legacy landfills.

[6] Chapter 5 of Construction & Demolition Waste -Soil and Stone Recovery/Disposal Capacity.

The proposal to provide contingency capacity and capacity for the repatriation of waste from Northern Ireland is consistent with the policies of the waste plan (Policies E10, E12) and is therefore acceptable in principle.

Conclusion

The data presented in Table 4-12 of the EIAR indicates that there is an impending lack of capacity to manage the waste streams arising. The details of current and future landfill disposal capacity from the period 2017-2028 provided in Table 4-9 indicates that if the existing landfills operate in accordance with their current permitted capacity/expiry dates there will be only 120,000 tonnes per annum capacity nationally to cater for waste requiring disposal to landfill within the State from 2022. This is clearly inadequate to accommodate the waste streams that will require to be landfilled over the period and is based on projections which underestimate the waste arising.

The Joint Submission made by the Waste Regions recognise and support the need for continued, although limited, landfill capacity for inert, non-hazardous and hazardous waste. It also acknowledges that the proposed development is of national importance owing to limited capacity nationally for the management of residual waste.

The Regions have no issue with the overall tonnage of waste to be received per annum at the facility but recommend that the volume of MSW should be restricted to 188,000 tonnes per annum. The applicant's response to further information requested that this limit of 188,000 tonnes per annum be applied to 'black bin' waste only. In response to questions from the Inspector on this matter, Mr Coughlan stated that to ensure that the country is on the right trajectory to meet landfill diversion targets any waste classified as MSW must be counted in that 188,000 tonnes per annum cap. This is the approach adopted by the EPA, who are responsible for the submission of waste statistics to Europe.

He explained that the additional 100,000 tonnes per annum capacity would compensate for the reduction of capacity due to the closure East Galway facility.

Non-compliance with waste policies

The observers contend that the proposal to increase landfill capacity is contrary to EU and National waste policies in terms of the diversion of waste away from landfill.

While I accept that landfill is the least favoured option on the waste hierarchy, the Waste Region[7] accepts that in the absence of alternative management options, there will continue to be a requirement for landfill capacity for processed residual waste.

Major changes have occurred in the waste management sector over the last number of years. There has been a significant decline in available landfill capacity within the State with 3 no. facilities currently operational compared to 33 no. in 2008. These three operating landfills are located within the Eastern Midlands Waste Region (Knockharley, Drehid and Ballynagran). The decreased in landfill capacity has occurred without a corresponding increase in alternative waste management options.

The recently published Waste Action Plan for a Circular Economy[8] shifts attention away from waste treatment to re-use of resources and a reduction in single use items. In response to the issues raised by the HSE and other observers, the re-use of IBA material has not yet been validated by the EPA and accordingly it cannot be put to beneficial use as a valuable aggregate in the construction industry, in a manner employed in other countries. It would, therefore, appear reasonable to facilitate trails and storage until such time as it is established that this is environmentally safe for re-use. I note that the regional waste authorities consider that an initial timeline of 5 years be imposed on the acceptance of IBA for storage pending recovery, with the option for the period to be extended for a further period, which is considered reasonable.

While C&D waste can be used as aggregates or in the construction materials, there are considerations revolving around achieving by-product/end-of-life status which are likely to be challenging and the regulatory mechanism does not currently offer a meaningful contribution to the capacity issue. In the interim capacity is required for this material.

Proposal will extend the life of the landfill

The observers expressed dissatisfaction with the proposal on the grounds that it would significantly extend the life of the landfill. The current permission expires on 26th August, 2021 and the remaining void (c.1,627,431 m3)[9] will not be filled by that

[7] Eastern-Midlands Region-Waste Management Plan 2015-2021 (Chapter 16)
[8] A Waste Action Plan for a Circular Economy. Irelands National Waste Policy 2020-2025
[9] EIAR - Section 2.2.11

time. The reprofiling of the landfill will increase capacity by 217,000 m3. The provision of dedicated IBA cells will also increase capacity (1,424,709 m3). Permission is sought to continue to operate the landfill until it is full, with an indicative lifeline extending to 2025/6, which will ultimately depend on the rate of filling. It was also confirmed during the oral hearing that the density of material being deposited is increasing due to pre-treatment, which may extend the life of the land file by up to 15 more years.

Emissions from the landfill are currently managed by the EPA. While there have been odour complaints in the past, other emissions including those to air and water are largely in compliance with statutory limits/standards. Subject to the mitigation measures proposed to control nuisances including dust, odour and noise, I do not consider that the proposed development will result in significant impacts on local residents.

Conclusion

- The proposed development is of national importance due to the limited capacity nationally for the management of residual waste.
- The need for the development is endorsed by the regional waste authority and the proposed development is consistent with the policies of the Eastern-Midlands Waste Management Plan 2015-2021.
- I consider that the need for the development has been established. It has been demonstrated that there is an impeding lack of capacity across the State to manage waste streams that will arise. The facility at Knockharley has the capacity to address this deficit.
- The proposal supports the principles of self-sufficiency and proximity by providing outlets for waste that would otherwise be exported.
- I accept that the development provides a sustainable and integrated system for effective waste management that includes both disposal and recovery options in line with national, regional and local policy and is, therefore, acceptable in principle.

9.2. Landscape and Visual Amenity

Chapter 13 of the EIAR assesses the likely significant effects of the proposed development on landscape and the visual amenities of the area. This chapter should

be read in conjunction with the further information (Response to Query No 3) submitted by the applicant and supporting appendices.

The site is located in a generally flat and undulating landscape. It has a sloped topography which ranges from 70 mOD in the north west to 55 mOD in the south east. The landfill footprint is aligned approximately north-south through the centre of the site. Planting has been provided along the boundaries of the site to provide screening and a visual buffer between the site and adjoining dwellings.

Outside the site the main land use is agriculture with medium to large sized fields divided by hedgerows. There are some blocks of broad-leaved forest throughout the wider area. The site is located within a rural area with residential development largely consisting of ribbon development along the local road network. The closest settlement is Kentstown village located c 1.5km to the south.

Appendix 7 of the Meath County Development Plan 2013-2019 contains the Landscape Character Assessment. The site is located within Landscape Character Type LCA 6 - Central Lowlands. This LCA is designated as being of 'high' value and with 'medium' sensitivity to change. The EIAR (Table 13-6) identifies 8 no. protected views within 5km of the proposed development (Appendix 12 of the Plan).

In accordance with recognised practice a Zone of Theoretical Visibility (ZTV) was prepared to establish the extent of theoretical visibility of the site within the study area (Fig 13.3). It was also used to identify important receptor locations from which the site might be viewed and to determine viewpoint locations. Visual receptors are identified as centres of population and houses, transport routes and amenity/heritage locations.

The ZTV indicates that the greatest potential for visibility would occur within 5km of the proposed development and that the landfill site is indiscernible in the wider landscape. The proposed development is not within the visual envelop of any of the views designated in the development plan (Fig 13.4).

The EIAR (Section 13.4) considers potential impacts in terms of landscape character and visual impacts. The most significant changes that would occur as a result of the proposed development would be an increase in the height of the landfill, the provision of relatively large-scale industrial style buildings on the site, removal of existing woodland boundary planting and construction of soil berms.

The height of the landfill would be increased by 11m to 85 m AOD and other tall structures would be introduced into the landscape including the proposed biological treatment facility which would have a maximum height of up to 14.12m (70.8 m AOD) and stack of 20m (76.6 m AOD). The screening berms would range in height from 10m along the western and eastern boundary and 6m to the north.

To assess the visual impact a number of viewpoints (VP's) were selected for detailed assessment (Table 13-7) and the locations are shown on Fig 13.5 of the EIAR. Photomontages were produced to aid in the assessment of the impact of the development from these viewpoints. The viewpoints were largely informed by the ZTV with some additional viewpoints prepared to address concerns raised through the public consultation process.

The EIAR considers the impact on each viewpoint in terms of the sensitivity of the view and the visual magnitude (extent of visual intrusion created by the development) from the viewpoint location. Viewpoint sensitivity (high, medium, low), was determined by the number of residents/visual receptors in the vicinity. The overall conclusion reached is that post mitigation the visual impact of the development from the majority of these viewpoints will be largely 'Imperceptible'.

Issues raised during the course of the application and during the oral hearing

The main issues raised may be summarised as follows:

- Impacts of the development on the surrounding landscape and the visual amenities of the area.
- Impacts on protected views.
- Impacts on heritage sites.
- Impact of removal of woodland and trees.
- Cumulative impacts.

Assessment

Impacts of the development on the surrounding landscape and the visual amenities of the area

The main changes that will occur with the potential to impact on landscape and the visual amenities of the area include raising the height of the landfill by 11m, the provision of new buildings/structures and the removal of existing trees.

The original photomontages were considered substandard and clearer versions were submitted in response to the request for further information (Response to Query No 3). The viewpoints are in the same locations as the originals, with the exception of VP5, which is marginally more to the east to exclude the residence in the foreground. An additional viewpoint (VP10) is included showing views from the Hill of Skreen, as requested by the conservation officer of Meath Co Council. Details of the locations of the viewpoints are shown on the accompanying map (Appendix 1) and details of the distance to the existing/proposed development are provided in Table 1-1. The viewpoints are selected from the local road network in the vicinity of the site.

Viewpoints VP2, VP3 and VP6 assess the impact of the proposed development from the local road to the north of the site (CR384). At present views of the landfill are substantially screened from these locations by both existing vegetation and landform. Landfill operations will progress further to the north and closer to residential receptors, but within the original permitted landfill footprint.

With the exception of the removal of small sections of woodland to the north east to facilitate the completion of the permitted landfill footprint and the construction of a new berm, the remaining woodland to the north will remain in place. This will ensure that the existing visual buffer will be maintained, protecting visual receptors to the north.

The impact of the proposed development on receptors to the south is assessed in VP1 and VP5. These views are from Kentstown village and adjacent to the local national school. At present the southern section of the landfill, which is capped and restored to grassland is visible in the distance from the school. The landfill in this location appears as a taller element within the local landscape setting. It does not appear incongruous in the view. While I accept that the viewpoint sensitivity at the

school is rated ‘high’, I do not consider that the impact generated by the proposed development will be significant.

The main elements of the proposed development will be concentrated to the northern and eastern sections of the site, which minimises the potential for significant additional impacts to the south. Whilst elements of the new proposal may be discernible, the impact will be reduced by distance and the mitigation measures proposed including the design/colour of the biological treatment building and by the use of a grass cover to the IBA facility, similar to the existing landfill.

A significant amount of additional development will take place to the east side of the landfill. This will include the new biological treatment facility, leachate management facilities, IBA facility, electricity substation and the relocation of electricity lines. There are a number of houses located between the local road to the east and the landfill site, which increases its overall sensitivity.

The biological treatment facility building would be a tall structure and have greater potential to result in visual impacts than the other proposed structures. It is however designed to resemble a large agricultural building and will be placed on the lowest section of the site. It is proposed to retain existing planting, which together with proposed planting (semi mature ash) on the existing berm will mitigate its overall impact from nearby receptors. The building will not, therefore become a significant feature in views along the local road or from local residences. The leachate management facilities, which will be accommodated adjacent to the existing leachate lagoon are low level structures. They will not be located any closer to the dwellings to the east and will be buffered by intervening screening.

The IBA facility will form an additional elevated mound towards the north eastern section of the existing landfill. Some of the existing forestry will be removed to facilitate its construction, which has the potential to open up views into the site in the short-medium term. It is proposed to provide an elongated planted berm between the IBA facility and the road to the east. The berm will be constructed in the first phase of construction, which will mitigate impacts on visual receptors to the east. It is not considered that the relocation of a small section of an overhead electricity line (20 kV) with the confines of the site would not result in any significant effects on the visual amenities in this area.

From the west, views are assessed from viewpoints V7 and V8. From here the landfill is viewed at a distance and as a component of the existing landscape. From my observations along the local road to the west, the existing landfill is barely discernible in these views.

The proposal to increase the height of the landfill body from the currently permitted post settlement final contour height of 74mOD to 85mOD is considered objectionable by local residents. Additional site sections were submitted (Dwg LW14-821-01-P-0103-001 to 006) in response to further information to facilitate assessment of the proposal[10]. It is intended that the height increase would apply from the active landfill phase at the time of any grant of permission. It was confirmed by Mr Jim O' Callaghan (applicant) at the oral hearing that Cells 15 and 16, which have intermediate capping, will be finished to the existing permitted levels under the existing planning permission. The additional height will apply over Cells 17-28 and will be gradual and graded over these cells to encourage water run-off. The landfill will be completed consistent with the existing landfill with the northern section bedded in with screening. The final IBA facility will also be capped at 85mOD and its eastern side will also be planted.

As the increase in height will take place to the north of the site, it is not considered that there will be any significant impacts to the south and from Kentstown school. I accept the recognisable changes to the landscape character when viewed to the west of the site will be limited due to distance, significant planting and the proposed berm. The main impacts will be to the north and east. Having regard to the limited visibility of the existing landfill from visual receptors close to the site, the proposals to maintain existing forestry, to provide planting along the northern end of the permitted landfill and the eastern side of the IBA facility, and the provision of a planted berm to the northeast, I do not consider that the impact on the landscape character and visual amenities of the area will be significant.

The existing landfill and associated infrastructure on the site has altered the landscape character of the area. Based on my observations of the site, viewed both in close proximity and from a distance, the final capped section of the existing landfill

[10] It is stated in the response that the height of the existing landfill was shown to be higher on the originally submitted photomontages than as actually constructed. The revised cross sections submitted with the response contain the correct dimensions of the as-constructed landfill.

is well integrated and appears as an elevated mound within the wider landscape. Subject to the mitigation measures proposed by the applicant, I consider that the proposed increase in height can be accommodated without creating significant adverse effects on the landscape character and the visual amenities of the area.

Impacts on protected views

Viewpoint No 10 illustrates the impact of the proposed development from the Hill of Skreen, which is listed as a protected view of national importance in the development plan (View 47). Mr Robert Miles (Architectural Conservation Officer) commenting at the oral hearing, noted the importance of this panoramic view in terms of the Hill of Tara and its inclusion in the UNESCO World Heritage Site Tentative List. From this elevated position, there are panoramic views over the wider landscape and the existing landfill is not immediately discernible in this view. Mr Miles confirmed that the overall visual impact assessment was acceptable and that the development would be barely discernible in the protected view.

Although the overall height of the landfill will be increased and additional facilities provided, I accept that the impacts will continue to be mitigated by distance and the complexity of the intervening landscape. No additional impacts are predicted which would adversely affect this view.

As noted in the EIAR there are other views listed for protection in the development plan within 5 km of the site. These views are not orientated in the direction of the landfill site (Fig 13.4) and will not be impacted by the proposed development.

Impacts on views from heritage sites

Some of the observers raised concerns regarding potential impacts of the proposed development when viewed from heritage sites of international/national significance including Bru Na Boinne, the Hill of Tara and the Hill of Slane. The ZTV mapping indicates that the greatest potential for visibility occurs within 5km of the site and none of these sites lie within this range. The landfill is not visible even at very close range and the identified heritage sites will not be impacted due to distance and intervening landform.

Impacts of removal of forestry and trees

The EIAR identifies the removal of existing woodland boundary planting and the construction of soil berms as the main landscape impact associated with the proposed development. The Board will note from the existing layout plan (Dwg LW14-821-01-P-0000-002) that there are substantial areas of vegetation to the north, west and east of the site, which enclose the site and provide an effective visual screen. It is intended that some of these trees will be removed, but that restorative/new planting schemes will be carried out. Approximately 12.5 hectares of forestry will be felled and replanting and new planting of c.16.8 hectares is proposed.

The main areas of felling will occur to the west, with smaller sections to the north east and other pockets close to the site access. It is proposed to provide forestry restoration/new planting in these locations as shown on Dwg LW14-821-01-P-0050-003 submitted with the application. Once complete, the proposed replanting/new planting will replace existing screening around the site. A landscaping plan is provided in Dwg14-821-01-P-0050-12.

The observers questioned the justification for the removal of existing forestry, referring to the role they play in screening the development and in carbon sequestration. They contend that the compensatory planting proposed by the applicant is not comparing like with like as the mature trees will be replaced with young saplings. They also state that the proposal is in breach of the original planning permission which required a continuous buffer to protect local residents from the visual intrusion of the landfill.

The majority of trees would be felled along the western boundary, which I accept are less critical in terms of impacts on visual receptors and protecting the visual amenities of the area. In this area a band of the existing trees closest to the landfill will be retained with a berm constructed behind and adjacent to the western site boundary. It was confirmed by the applicant during the oral hearing that the berm is not necessary for screening but is being provided for soil management purposes within the site. The berm (Berm B) which would be up to 10m in height would be constructed over a period of 8 years as set out in the cut/fill phasing plan (DWG LW14-821-01-P-0050-011).

The felling of trees to the north east of the site would be more significant in terms of potentially opening up views of the site and proximity to visual receptors. However, it is proposed to construct this berm (Berm A) in the first years of construction which together with proposed planting will help to mitigate impacts in this location.

While I acknowledge the observers concerns regarding the removal of more mature vegetation and its replacement with younger trees, I consider the impact will be minimal having regard to the restricted visibility of the site and the proposal to continue to provide significant berm and additional planting. I also note that the compensatory planting will increase the overall wooded area within the site.

The role played by existing trees in carbon sequestration was raised by Ms Caroline Corrigan (Environment Department, Meath Co Council). She stated that trees take 15-25 years to reach maturity. She recommended that should the Board be minded to grant permission for the development, that a condition be attached requiring that existing trees be assessed to determine carbon capture, and that the quantity of newly planted trees should reflect the carbon capture capability of the existing trees. This may require that additional planting be carried out.

Cumulative impacts

Permission exists for a 3MW solar farm on the site. The panel arrays would be located towards the southern end of the landfill on the top of the cells that have been capped and reinstated. The majority of the proposed development will take to the north and east. I accept that the potential for in-combination effects is most likely from the south/south east and will occur regardless of whether the proposed development takes place.

Conclusion

- The existing landfill facility has altered the landscape character of the area. These impacts are highly localised and impacts in the wider landscape are negligible.
- The proposed development will introduce higher elements onto the site including changes to the landfill height and new buildings/structures to the east. Subject to the mitigation measures proposed, I considered that the landscape has the capacity to absorb the proposed development without

resulting in significant negative impacts on the landscape character and the visual amenities of the area.

- I accept that there will be temporary negative impacts associated with the removal of trees and that the benefits of replanting/new planting will not be seen initially. However, when taken in conjunction with the proposed berms, the proposals will continue to provide a significant visual buffer around the landfill facility.
- While the effects of tree removal will be greatest to the west these areas are at a greater remove from sensitive receptors and the road network. The retention of trees to the north and the provision of the berm to the north-east during the initial stages of the development will help to ensure that impacts on sensitive receptors are minimised.

9.3. Roads and traffic

Chapter 8 of the EIAR provides an assessment of the impact of the proposed development on roads and traffic. This chapter should be read in conjunction with Appendix 8.1 – 8.4 (Volume 3 of the EIAR), the response to further information (Response to Query No 2) and associated appendices.

The site is located on the west side of the N2, approximately 6km south of Slane and approximately 7km east of Duleek. The closest settlement is Kentstown located approximately 1.5 km to the south. The site is bounded to the north by the CR384 running east-west. To the east the site is bounded by the CR384 running north-south between the N2 and the R150. To the south, farmland separates the site from the R150 on the Kentstown side of the N2.

The site has dedicated access directly off the N2. The access road runs west from the N2 and then under the CR384 local road. The site entrance is located c.80-100 m west of the underpass. A ghost island on the N2 facilitates access for right turning vehicles travelling from the north and an auxiliary left turn deceleration lane for traffic travelling from the south.

Policy Context

The Meath Co Development Plan 2013-2019 (Section 6.10.8) refers to national guidance in relation to intensification of traffic from existing entrances onto national

roads outside the 60kph speed limit. The Guidelines provide that a less restrictive approach may be adopted to developments of national and regional strategic importance. The plan has identified the N2 at Knockharley in the vicinity of the existing landfill facility as a location where exceptional circumstances to the general policy may be considered.

Issues raised during the course of the application and the oral hearing

The main issues raised may be summarised as follows:

- The use of historic flow data as a basis for determining traffic assignment and distribution to and from the proposed development.
- Impacts on the capacity of the N2, on the existing site access and on junction performance on the national primary route.
- Impacts on the villages of Duleek and Slane arising from increased HGV traffic.
- Impacts on Kentstown village.
- Site access design

Assessment

Use of historic flow data as a basis for determining traffic assignment and distribution to and from the proposed development

Meath Co Council raised issues regarding the use of previous traffic surveys carried out in 2010, 2015 and 2016 to determine traffic assignment and distribution to and from the development site. The applicant's response defends the use of historic traffic data stating that it, together with more recent traffic flow data at the existing development site, assisted in determining representative development traffic generation characteristics for the assessment. It was noted that the use of historic flow data is also of assistance in evaluating fluctuations in the flow and composition of receiving network traffic and connecting regional and local roads.

In order to address the concerns raised and to assist in the assessment, additional traffic assessment and modelling was undertaken and details are set out in the response to further information document. Additional traffic surveys were carried out in May 2019 to supplement the information contained in the EIAR.

In his submission to the oral hearing Mr Joe Garvey S.E.E Transportation Department, Meath Co Council acknowledged the additional survey work and assessment and confirmed that the response was acceptable.

Impacts on the capacity of the N2, the existing site access and junction performance on the national primary route.

Meath Co Council raised issues regarding the impact of the proposed development on the site access, junction performance on the N2 and the overall capacity of the N2. Additional turning count data was collected on May 30th, 2019 for the site access junction and at Rathdrinagh Cross, O'Brien's Cross and Balrath Cross, which are used as haul routes for development traffic. The survey data and location mapping is provided in Appendix A of applicant's response. Network flow diagrams are provided in Appendix B. The traffic flow data from this survey forms the basis of the junction assessments.

The traffic survey data in May 2019 shows that the site generated 40 HGV trips (40 inward/40 outward) on that day, which is noted to be more than double the average based upon the current permitted tonnage (88,000) and the average payload of vehicles entering the site. It is assumed that this is indicative of a high fluctuation in the rate of materials intake on that date. The EIAR forecasts an average traffic HGV generation of 78 trips, which is double the surveyed traffic flow on May 30th, 2019.

Based on the comments from Meath Co Council on the five-fold increase in tonnage and to ensure a robust traffic assessment, the traffic assessment considers a forecast high generation rate of 200 HGV trips per day. This is considered to represent an extreme worst-case scenario in that it is almost 3 times the average calculated in the EIAR.

It is acknowledged that the N2 is the main route that will be impacted by the new development. The scope of the future year assessment focuses on the operation of the site access and the junctions on the N2 where development turning traffic occurs. A number of scenarios have been assessed both with and without the proposed development in place including the forecast Opening Year (2021) Opening Year + 5 years (2026) and the Design Year of 2036, which correspond to the assessment years identified in the further information request. The forecast traffic flows for each of the assessment scenarios together with the relative traffic

generation of the various existing and proposed developments are provided in Appendix 8 (Figure 8 to Figure 25).

The performance of the junctions during the AM and PM peaks was assessed using PICADY. Details of the capacity assessments for each of the four junctions is provided in Table 3-3 to Table 3-6 of the response. It has been demonstrated that Rathdrinagh (N2/L1013) and O'Brien's Cross (N2/R150) will operate within capacity for all assessment traffic flow scenarios. In both cases, the impact of proposed development traffic on the operation of the existing junctions is not significant, with minimal reduction in reserve capacity for turning movements.

In the case of Balrath Cross (N2/R153) the results of the modelling assessment show that the junction will operate within capacity for the Opening Year and for Opening Year + 5yrs, but that general traffic growth results in the junction would be marginally over capacity in the 2036 Design Year assessment. The arm to perform at about 0.81 RFC is the R153 (towards Kentstown). However, the right hand turn from the R153 to N2 is heavily subscribed in the morning with the corresponding left turn from the N2 in the evening commuter peak period. From the flow diagrams of Appendix B it is shown that existing and future development traffic at the junction turns left from the R153 to the N2 and turns right to the R153 on the return journey. Development traffic does not therefore contribute to the right turn from the R153 in the morning and does not impact on the operation of the junction. The reduction in reserve capacity associated with turning movements is not therefore significant.

With regard to the existing site access, the network flow diagrams (Appendix B) show that the volume of turning traffic is significantly less than the turning movements at any of the other junctions. The results of the modelling assessment (Table 3.6) confirms that the existing site access junction operates with a reserve capacity and will continue to do so over the lifetime of the proposed development.

The traffic modelling for the three scenarios suggests that the traffic arising from the proposed development will not have a significant impact on the operations of key junctions on the N2 and will not impact upon the turning capacity to/from the N2. The further traffic assessments based upon the AADT of the N2 for the three scenarios show that the forecast average increase in traffic arising from the proposed

development will be in the order of less than 1% and will be practically imperceptible to general users on the N2.

Mr Joe Garvey (Meath Co Council), in his response to the oral hearing on the further information submitted accepted that the traffic capacity assessment of the junctions appears robust and no particular issues arose.

Meath Co Council also queried the use of a threshold assessment as an appropriate method of assessing the traffic impact of the proposed development on the key national road junctions. In response the applicant noted national guidance[11] which recommends that a full traffic impact assessment should be provided where threshold values are exceeded. For uncongested road networks an increase in two-way traffic on the adjoining road of 10% is the appropriate threshold value. An increase of 5% or less in an uncongested traffic environment is typically not considered material. The traffic increase forecast in the EIAR shows an increase in the AADT on the N2 in the order of 1.0-1.1%, which is significantly sub threshold.

The additional assessments carried out in response to further information confirms confirms that that the traffic generated by the proposed development on key national road junctions and on the site access will not be significant.

Impact on Duleek village

Meath Co. Council raised concerns regarding the impact of operational traffic on the village of Duleek. A proportion of the IBA produced at the Indaver facility is accepted at Knockharley landfill. The material is transported via the R150 westwards towards the N2 and onwards to the landfill facility. The applicant's response states that based on the 2019 traffic surveys and the 2019 weighbridge data, the existing site currently generates an average of 5 HGV per day from the Indaver plant at Duleek, operating at its current capacity. This was confirmed by Mr Julien Kennan during the oral hearing.

Mr Keenan confirmed that there will be no additional traffic generated through the village of Duleek as a result of the proposed development. The proposed development will not alter the quantity of IBA produced at the Indaver plant. The the R150 is a designated haul route for the plant through the village to O'Brien's Cross

[11] Transport and Traffic Assessment Guidelines, NRA May 2014

and irrespective of whether the development proceeds or not, there will HGV's transporting IBA to other outlets.

Mr Keenan concluded that the proposed development impacts can be categorised as neutral with respect to traffic on the R150 and through Duleek since the traffic from the Indaver plant is already on the road network and using the R150 route. Mr Joe Mc Garvey (Meath Co Council) confirmed to the oral hearing that he accepted this position.

Mr Paul Connell (observer) referred to a current application for the Indaver facility which was lodged with An Bord Pleanala in June 2019. The proposal is to increase the annual intake of hazardous waste from 10,000 tonnes to 25,000 tonnes and to increase the overall tonnage from 235,000 to 250,000 tonnes. Mr Connell stated that the increase in waste intake would increase the volume of IBA arising and requiring transport off site.

Due to timelines this application was not considered by the applicant in the EIAR. Any potential additional impacts on the R150 and Duleek village which may arise as a result of the proposed development at the Indaver plant will be fully assessed with that application.

Impact on Slane

In response to the planning authority's request, the applicant assessed the potential impact of the proposed development on traffic through Slane village. The May 2019 traffic survey recorded 1184 HGV (two-way north of Rathdrinagh Cross) between 07.00-19.00 hrs. From a review of weighbridge data trip origins (Jan-Jun 2019) it is estimated that the current average traffic generation from north of Rathdrinagh Cross and potentially through Slane is 3-4 vehicle trips per day, representing 0.9% of current HGV traffic.

Appendix B Figure 5 shows the forecast average daily increase arising from the proposed development to the receiving network and forecasts a potential increase of 11 HGV trips per day through Slane. This would give rise to a relative increase in HGV on the N2 in Slane between 07.00-19.00 hrs of 1.8%.

Mr Joe Garvey, stated that Meath Co Council had concerns regarding the increase in HGV traffic arising from the development due to the capacity constraints (steep approach road gradient, major intersection, narrow carriageway) on the bridge and

potential road safety risks that exist in the village. He referred to the refusal by An Bord Pleanala for a by-pass scheme in 2012 and noted that Meath Co Council and the TII have carried out a number of studies looking at traffic management alternatives through Slane aimed at reducing the number of HGV's crossing the bridge and travelling through the village. The outcome of these studies concluded that traffic management options would not satisfactorily address the particular circumstances in Slane or provide comparable alternatives to a by-pass.

Mr Garvey stated that Meath Co Council have commenced work on the preparation of a new application for a bypass and support is being provided by the TII to do so. He stated that any development that would result in significant numbers of HGV's passing through Slane should not be permitted.

In response Mr Julian Keenan, on behalf of the applicant, stated the site has been in operation for the past 15 years. He confirmed that he has been involved in the site from that time and has vast amounts of traffic data (10 counts) and weighbridge data which show that the site has never generated traffic of any significance through Slane. The volume of traffic generated has always been in single digit figures. He noted the results of the 2019 traffic survey which recorded 7010 two-way traffic through Slane, of which 1151 were HGV. The low volume of HGV's associated with the landfill would not be perceptible.

In response to Meath Co Council's concerns regarding the reference to the potential generation of 11 HGV trips per day through Slane, Mr Keenan stated that the figures shown in Figure 5 of the response are upper value traffic assessment figures (200 HGV trips) that are more than double the average daily traffic generation (78 HGV trips). The forecast 'average' increase in HGV traffic through Slane would be double the current, from 3 HGV to 7 HGV trips per day. In terms of total traffic flow or AADT the forecast combined increase in car and HGV traffic arising from the development equates to 0.7%. Mr Keenan concluded that the impact of development traffic on Slane is not likely to be significant and that no specific mitigation measures or re-routing of traffic is warranted.

Mr Kennan also noted that the TII have raised no objection to the development given that it is a strategic infrastructure development. The TII would have considered the totality of the network including Slane. He also referred to the most recent project

assessment guidelines published by the TII [12], which forecast that based on central growth rates for the primary road network for this part of Co.Meath, by 2026 there would be a 28% increase and by 2036 a 62% increase in HGV traffic. If there are 1151 HGV's currently passing through Slane, a 60% increase is in the region of 700 HGV. In the context of what TII have forecast, the impact of HGV traffic associated with Knockharley (7 No.) would therefore be negligible.

Mr Joe Garvey concerns were that the application in its current form does not restrict traffic volumes through Slane. Given the nature of the development, which is demand driven, there could be multiples of what is forecast. He recommended that should the Board be minded to grant permission that the applicant be required to product an operational traffic management plan so that agreement could be reached regarding haul routes etc, which would provide some level of control on vehicles travelling through Slane.

Mr Kennan did not consider that such a plan was warranted on the basis of the low levels of traffic traditionally generated by the site through Slane, a scenario which he said will continue to prevail.

Impacts on Kentstown village

Many of the observers have raised issues regarding the impacts of increased landfill traffic on Kentsown village arising from the proposed development. Condition No 7 of the parent permission for the site (PL01/5006 and PL 17.125891) prohibits traffic directly associated with the landfill from travelling through the village. The condition was imposed in the interests of traffic and pedestrian safety and to protect existing educational and recreational facilities associated with Kentstown.

Mr Keenan addressed this matter by referring to the traffic flow data (May 2019) contained in Appendix B of the further information response. Figure 1 (Weekday Daily Traffic Flows 07.00-19.00 hrs) shows that traffic flows along the R150 are predominantly east west/west east through O' Brien's Cross. The number of HGV's turning left (north) was 8 per day and 13 in the opposite direction which is very low. He said this was not landfill traffic and was most likely to be associated with the Rathdrinagh facility, which is not prohibited from using the R150 west of the junction.

[12] Project Appraisal Guidelines for National Roads Unit 5.3 Travel Demand Projections (TII, May 2019.

He also noted that traffic surveys conducted in 2010, 2015 and 2016 indicate similar traffic flow patterns.

In response to questions from Mr Harry Hall regarding measures used to prevent use of this section of the R150 by landfill traffic, Mr Keenan noted that all HGV's are fitted with GPS monitors which increases the ability to control and monitor driver movements. He confirmed that the applicant would welcome a similar condition prohibiting traffic on the R150 in the vicinity of Kentstown should the Board be mined to grant permission for the development.

Site access design

Issues were raised by Meath Co Council regarding the design of the existing site access junction and compliance with current design standards. Clarification was sought that the junction meets with the relevant TII Standard DN-GEO-03060 'Geometric Design of Junctions' or to identify changes required to ensure the junction layout complies with this standard.

In response, the applicant states that the original planning permission for the site included works to construct a new entrance layout, new access road and road widening of the N2. The access geometry was scrutinised by Meath Co Council and the NRA at the planning stages. The layout was agreed at detailed design stage before the junction was constructed and again before the landfill opened in 2004. It was designed and constructed in accordance with the NRA's Design Manual for Roads and Bridges which was the relevant design standard at the time and subsequently superseded by TII DN-GEO-03060. The access was subject to independent Stage 1, 2 and 3 Road Safety Audits in accordance with NRA standards.

The response to further information (Table 4-1) compares the existing design with current standards. With the exception of one design parameter relating to auxiliary left turn lanes, the design parameters have not changed since the junction was designed and constructed. The more recent standard requires that left turn auxiliary lanes should not be provided. However, as noted in the response, all of the other junctions which were identified by Meath Co Council for inclusion in the traffic assessment have left turn auxiliary lanes. It is not proposed to remove the lane

associated with the junction in order to maintain consistency along this stretch of the N2 and not to confuse drivers.

The applicant states that the right and left turning lanes at the site access help to reduce delays and to maintain the carrying capacity of the national road. There have been no traffic collisions or accidents associated with the access and no accidents associated with traffic generated by the site on the wider network.

In addressing this matter at the oral hearing, Mr Joe Garvey accepted the applicant's response but noted that a Stage 4 operational stage audit of the access was not completed. He recommended that this should be completed to ensure layout is in accordance with recommendations. He stated that this may require additional lining and making sure signage is adequate and correctly positioned.

In response Mr Keenan noted that there is continuous monitoring of the operation of the junction and he had no objection should the Board be minded to impose such a condition.

Other matters

During the oral hearing Mr Paul Connell questioned why there was no consideration of impacts on Kilmoon Cross, where congestion and long tail backs occur at peak times. He stated that Poolbeg is a significant generator of IBA which would be transported from Poolbeg through Kilmoon Cross to the site.

It was clarified in the response to further information that traffic data was not collected for the N2/Kilmoon Cross junction as it is not used as a haul route. No development generated HGV traffic turns to/from the R152 at Kilmoon Cross, it travels along the N2 mainline.

Mr Keenan referred to the information contained in the EIAR and the response to further information, which confirms that the increase in traffic generated along the section of the road between Kilmoon Cross and the site would be less that 1% (0.85%) which is not significant and will not impact on this section of the road. He referred to the traffic flow data contained in Appendix B which includes details of traffic generated in the AM/PM peak hours. Figure 6 shows 4 no HGV's travelling from the Dublin direction to the landfill site and 4 No HGV's travelling in the opposite direction during the AM peak. During the PM commuter peak (Fig 7) no traffic will be

generated from the to/from the site. This confirms that the impact of HGV on this section of the N2 will not be significant. Mr Keenan also noted the TII proposals to improve the section of the N2 north of Ashbourne to Kilmoon Cross, which is acknowledged to have major delays and long tailbacks during the AM and PM peaks.

Conclusion

- I consider the traffic assessment carried out in the EIAR and the further information response addresses the issues raised by the planning authority and is comprehensive and robust.
- The TII have raised no objection to the proposed development. It was satisfied with the scope of the initial traffic analysis carried out in support of the application and has no objection to its findings in terms of potential impacts on the capacity, safety and efficiency of the national road network.
- I consider that it has demonstrated that the traffic generated by the proposed development can be accommodated on the adjoining road network and will not impact on the capacity, efficiency and safety of the N2 and on key junctions on the network.
- I consider that it has been demonstrated that the proposed development will not result in increased landfill traffic through the villages of Duleek.
- Meath Co Council continue to have concerns regarding potential impacts of increased traffic on Slane village and recommend an operational traffic management plan to address this issue, which I consider is reasonable.
- The applicant has confirmed that landfill will continue to be prohibited from travelling through Kentsown village and will not result in increased impacts on the amenities of the village. I consider that it would be appropriate to attach a condition to that effect.
- It has been demonstrated that the existing site access junction has been designed in accordance with recognised parameters and has the capacity to accommodate the traffic associated with the proposed development without impacting on the capacity of the N2 or road safety.

9.4. Impacts on Human Health

The impacts of the proposed development on human health are discussed in Chapter 6 of the EIAR. Human health interacts with many other aspects of the environment including air, noise, surface water, ground water and soil, which are addressed in the respective chapters of the EIAR.

Issues raised during the course of the application and during the oral hearing

The main issues raised may be summarised as follows:

- Impact of bioaerosols from the biological treatment facility
- Acceptance of stable non-reactive hazardous waste
- Impacts associated with IBA storage including hydrogen gas production and the presence of heavy metals
- Impact on health from particulate airborne material

Impact of bioaerosols from the biological treatment facility

Biological treatment system emissions are discussed in Chapter 7 Air & Climate. It is acknowledged that potential emissions from the biofilter will include bioaerosols.

The EIAR refers to 2 no. reports which have been prepared to assess the risk of bioaerosols from waste composting facilities. The reports conclude that there was a general trend of rapidly decreasing bioaerosols with distance and that concentrations 50m upwind of a facility are within typical background levels. There was also little evidence that compost facilities have a major contribution to the overall bioaerosol concentrations at a distance of 250m from activities. The EIAR also refers to reports published by the UK Environmental Agency and by the Composting Association of Ireland and funded by the EPA (Cre, 2004), which also refer to the setback distance of 250m.

The proposed biological treatment plant will be located 346 m from the nearest residential receptor which is outside the recommended setback distance. The design of the building (all operations carried out indoors, building operated under negative pressure, air handling system and fast closing doors) is such that bioaerosol emissions will be minimised to the point source emissions from the biofilter.

Having regard to the set-back distance which is in accordance with recommended guidance and the design of the facility and the measures proposed to contain emissions, I consider that there is little evidence to suggest that significant effects will arise on human health from the release of bioaerosols from the proposed biological treatment facility.

Acceptance of stable non-reactive hazardous waste

During the oral hearing the observers raised concerns regarding the unspecified hazards associated with the placement of stable non-reactive hazardous waste in the landfill. In response Mr O Callaghan (applicant) confirmed that under the provisions of the Landfill Directive 1993/31/EC the landfilling of certain hazardous waste in a non-hazardous was acceptable, provided the wastes are stable and non-reactive. These wastes would not undergo any significant change when deposited and would have the same leachate characteristics as non-hazardous waste. The waste will be stored in similarly designed cells to recognised specifications and standards and will not pose additional impacts on the environment and on human health.

Impacts associated with IBA storage including hydrogen gas production and the presence of heavy metals

Hydrogen gas will be released from IBA during the weathering process. It is not detrimental to the environment and the greatest risk is associated with explosion. While I note that the initial weathering process will take place within a covered area, it will be well ventilated. The building will have no gables, perforated side sheeting and roof ventilation to reduce the risk of explosive conditions developing. All hydrogen gas produced during the weathering process will be vented to the atmosphere.

The observers have concerns regarding the presence of heavy metals in the IBA that will be stored on site. IBA is the solid residue that remains after the incineration of waste in a waste-to -energy plant and it contains quantities of ferrous and non-ferrous metals and other materials. It is classified as non-hazardous and will be stored in in cells which are designed in accordance with the Landfill Directive 99/31/EC for non-hazardous wastes. Subject to compliance with these requirements

and the management of leachate arising, the storage of this waste will not generate any additional environmental or health impacts.

Impacts on health from particulate air borne material

There is potential for emissions to air associated with the construction and operation of the landfill, which have the potential to impact on human health. The main airborne emissions with the potential to impact on human health are vehicle emissions, dust/particulate emissions, landfill gas utilisation emissions, process emissions and odour emissions. These are discussed in more detail in the following section of the report.

Conclusion

There is no evidence that the operation of the landfill is resulting in significant impacts on human health in the area. The proposed development will introduce new waste streams, which subject to compliance with the requirements of the Landfill Directive and the EPA, and the mitigation measures proposed will not result in any additional environmental impacts or impacts on human health.

9.5. **Impacts on air quality**

Chapter 7 of the EIAR and supporting appendices are relevant in the consideration of potential impacts arising from the proposed development on air quality and climate. This chapter of the EIAR provides a description of the receiving environment, the proposed development and identifies the sources of emissions likely to give rise to potential effects during each phase of the development. It details the methodologies used in the assessment and compares the results with relevant air quality standards and limits.

Issues raised during the course of the application and during the oral hearing

The main issues raised may be summarised as follows:

- New sources of odour from IBA, biological treatment plant and increased intake of waste.
- Dust and other landfill emissions
- Impacts associated with the acceptance of waste from illegal sites, the content of which is unknown.

New sources of odour from IBA, biological treatment plant and increased intake of waste

Many of the observers expressed concerns regarding odour emissions from the existing landfill, which may be exacerbated by the proposed development. The concerns relate to potential odour from the IBA plant, the biological treatment plant and from the increased volumes and types of waste that would be accepted at the facility.

There is no odour associated with handling of IBA. The biological treatment will process residual MSW fines using aerobic biological treatment. Potential emissions will include ammonia, hydrogen sulphide and bioaerosols. The plant will be designed so that all activities associated with the composting process will be carried out indoors under negative pressure and emissions will be treated in an odour control system installed in the plant. These emissions will be discharged to the atmosphere via a 20m high stack which will enhance dilution and dispersion.

Dispersion modelling was carried out as part of the assessment to assess the levels of exposure and to evaluate odour risk from the plant at receptor locations to the north and east of the site. The results of the modelling indicates that the predicted odour exposure is below the significance criteria (Table 7-26 of the EIAR) and that the emissions from the biological treatment facility are not predicted to pose any risk of impact within or outside the facility.

It is accepted in the EIAR that the greatest potential for odour emissions arises from the landfilling operations on the site. The observers understandably have concerns that if the volume of waste accepted at the landfill increases that this will impact on odour levels in the vicinity. Dispersion modelling was carried out to assess the implications of the development of the landfill over its operational life and this was compared to a ‘do-nothing’ scenario if the development did not go ahead. The EIAR details the various scenarios considered and the outputs of the dispersion modelling (Fig 7-7 to 7-9).

A review of the current baseline impact isopleth indicates that the area of land that is exposed to odours above the risk threshold includes 12 no. properties to the north and east. The odour modelling, which is stated to be based on a worst case scenario, predicts that the proposed development will have a beneficial effect on

current odour emissions, due to enhanced capping and the stabilised nature of the waste. The number of dwellings potentially exposed to odour levels that exceed the threshold fall from 12 no. under current conditions to 4 no. in Year 4 of the development. This rises to 6 in Year 6 as development progresses in a northerly direction and while the landfill remains operational.

The impacts of odour on the local community were raised by many of the observers during the oral hearing. The expressed concerns regarding impacts on their daily lives, on children attending the local national school and on the overall amenity of the area. In response, Mr O Callaghan, on behalf of the applicant acknowledged that there were issues in the past but that the level of complaint had significantly reduced. This he attributed to the roll out of the brown bin, the requirement to pre-treat waste and the resultant reduction in odourous waste accepted at the landfill. He also stated that there were issues with the gas management system management which had contributed to odours and these had been satisfactorily resolved.

I do not consider that the proposed development is likely to have any significant additional impacts on Kentstown N.S which is located to the south of the facility. The landfilling operations will progress northwards and as shown in the modelling exercise the risk of any additional impacts will be experienced at properties to the north, although in reduced numbers.

With regard to receptors to the north, I note that in terms of mitigation it is proposed to develop a second active landfill face to the north. This will accommodate stabilised and inert waste with less potential to generate odour and landfill gas. This new face will progress in a southerly direction, providing a barrier and increasing the separation distance between the landfill and residential properties. It is also proposed to retain the existing forestry plantations to the north of the landfill footprint which will also act as buffer. To the east the new IBA cells, new berm and planting will provide a buffer between the landfill and receptors to the north-east.

The number of leachate storage tanks will be increased as part of the development. The additional leachate will be stored within covered tanks/lagoons and is, therefore, unlikely to cause any off-site impact.

Dust and other landfill emissions

The observers raised issue regarding the potential impacts of dust associated with the proposed development. The construction phase of the development will involve earthworks, construction and trackout associated with the development of the IBA facility, biological treatment plant, leachate management facilities, surface water management, felling of trees to facilitate construction of berms etc. These activities will involve the use of heavy machinery with the potential to create dust and PM10.

The operational phase will involve vehicles moving around the site associated with the continued operation of the landfill and the deposition of waste and IBA material. However, these activities will not be of the same magnitude as those required during the construction stage.

The existing development has a number of static dust and PM10 monitoring points in and on the periphery of the site. In the period between 2013-2018 there were 2 exceedances of the dust levels of 350mg/m3/day and no exceedances of the PM_{10} 50µg/m3 limits

In accordance with good practice, a full risk assessment was carried using the IAQM methodology, to assess the impacts on sensitive receptors. It assessed the potential impacts of the development in terms of dust (soiling) and PM_{10} (human health). The risk of impacts is determined by combining the dust emission magnitude of activities with the defined sensitivity of the area (based on the number of receptors and proximity to construction activities). The methodology is described in full in the EIAR (Section 7.4).

The overall conclusion reached is that the risk of dust soiling and impacts on human health from PM_{10} were low. This is due to the low sensitivity of the area (less than 10 no. sensitive receptors within 100m of construction activity) and due to the buffer provided by existing forestry to the north and east of the site. As the activities with the potential to generate dust and PM10 during the operational stage will not of the same magnitude, the risk is also assessed as low.

The potential for high levels of dust associated with the storage of IBA was also raised. IBA will be stored on the site in five newly constructed cells. The main potential for dust emissions arises during the construction of these cells. During the operational stage, IBA will be transported in sealed containers to prevent windblown

dust. Upon arrival on site, the material will be tipped and stockpiles will be dampened. Weathering will occur under cover and will be handled at an appropriate moisture content to prevent dust emissions.

The EIAR sets out a suite of best practice measures that will be implemented to ensure that the potential for dust is minimised during both phases of the development. This includes implementation of a dust control plan which will form part of the CEMP. The measures will include controls on vehicle speeds on the site, water browser to spray haul roads/work areas, cleaning of site/ public roads, wetting down of soil stockpiles during dry periods, replanting of earthen berms immediately following construction, use of wheel wash by all vehicles leaving the site, recording of dust complaints and dust monitoring will continue in accordance with the IE licence.

Subject to the implementation of these measures, which are standard best practice, I do not consider that the proposed development will result in significant dust emissions, which would impact adversely on sensitive receptors.

With regard to emissions associated with the landfill gas flares and utilisation engines, the modelling indicates that predicted emissions are in compliance with statutory limits and standards and that there will be no significant impacts on human receptors. A biofilter will remove dust generated by the biological treatment facility preventing any release to the atmosphere.

Impacts associated with the acceptance of waste from illegal sites

The Waste Regions require that contingency capacity be maintained at the facility to cater for emergency situations. The observers have concerns that as the content of this waste would be unknown, there is potential for odorous material to be placed in the landfill. There is reference in the report by Meath Co Council to increased levels of complaints associated with the acceptance of waste during the remediation of the unauthorised landfill in Timoole.

This matter was addressed by Mr O Callaghan, on behalf of the applicant, at the oral hearing. He confirmed that the material from Timoole was deposited in the Knockharley Landfill facility between January and March 2018 and only one complaint in relation to odour was received. He stated that in accordance with the

requirements of the EPA, a large amount of cover material was applied due to the wet nature of the waste. This would have mitigated potential odours.

Mr O Callaghan also stressed that in normal circumstances only 21,000 of the 65,000 tonnes per annum of biodegradable waste capacity sought would be landfilled. The remainder (44,000 tonnes) would be reserved as contingency capacity as required by the Waste Regions. He noted that the odour assessment (which also considered increased landfill gas generation) is based on 65,000 tonnes of odorous waste being deposited which is a worse scenario.

I accept that the acceptance of waste of unknown origin has the potential to generate odours which have the potential to impact on sensitive receptors and these impacts will only be effectively mitigated if proper management and control procedures are in place.

Conclusions

- I accept that the EIAR provides a comprehensive assessment of the potential significant effects of dust, odour and other emissions from the proposed development.
- I accept that subject to the mitigation measures proposed significant effects on air quality from dust, PM_{10} and emissions from the gas utilisation plant or the biological treatment plant are not likely to arise.
- I accept that odour is an inevitable consequence of the landfilling of waste which must be manged effectively to reduce potential impacts on sensitive receptors. The Odour Management Plan for the facility will be updated for the proposed development and submitted to the EPA for approval. The recommendation that the applicant to conditioned to install E-Nose technology or equivalent odour monitoring technology at locations within and external to the site is a matter for the EPA and lies outside the Board's remit.
- I accept that the proposal to accept increased quantities of stable, inert, non-biodegradable waste will minimise the odour potential of the landfill. This, together with enhanced cover materials, the creation of a second active face the maintenance of the existing forestry, which acts as buffer, will help to reduce the potential risk of additional impacts.

9.6. Noise & Vibration

Chapter 9 of the EIAR provides an assessment of potential noise and vibration impacts arising from the proposed development, for both the construction and operational phases. It describes the assessment methodology and relevant guidance in the form of noise standards and technical advice. The site currently operates under licence from the EPA, which sets noise emission limits and monitoring requirements. Appendix 9.1 (Volume 3) provides details of receptor locations.

The noise sources around the site are described in the EIAR as typically rural with more noticeable traffic noise from the N2 to the east. Quarterly noise monitoring is ongoing in accordance with the IE licence and is undertaken at four boundary locations (N1, N2, N3 and N4) to the north and east of the site. The locations of the monitoring points are shown on Drawing No LW14-821-01-P-0050-001 in Volume 4 of the EIAR. The monitoring data provides details of historical noise levels associated with the existing facility and the receiving environment.

Under the conditions of the EPA licence, a daytime limit of 55 dB(A)L_{Aeq} (30 minutes) and night-time limit of 45 dB(A)L_{Aeq} (30 minutes) applies. In the period 2015 to Q3 2018 there were no exceedances of the daytime limit at the facility (Table 9.7). An an updated licence will be required for the new development and in line with NG4 [13], a new evening period (19.00-23.00) will form part of the updated licence.

Issues raised during the course of the application and the oral hearing

The issues revolve around potential increases in noise associated with the increased level of activity that will take place at the landfill. It is questioned how noise levels will not exceed the thresholds and whether noise modelling considered both the existing and the proposed development. Other concerns raised relate to the continuous 24 hour operation of the landfill gas management system and the biological treatment plant. There are concerns that the larger footprint will bring the development closer to the boundaries with a greater impact on the surrounding areas and that the impacts of vibrations have not been considered.

[13] Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities (NG4), EPA 2016.

Assessment

Construction noise impacts were assessed using British Standard *BS 5228-1: 2009 +A1: Code of Practice for Noise and Vibration Control on Construction and Open Sites- Part 1 Noise'*. In accordance with the guidance contained in BS: 5228-, the nearest residential dwellings to the proposed development are afforded Category A designation (65 dB LAeq, 1 hr during daytime periods). Should the modelled total noise level (including construction noise and operational noise) exceed the 65 dB LAeq, 1 hr during daytime periods, then a potential significant effect is predicted.

The EIAR provides details of the predicted noise level for each assumed element of plant/machinery and predicted noise level associated with each construction activity (cell construction, construction of buildings, leachate management facility, leachate lagoon, attenuation pond and wetland) for the worst-case scenario (Table 9.8 to Table 9.11). In addition to on-site construction work, the construction of some elements of the proposed development will lead to construction related traffic.

Predicted noise levels are calculated for the nearest occupied dwelling and conservative assumptions were made regarding the operating time of mobile and other plant, separation distances between plant and sensitive receptors and the acoustic nature of intervening ground to ensure that the model is robust.

The cumulative construction and operational impacts were assessed, and in all cases the predicted noise levels are below the construction noise limit of 65 dB LAeq, 1 hr derived from BS5228-1.

During the operational of the facility there are also many noise sources which include the delivery of waste to the facility, the transportation of waste around the site, waste placement, placement of daily cover/ intermediate cover and final cap, construction of cells, leachate management system and landfill gas engines and flares. There will be new noise sources associated with the proposal including an increase in the delivery of waste material to the facility, activity at the biological treatment facility, an increase in the transportation of waste material around the facility, IBA handling and placement, construction of berms and tree felling.

Noise modelling was carried out to predict noise levels associated with stationary or minimal movement sources as well as on-site traffic movements according to International Standard ISO 6313-2: 1996 *Acoustics-Attenuation of sound outdoor-*

Part 2: General Method of Calculation and using Bruel & Kjaer Predictor software. All significant noise sources and propagation effects were accounted for in the model.

Each of the potential noise sources on the site were identified and reference sound power data or sound pressure level data assigned. The potential noise sources with each activity and from traffic movement is described in detail in the EIAR (Table 9.12 to 9.21). The model was used to predict operational noise levels at 72 no. receptor locations and these were assessed against the expected operational noise criteria described in Section 9.4.2 of the EIAR, to include a new evening period in line with NG4. A number of different scenarios were modelled (Section 9.6.2) to ensure that the worst case at various different stages throughout the lifetime of the development were considered. The noise levels are stated to be the maximum predicted noise levels and not likely to be achieved in practice, representing a worst-case scenario.

In general, the predicted noise levels are below the daytime noise limit in the licence (55 dBA). There are 2 no. scenario's where the predicted noise level are above the daytime noise level at 2 no. noise sensitive receptors (ground floor level). One of these receptors is within the landownership boundary. In addition, scenario 3a shows predicted noise levels above the daytime noise level at 2 no. receptors at first floor level. However, as noted in the EIAR the noise predictions assume worst-case scenario in terms of distance from the plant to the nearest noise sensitive locations and simultaneous operation of activities. In practice not all activities will occur simultaneously, and it is likely that activities may occur more intermittently than was modelled and the noise impact from the proposed development will be lower than the predicted levels presented in the EIAR.

The ground floor exceedances are stated to be predominantly due to the construction of nearby earth berms, which are being installed to mitigate against any future potential impacts from the proposed development. The average duration of construction associated with the berms is estimated at 2-3 weeks, but may be over a longer period. Once the construction of the earth berm activities that are close to the noise sensitive locations cease, the noise emissions from the rest of the proposed development will be below the daytime noise limit. It is expected that the maximum noise levels predicted will be for a short duration and given the positive impacts the earth berms will have on noise sensitive locations, the short-term negative impact is considered to be reasonable. The first floor exceedances are associated with tree

felling which will occur over a short period and the maximum noise levels predicted will therefore be short.

During nigh-time periods, waste placement activities and ancillary works cease and static plant such as pumps and blowers in the biological treatment facility and the landfill gas plant will remain operational. These sources were modelled and assessed against the evening and night-time noise limits. A single scenario was modelled.

Table 9.25 and Table 9.26 present the predicted noise levels during evening and night-time periods at ground and first floor levels. The predicted noise levels are below the evening and night-time noise as per the IE licence and no significant effects are predicted. This addresses the concerns raised in the submissions regarding noise associated with the 24-hour operation of biological treatment facility and landfill gas plant.

There will also be noise generated as a result of increased traffic on the N2 and on the dedicated access route. The predicted noise from traffic was modelled using CRTN [14]. It is noted that in 2016 the N2 had an AADT of 8, 812 with daily HGV traffic at 1,022. The conclusion reached in the EIAR is that when the predicted operational traffic flow is added to the existing baseline traffic flow, the baseline noise level shows a negligible increase in predicted traffic noise.

All waste management activities associated with the existing and proposed development and on site HGV movements were considered in the noise model, therefore cumulative impacts from the site's activities have been considered. While there are other facilities in the area with noise generating potential, none are close enough to the landfill to generate cumulative noise impacts.

In order to mitigate potential impacts on noise sensitive receptors, a range of best practice measures are proposed. During the construction phase these will include limiting construction and traffic movements along access routes to normal working hours, measures to reduce noise (use of machinery/plant with low vibration emissions, proper maintenance of plant/machinery, locate equipment as far as

[14] Calculation of Road Traffic Noise (CRTN Department of Transport Welsh Office, HMSO 1988

possible from sensitive receptors etc), appointment of representative responsible for matters relating to noise/vibration, noise monitoring at noise sensitive locations during critical periods etc. The mitigation measures will be incorporated into the Construction and Environmental Management Plan (CEMP).

During the operational stage of the development, it is predicted that there are 3 no. scenario's where noise levels are above the daytime limit. These exceedances which are attributable to tree felling and construction of berms, will be temporary and short term in duration and ultimately serve to protect the noise sensitive locations in the long term. To mitigate short term effects mitigation measures will be employed to reduce potential effects on receptors. In addition to the measures to be employed during construction, noise impacts will be reduced by erection of temporary noise barriers, careful orientation of plant, planning of construction stage to start closest to receptor and building away to mitigate potential ongoing berm construction noise impacts, regular monitoring of noise levels and investigation of complaints.

The berms once constructed will mitigate potential impacts. Berm A will be constructed first due to the long-term positive impact for receptors to the east and north-east. The programme for constructing/filling cells was developed to minimise noise impacts where possible. Filling of cells will start close to receptors and move away so that the filled cells will also be used as berms to minimise the noise impact on nearby receptors.

With mitigation measures, the temporary noise impact from the felling of trees and the construction of Berm A and B are expected to be below the noise limit. The operational noise impact from the remainder of the proposed development will also be below the daytime noise limit.

The EIAR addresses the potential for vibration impacts (Section 9.2.4) and concludes that due to the separation distance between the proposed works and sensitive receptors, vibration will not be perceptible and will be significantly below any thresholds for structure damage to property.

Conclusion

- I consider that the issues raised by the observers have been comprehensively addressed. I consider that the noise assessment, which presents a worst-

case scenario is robust and identifies all of the potential impacts associated with the construction and operational stage of the project.

- I accept that it has been demonstrated that subject to the mitigation measures outline in the EIAR that noise associated with the construction phase of the development is not likely to result in significant effects on sensitive receptors.
- I accept that a small number of receptors close to the site will be impacted during the operational phase associated with tree felling and the construction of berms but these impacts will be temporary and short-term and mitigated by the works programme and good construction practice.
- No significant impacts associated with vibration are predicted which would impact on nearby receptors.
- There will be regular monitoring of noise levels to ensure compliance with the IE licence under which the facility operates.

9.7. **Biodiversity**

Chapter 10 of the EIAR provides an ecological assessment of the proposed development at the Knockharley site. It is supported by Appendix 10.1 to Appendix 10.4 contained in Volume 3 of the EIAR. Appendix 10.5 contains the AA Screening Report and Appendix 10.6 contains the Natura Impact Statement. These documents are bound separately and are considered below under Section 11 of this report (Appropriate Assessment).

Further information was sought in relation to biodiversity issues and the applicant's response to is set out in Response to Query No 4 - Part 1. It addresses the matters raised in the submissions and includes details of the continued ecological/biodiversity surveys carried out at the landfill site during the 2018/19 winter period and in 2019.

Issues raised by the observers during the course of the application and oral hearing

Meath County Council appointed FERS (Forest Environmental Research and Service) to prepare a peer review of the biodiversity chapter of the EIAR. It raised a number of issues relating to the use of an out-of-date data base, survey methodologies, the expertise of those who conducted the surveys and questioned

the adequacy of the information presented. These matters together with those raised in observers' submissions are considered below. I would also draw attention to the separate report prepared by the Board's ecologist, who assessed the adequacy of the information presented.

Out of date data base

It is contended by FERS that the information presented is not based on the most up to date data base. Reference is made for example to the failure of the applicant to identify the date or version of the GIS shapefiles downloaded from NPWS. It is also asserted that the information sourced on protected species from the NPWS is out of date.

The applicant's response confirms that the most up to date version of GIS shapefiles were used at the time of the EIAR in 2018. The shapefiles of the cSAC's SPA's and pNHA's were compared to the latest national data sets from the NPWS. The NWPS does not assign a date to shapefiles, but assigns a version number to each polygon. Only one polygon was updated (from version 1.11 to 1.12), where an additional area was incorporated into the River Boyne and River Blackwater SAC. This occurred c. 31km from the site boundary, which is well outside the 15km study area. The shapefiles for the protected sites utilised are still accurate.

In response to the contention that the information sourced on protected species is out of date, the applicant refers to the EIAR (Section 10.4.2) where there is clear reference to the use of data sets from both the NPWS and National Biodiversity Data Centre (NBDC) for protected species. It notes;

'no records were available on the NPWS website for the 10km Grid N96 grid square and no records of protected fauna or flora were available on the NBDC for the 2 km grid square N96T in which the development is located. The EIAR (Table 10-4) are the records made available on request by NWPS'.

The information provided by NPWS is clearly dated, with the majority dating back to the 1960/70's. As stated by the applicant is perhaps indicative of little survey work carried out in the grid square in recent times. I consider that the applicant has provided clarity on the matters raised.

Survey methodologies and expertise of those who carried out the surveys

The EIAR provides some information on the methodologies employed in the various ecological surveys. The level of detail is elaborated upon in the response document and confirms that the surveys have been conducted in accordance with recognised guidance and practice.

Table 11.1 of the EIAR lists the contributors to the EIAR under the various chapters of the report. The response document provides more detailed information on the qualifications and expertise of those who conducted the surveys.

I am satisfied that the requirements of Article 5(3) of the Directive have been complied with and that it has been demonstrated that the EIAR and supporting information has been prepared by competent experts.

Survey information

It is contended by FERS that the survey work is insufficient and that there is inadequate information available to the Board to fully assess potential impacts on biodiversity within the site. It is stated that further assessment of the habitats, birds, mammals, bats and other fauna is required.

The applicant's response provides an update of the information presented in the EIAR, supported by a suite of additional surveys conducted on the landfill site over the winter of 2018/2019 and during 2019. The updated ecological reports are contained in appendices as follows:

- Appendix 1 – Knockharley Landfill bird surveys 2018/19
- Appendix 2 - Knockharley Landfill bat surveys 2019.
- Appendix 3 – Knockharley Landfill mammal survey 2019
- Appendix 4 – Knockharley Landfill botanical and habitat surveys 2019
- Appendix 5 – Knockharley Landfill aquatic survey report 2019
- Appendix 6 – Knockharley Landfill Viviparous Lizard survey 2019.

<u>Impacts on habitats and flora</u>

The response to further information contains an updated version of the habitat map (Figure 1.1) and it is based on more recent surveys conducted in 2019. It provides a more detailed analysis and indicates a more diverse range of habitats present on the site. It provides updated descriptions/evaluations of each of the habitats and a description of the species present.

The updated habitats map reveals that the dominant habitats remain unchanged. The habitats have been altered by the existing landfill activities and are of low ecological value. No habitats that correspond to any Annex 1 habitat types and no rare or protected species were recorded.

It is proposed to remove c 12.5 ha of woodland habitat to facilitate the development. FERS state that in the absence of detailed information on their botanical make-up, is not possible to assess potential impacts. The applicant conducted surveys of the broadleaved plantations within the development footprint in 2019 and all species were identified and recorded. No protected species of flora were identified on-site during the original or more recent surveys. The woodland is not 'ancient woodland' or 'naturally occurring woodland', it was planted when the landfill was being developed. It has low species diversity with few woodland specialists present.

The FERS report also questions the lack of records of lower plants, stating that the site provides suitable habitat for moss, liverwort or lichen species. The applicant draws attention to the findings of the Botanical and Habitat Survey (Appendix 4), noting that only common moss species were recorded. No lichens were recorded and the site would not provide suitable habitat due to ongoing disturbance. There were no rare and protected moss, liverworth or lichen species within the facility. Whilst records show the presence of Slender Pocket-moss *Fissidens exilis* within grid square N96, it dates to 1978 with no further records over the past 40 years. The woodland habitat which is of recent origin would not present suitable habitat for this species.

In response to the FERS report which states that the applicant fails to comply with Article 10 of the Directive and identify, characterise and assess the importance of ecological corridors or stepping stones, the applicant draws attention to the EIAR (Section 10.5.2.2.). The response acknowledges the value of hedgerows/treeline and woodland habitats within the site, but that the main continuous corridor is Knockharley Stream, which is constrained by poor water quality which results in sub-optimal habitat. I would also draw the attention to the separate report prepared by Dr Maeve Flynn, who addresses this matter and states that *'currently undeveloped areas of modified and semi natural habitats do not represent features that are of major importance for wild flora and faun, such as those with a stepping-stone and ecological corridor function as referred to in Article 10 of the Habitats Directive'*.

Dr Flynn also concludes that the technical content of ecological information is sound and includes adequate and up to date data. The ecological methods have been clarified and are in general in accordance with good practice, with any departures made clear. The overall conclusion is that adequate information is provided to assess the impacts of the proposed development on habitats and flora within the development site.

Conclusion

I accept that the further information addresses the issues raised in the FERS report. It confirms that the surveys have been conducted in accordance with recognised practice and by persons with appropriate qualifications and expertise. It charts the evolution of the land uses/habitats on the site and presents an environment that is subject to constant change and disturbance. It confirms that there are no rare/protected habitats or flora species on the site.

The habitats that will be removed are common in the locality and as noted by Mr Dixon during the oral hearing there is nothing to distinguish the habitats on the site from those in the surrounding area.

I conclude that the Board has before it an appropriate level of detail to enable it to assess the potential impacts arising from the proposed development on habitats within the site.

Impacts on birds

Issues were raised in the FERS report regarding the lack of information on the methodology used in the bird surveys and the expertise of those who carried out the surveys. It is also stated that additional surveys should have been carried out to assess the suitability of the site for species including breeding waders, breeding raptors, kingfisher, summer birds and Barn Owl.

While Section 1.1 of the EIAR lists the contributors to the EIAR, it does not provide details of the specific expertise of those conducting the surveys. This is satisfactorily addressed in section 2.3 of the response. Details of the survey times, surveyor, weather conditions, start and end times are provided in Table 2-2 of the further information response. Standard type equipment was used including binoculars, telescopes, field maps, field sheets, recorders/or phone and cameras.

The response details additional surveys carried out over the 2018/2019 winter period to address the issues raised by FERS. The results of the surveys are provided in Table 3-2. The majority of species recorded are Green listed and not of special conservation concern. Only three species of high conservation concern (red listed) and these included black-headed Gull, Herring Gull and Meadow Pipit. The results are similar to the original surveys. The majority of birds recorded during the summer transect surveys were also Green listed and the two species of high conservation concern Meadow Pipit and Herring Gull.

The response also includes details of breeding wader surveys, breeding raptor vantage point surveys, kingfisher surveys, and barn owl surveys, the results of which are discussed in more detail below.

Breeding Wader Survey

The FERS report noted the abundance of wet grassland habitat (GS4) and suggested that due to the relatively protected nature of the site (fences, pest control etc), these areas may provide suitable habitat for breeding waders.

No breeding waders were observed in previous surveys but for the avoidance of any doubt, breeding wader surveys were conducted over the summer 2019. The surveys were conducted on three separate dates (June /July 2019) and carried out within three hours after dawn. All potential breeding habitats were surveyed including the agricultural grasslands to the north/northeast, the wet grassland area to the south east, the surface water attenuation pond to the south and the grassed over area of the landfill at the centre of the facility. No breeding waders were recorded.

The FERS report considers that the diurnal and nocturnal use of the site and its environs by Golden Plover, which is a qualifying interest of two SPA's, should have been a key element of the bird surveys. While the species was recorded on arable land adjacent to the site in previous surveys (2008), it has not been recorded in any other survey to date.

This matter was considered at the oral hearing and it was confirmed that Golden Plover does not use the site and the habitats that will be affected by the development are not of significant value for this species. In response to the question of nocturnal surveys, Mr Carl Dixon (applicant) stated that the survey effort must be proportionate

and given the lack of evidence of this species on the site, further surveys were not necessary.

Breeding Raptor Survey

The applicant also carried a breeding raptor survey to address the matters raised in the FERS report. The survey was carried out at the facility during the summer of 2019 and included vantage point watches in June/July/August 2019. Annex 1 Peregrine Falcon was observed flying through the site but there is no evidence that it is breeding within the facility. There were occasional sightings of Buzzard and Sparrowhawk, which are green listed and a low conservation concern. None were observed breeding within this area during the breeding surveys.

The applicant's response notes that pest control, which would reduce prey availability is required as a condition of the EPA licence. Bird numbers and activity around the landfill are also controlled using decoys, balloons and distress calls. The low number of raptors recorded on the site may be due to these measures.

Kingfisher surveys

As in-stream works are proposed to the Knockharley Stream, FERS questioned why a dedicated Kingfisher survey was not conducted, noting that the site is within a 10km square within which Kingfisher are recorded and less than 5km from the River Boyne and River Blackwater SPA, which is of conservation interest for the species.

The response document notes the type of habitats preferred by Kingfisher from a study of six river systems, including the River Boyne. These habitats are not available within the site. Vertical banks suitable for Kingfisher nesting are not present along the stream within the site which together with lack of suitable perching locations and poor water quality resulting in poor prey availability make the stream a low value watercourse for Kingfisher.

A survey of watercourses and standing water at the facility was carried out to detect the presence of breeding Kingfisher at the site. Kingfisher surveys were conducted in June/July/August 2019. A separate Kingfisher survey was also undertaken as part of the aquatic surveys prepared by Triturus and this is contained in Appendix 5.

Kingfisher was observed occasionally within the site but there was no evidence of breeding activity. Suitable prey resources exists (three-spined stickleback,

macroinvertebrates etc) in the surface water pond to the south of the facility, but in limited numbers. There is no significant food resource available on the site which would attract Kingfisher in any significant numbers.

Kingfisher is a qualifying interest of the River Boyne and River Blackwater SPA, which is located c 4.6km north east of the facility. The potential for significant effects on Kingfisher within the SPA is discussed in more detail in Section 11 below under Appropriate Assessment.

Whooper Swan

The FERS report also queried why a dedicated Whooper Swan Survey was not undertaken in order to identify flight paths and to ensure that the proposal to relocate powerlines within the site do not present a collision risk.

The grassland areas along the River Boyne and Blackwater to the north of the site are used by a nationally important winter flock of Whooper Swan. Scottish Natural Heritage Guidance gives a foraging range of less than 5km for Whooper Swan from night roosts during the winter season. Knockharley is located at the very edge of this core foraging range for this species.

There have been no observations of Whooper Swan in any of the surveys conducted from 2010 to the present day. There is limited suitable habitat on the site with no flooded fields/callows for roosting/feeding. There is limited habitat potential associated with the surface water attenuation pond and some grassland fields Whooper Swan has not been recorded using these areas.

As stated by Dr Flynn in her report, the movement of this lower voltage line will not cause any significant change to the current baseline, which would pose any additional collision risk to birds flying between foraging and roosting sites. Furthermore, no suitable roost or feeding sites have been identified within the existing facility, which negates the need for low flights and a potential collision with overhead lines.

Barn Owl Survey

The FERS report also queried why a Barn Owl survey was not conducted on the site, given a relatively recent record of the species within the vicinity of the proposed development.

Barn Owl is the most threatened species of owl in Ireland and has recently been 'Red-listed'. A Barn Owl survey was carried out at the facility on 14th June to check for active nests with eggs, and on 8th July 2019 to check for fledged young and late nests. The entire study area was checked with special attention given to selected areas such as farm buildings at the northeast of the facility. None were observed during any of the surveys.

The majority of the woodland is considered too immature for nesting owls. No hollow trees, roost or nest sites were recorded within the site. It is acknowledged that the site offers potential foraging habitat for Barn Owl and that the species was recorded historically foraging on the site. However, as already noted, rodent control measures are a condition of the EPA licence and are implemented as part of the permitted development which would reduce prey sources for this species.

Conclusion

The surveys conducted on the site indicate that the majority of birds recorded on the site are common species which are not of conservation concern. Some Red listed and Annex 1 species use the site occasionally and are habituated to noise and disturbance. There are no significant food resources on the site which would make the site attractive for these species.

I accept that the impact of the development on birds has been comprehensively assessed and that the Board has before it an appropriate level of detail to enable it to assess the potential impacts arising from the proposed development.

Bats

The FERS report states that the bat survey methodology is poorly and unscientifically described and that the timing and limited duration of the survey (one dusk survey) was a critical flaw in the bat assessment. It also considers that there was a failure to properly assess the use of habitats such as the Knockharley stream and the constructed wetland feature to the south, which together with hedgerows and treelines would provide suitable commuting and foraging habitat.

The applicant's response confirms that bat surveying was carried out by a highly experienced and proficient bat specialist. The response notes the content of the EIAR (10.3.6) in respect of the transects walked and how bat activity was recorded for the 2016 survey.

Additional bat surveys were conducted in 2019 to update the information contained in the EIAR (Appendix 2). The bat surveys, which included a total of 4 no. bat activity/emergence surveys in addition to static detector surveys, were carried out in accordance with the guidelines set out by the Bat Conservation Trust UK[15]. The surveys were conducted at dawn and dusk, using appropriate equipment and targeted a range of foraging and commuting habitats within the study area.

The location of the transects through favourable bat habitat for the individual surveys are shown in Fig 2.1 to Fig 2.4 of the response document. The static detector locations are shown in Fig 2.5 and were deployed for a minimum period of 57 nights during the bat activity season. The site was also surveyed for potential roost sites which included structures and trees that could be suitable.

During the original bat surveys, no bat roosts were found on the site. Data from the National Biodiversity Data Centre suggest that there are no bat roosts within 1 km of the site. No bat roosts were observed during the 2019 survey. The 2019 surveys reveal that 4 no. bat species use the site for foraging/commuting. The static detector monitoring revealed a total of 7 no. species. Bat activity on the site was very low, indicating that the facility is not a suitable site for bats,

I consider that the scope of the surveys is sufficient and proportionate and accords with practice guidelines. Some bat activity has been detected but the level of activity suggests that the site is not favourable for bats and no bat roosts have been identified in any of the surveys to date. No additional significant effects were identified above those identified in the EIAR following the more recent surveys. I conclude that the Board has sufficient information to determine that no significant effects on bats are likely to occur.

Mammals

The FERS report raised issues regarding the route taken during the mammalian surveys, weather conditions and the qualifications of the surveyor(s). It also noted that there was no use of trail cameras to supplement the survey.

[15] Bat Surveys for Professional Ecologists-Good Practice Guidelines (Collins 2016)

It was confirmed in the response document that all habitats within the red line boundary were searched for signs of mammals, with extensive searches of woodlands and fields boundaries.

The applicant response confirmed that trail cameras were not used during site walkover surveys for mammals conducted in 2010 and 2015, as their use is not referenced in NRA guidelines. An updated walkover mammal survey was conducted on the entire footprint of the landfill 2019 (Appendix 3 of the EIAR) to update the information contained in the EIAR. Walkover surveys were conducted on October 2nd, 2019 in accordance with the methodology set out in the NRA guidelines and trail cameras were placed within the site to complement these surveys. The cameras were placed in a wet grassland/grass verges mosaic (camera 1) and a mixed broadleaved woodland (camera 2) in the south and north respectively of the existing facility. The cameras were left in place for a minimum of 62 days and the results confirm the findings of the EIAR.

Otter

Contrary to the assertions made in the FERS report, a dedicated Otter survey was undertaken to inform the EIAR. Signs of otter (spraints) were observed along the Knockharley Stream to the northwest of the site in the 2010 mammalian survey. No evidence of breeding (holt) was found. During the 2015 surveys evidence of otter was found at three locations at a drain crossing point to the east of the landfill, along the Knockharley Stream and along a drain to the northeast of the site. No holts were identified.

Additional and targeted Otter (Annex 11) surveys were conducted as part of the aquatic surveys in August 2019. Otter activity was low with only three signs (all spraint) recorded along the watercourses and at the inflow pipe culvert to the existing surface water attenuation pond. No holts were recorded during the site surveys.

The smaller streams adjacent to the site have limited food resources and are considered unlikely to be used as foraging habitat but are likely to be used by commuting otters. It is accepted that the surface water attenuation pond has been used due to prey resource present and lower levels of human disturbance. Having regard to the absence of high-quality feeding resources, the site is not likely to be attractive for significant numbers of otter.

Other Fauna

The FERS report also takes issue with the absence of dedicated reptile, amphibian or invertebrate surveys undertaken within the study area.

As there was no evidence that lizard was, or could potentially occur on the site, it was not considered in the EIAR. In response to further information surveys were conducted and the results are contained in Appendix 6.

Given that no lizards were observed during the site surveys and the historical records of the species indicate that it has not been recorded within 20km of the Knockharley Landfill since 1970, the construction/operation of the proposed development will have no significant effect on viviparous lizard as they are not present on the site.

As a precautionary measure all areas of habitat surveyed as part of the survey within the construction zone, with the potential to support reptiles that will be affected by ground works will be manged (precautionary clearance and a time lag before clearance to allow any potential animals to disperse).

Details of amphibian records are provided in the EIAR (section 10.4.8). The 2019 surveys confirmed that Common Frog is present within the site, particularly towards the northern section of the facility. There will be loss of habitat with the potential to support Common Frog. There will be no impacts on suitable habitats to the south these have the potential to support displaced individuals from surrounding habitat types. The new wetland feature to be created to the north of the site, will also in time offer additional habitat for amphibians, which are noted to be highly adaptable.

Mitigation measures will include preconstruction amphibian surveys prior to construction. It is intended that should frogspawn be encountered within the footprint of the works, any habitat alteration will be postponed until after the breeding cycle has been completed. Alternatively, the developer will seek a derogation licence to move frogspawn out of the area to suitable habitat within the site.

Details of invertebrate species recorded on the site during surveys in 2010 and 2015 are provided in the EIAR. The 2019 surveys re-confirmed that no invertebrate species of high conservation concern were recorded on the site. The habitats with potentially high invertebrate richness identified within the site include artificial lakes and ponds, wet grassland and reed and large sedge swamps which lie outside the

proposed development footprint. During the operational stage invertebrates are likely to continue to utilise the habitats outside the development footprint and the areas of new woodland to be created.

Aquatic surveys

The aquatic survey by Triturus (Appendix 5) were completed to update the existing survey data used in the preparation of the EIAR and in response to issues raised in the FERS report. It focuses on aquatic habitats in relation to fisheries potential, macro-invertebrates, water quality, macrophytes, aquatic invasive species and Annex 11 aquatic species which may use the site and its surrounds.

The surveys indicate that the streams close to the site (Flemingstown, Kentstown and Veldonstown) suffer from poor water quality with poor fisheries potential. The conditions that are present can support the three-spined stickleback which is highly tolerant of poor water quality. The River Nanny to the south has greater potential but suffers from excessive siltation.

The overall conclusion reached in the report is that the watercourses in the vicinity of the site are generally of poor quality and support limited fisheries potential. This has knock on effects in terms of supporting other species including otter and kingfisher.

Conclusion

- I consider that the potential impacts of the proposed development on the biodiversity of the site have been comprehensively assessed in the documentation submitted. The surveys have been carried out in accordance with best practice guidance and by competent experts.
- I consider that the nature and scope of the surveys is acceptable and proportionate. The additional surveys update the information provided in the EIAR but do not alter its overall conclusions. No significant additional mitigation measures beyond those proposed in the EIAR are required.
- The majority of habitats that will be impacted by the development are of local importance and low ecological significance. The woodland habitats which are of higher ecological value as they provide shelter and foraging habitat for local wildlife. These areas of woodland and will be replaced with deciduous woodland improving ecological diversity.

- There are no rare or protected plant species on the site. The mammals present are widespread and common. While species such as otter and kingfisher may use the site for transient foraging there is no evidence that these species are using the site in significant numbers or breeding on the site.
- The majority of birds recorded on the site during the various surveys are not of conservation concern/protected species.
- Subject to the mitigation measures proposed during the construction and operational phases of the development, which I consider are reasonable and proportionate, I do not consider that the overall biodiversity of the site will be significantly or negatively impacted by the proposed development.

9.8. **Public Consultation**

It is contended in some of the submissions that there has been a lack of adequate public consultation in respect to the development. The observers refer to one public event which was organised by the applicant. It is stated that poor attendance at this event (15 attendees), was due to the time of the event, poor lead in time and the use of one advertisement method. The event which was organised on November 14th 2016 and during the period between 15.00-18.00 hours when many people were at work.

Article 6(4) of the EU Directive (2014/52/EU) requires that *'The public concerned shall be given early and effective opportunities to participate in the environmental decision-making procedures referred to in Article 2(2) and shall, for that purpose, be entitled to express comments and opinions when all options are open to the competent authority or authorities before the decision on the request for development consent is taken.'*

While I accept that the level of engagement by the applicant with local residents was limited, I do not accept that the right of the public to participate has been compromised. There were two rounds of written submissions and an oral hearing, providing a platform for observers to participate before a decision is made on the application.

Issues were also raised by Darren O Rourke TD regarding the lack of opportunity of the planning authority to participate at the oral hearing. I would point out to the Board that the oral hearing was originally scheduled to commence on April 6th, 2020 and

was cancelled due to Covid-19 restrictions. The hearing was re-scheduled to take place between the 22nd and 25th November 2020 when restrictions were removed but was postponed in an attempt to accommodate the planning authority, who were engaged in meetings associated with the preparation of new development plan. The hearing was organised to proceed on December 16th to 18th based around the planning authority's calendar of availability. The planning authority did not participate.

10.0 Environmental Impact Assessment

Statutory Provisions

The European Union Directive 2014/52/EU, amending Directive 2011/92/EU, on the assessment of the effects on certain public and private projects on the environment, requires Member States to ensure that a competent authority carries out an appraisal of the environmental impacts of certain types of projects, as listed in the Directive, prior to development consent being given for the project. The EIA Directive was transposed into Irish law under the Planning and Development Regulations 2001 to 2018. Part 1 of Schedule 5 of the 2001 Regulations, includes a list of projects for which mandatory EIA is required. Part 2 of Schedule 5 provides a list of projects where, if specified thresholds are exceeded, an EIA is also required.

The proposed development falls within the definition of a project under the EIA Directive and falls within the scope of Class 11 of Part 2 of the Fifth Schedule

'Other projects'

(b) Installations for the disposal of waste with an annual intake of greater than 25,000 tonnes not included in Part 1 of this Schedule.

The application was submitted after 16th May 2017, the date for transposition of Directive 2014/52/EU amending the 2011 EIA Directive. The application is therefore supported by an EIAR. The proposed development with a proposed annual intake of 440,000 tonnes per annum exceeds the threshold provided and is therefore subject to mandatory EIA.

The EIAR is contained in 4 no. volumes:

Volume 1 – Non-Technical Summary

Volume 2 - Main Report

Volume 3 – Appendices

Volume 4 – Drawings

Compliance with Legislation

The impact of the proposed development is addressed under all relevant headings with respect to the environmental factors listed in Article 3(1) of the 2014 Directive, which include:

(a) population and human health;

(b) biodiversity, with particular attention to the species and habitats protected under Directive 92/43EEC and Directive 2009/147/EC;

(c) land, soil, water, air and climate;

(d) material assets, cultural heritage and the landscape;

(e) the interaction between the factors referred to in points (a) to (d).

The environmental factors listed in Article 3(1) are considered in Chapter 6 to Chapter 16. Chapter 1-3 include an introduction, a description of the proposed development and its policy context. Chapter 4 sets out a case for the need and background to the proposed development and the alternatives considered by the applicant. Chapter 5 sets out details in relation to EIA scoping and consultation. Chapter 16 provides a Schedule of Environmental Commitments.

Article 3(2) of the Directive requires the consideration of effects deriving from the vulnerability of the projects to risks of major accidents and/or disasters that are relevant to the project concerned. Natural disasters including landslides and flooding are discussed in Chapter's 11 & 12 respectively of the EIAR.

The EIAR complies with Article 5 of the Directive and Schedule 6 of the Planning and Development Regulations 2001, as amended. It provides a comprehensive description of the project comprising information on the site, design, size and other relevant features of the project (Chapter 2). It describes the likely significant effects of the project on the relevant environmental media (Chapters 6 -15). It provides a description of the measures envisaged in order to avoid prevent or reduce and, if possible offset likely significant effects on the environment. These are discussed

under the various environmental factors and a Schedule of Environmental Commitments is provided in Chapter 16.

The EIAR includes a non-technical summary of the information referred to in Article 5 (a) to (d) and additional information specified in Annex IV to the specific characteristics of the overall project and project type and to the environmental features likely to be affected. It provides an adequate description of forecasting measures/evidence used to identify and assess the significant effects on the environment. The Non-Technical Summary is concise and comprehensive and is written in a language that can easily be understood by a lay member of the public. I note that no technical difficulties were encountered in the preparation of the EIAR (Section 1.9).

The Directive also requires that the description of likely significant effects should also include an assessment of cumulative impacts that may arise from the proposed development in combination with other plans or projects. Section 1.7 of the EIAR sets out the methodology for the cumulative assessment and details of other projects considered. Cumulative effects are also considered under the various environmental factors in the individual chapters of the EIAR.

In compliance with the provisions of Article 5(3), the EIAR tabulates the inputs and qualifications of the study team and contributors under Section 1.8. I am satisfied that the EIAR has been prepared by competent experts to ensure its completeness and quality.

Details of the consultations entered into by the applicant as part of the application are set out in Chapter 5. This included consultation with regard to scoping for the EIAR, pre-application consultations and consultations with the public. One public information event was held on Monday November 14th, 2016 at the landfill facility.

In terms of the content and scope of the EIAR, the information contained in the EIAR generally complies with article 94 of the Planning and Development Regulations, as amended.

10.1. Alternatives

Under the provisions of amending Directive 2014/52/EU Annex IV (2) it is a requirement that an EIAR contain:

'A description of the reasonable alternatives (for example in terms of project design, technology, location, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects'.

Alternatives are considered in Section 4.6 of the EIAR under the following headings:

- Alternative site development locations
- Alternative layout design
- Alternative technology
- Do-Nothing alternative'

Alternative site development locations

In addition to Knockharley, the parent company has an interest in Ballynagran Landfill in Co Wicklow and Kilcullen Landfill in Co. Kildare. As Kilcullen is currently undergoing restoration and no longer available to accept waste, Ballynagran is identified as the only feasible alternative available to the applicant. Consideration was not given to alternative locations (greenfield or other licensed sites) as they are not in the ownership/control of the applicant this is considered reasonable.

The sites at Knockharley and Ballynagran are compared and assessed under a number of criteria including location and accessibility, available development footprint, suitability for development and environmental considerations.

In terms of location both Knockharley and Ballynagran are located within the Eastern and Midlands Waste Management Region. The majority of waste generated in the region is in Dublin city/county areas which contains over half of the population of the region. Incinerator bottom ash is produced at Carranstown in Co. Meath and Poolbeg in the Dublin docklands. Knockharley is therefore the closest landfill to the centre of waste generation and to the sources of incinerator bottom ash.

In terms of accessibility, both sites can be accessed directly off the M50 via the N11/M11 for Ballynagran and via the N2 for Knockharley. In terms of access, Knockharley is considered to have the advantage, being located directly off the N2, and facilitated by a left turning lane when travelling from the south and by a

dedicated right-hand ghost island priority junction when travelling from the north, which ensures that queuing is not an issue.

Both sites are similar in terms of available footprint to accommodate the proposed development. However, the site at Ballynagran is not in the ownership of the parent company, it is leased from a private landowner. Having ownership of Knockharley makes it the preferred option as it provides the applicant with more defined control over its operations.

In terms of overall suitability for development, the EIAR states that Knockharley is preferable due to its relatively flat topography. In contrast, Ballynagran is developed in a more irregular manner with more challenging topography which would require more expensive design input and potentially more challenging construction.

With regard to environmental considerations, both facilities operate under licences from the EPA and accordingly the protection of the environment and assessment of the environmental capacity of each site is overseen by the requirements of the licenses.

As part of the alternative site development locations, Knockharley is considered the preferred location across three of the four criteria, with environmental considerations being considered as neutral.

Alternative Site Layout Designs

There are a number of new elements proposed as part of the development including an IBA storage facility, biological treatment facility and leachate treatment infrastructure. The latter will be located adjacent to the existing leachate lagoon and accordingly no alternative layout for this element was considered.

Locations for the IBA storage facility were considered to the east and west of the existing landfill due to the availability of the required footprint in these areas. The locations are shown on Drawing No LW14-821-01-P-0000-012 in Volume 4 of the EIAR. The decision was made to locate the facility to the east side of the landfill close to existing site access, weighbridge and the potential for connections to existing infrastructure (drainage and electrical) and construction issues (management and re-use of soils).

Two locations (Options 3 & 4) were also considered for the proposed Biological Treatment facility, to the south of the leachate lagoons. The locations were considered on the basis of the potential environmental impact associated with emissions from the biofilter stack associated with the facility. Option 4 was considered preferable on the basis of odour modelling.

Alternative Treatment Technologies

Having considered the preferred locations for the new plant proposed as part of the development, consideration was given to the different technologies that can be applied as part of these processes.

Processing options for Biological Waste Treatment

It is noted in the EIAR that while there is a large range of processing options available for the treatment of biodegradable waste, legal requirements require 'in-vessel' technology. This may be either anaerobic or aerobic. Odour management and odour control are common to both as are waste acceptance facilities and by-product management.

The preferred technology option is aerobic composting as this is 'tried and tested'. It uses concrete composting vessels (tunnels) with all waste handling occurring indoors, and with full control of process air and liquids, in terms of environmental controls.

Processing options for Leachate Treatment

Regarding leachate treatment, technologies can combine physical, chemical and/or biological processes to reduce leachate strength. The choice of technology is influenced by the degree of treatment required and/or the acceptance standards at wastewater treatment plants. The proposal is to utilise a combination of leachate treatment processes to reduce the leachate strength prior to off-site disposal to wastewater treatment plants.

Processing options for IBA Storage

Regarding IBA storage, the design of the cells must be in accordance with Annex 1 of Council Directive 99/31/EC on the Landfill of Waste, and in doing so relevant environmental factors are inherently considered. The applicant has no option but to

comply with the requirements of the Directive The shape of the IBA cells has been determined by factors such as accessibility, available space and target volume.

‘Do nothing’ Alternative

The primary objective of the proposed development is to provide management capacity for a range of non-hazardous waste materials. The EIAR (section 4.6.4) outlines the scenario in a ‘Do-Nothing’ scenario for the various waste streams that would be managed by the proposed development.

Residual MSW would continue to be managed through a combination of existing landfill capacity, thermal treatment and export, with ‘pressure points’ (similar to the Section 56 emergency events implemented in 2016/17) potentially occurring until such time as sufficient extra national capacity is provided. Such ‘pressure points’ have the potential to have negative environmental impacts such as longer storage at waste transfer facilities due to the lack of available outlets, increasing potential for odour generation at these sites. In a ‘do nothing’ scenario for the management of repatriated wastes and historic legacy sites, this material will be competing for the limited landfill capacity that will exist in coming years, resulting in instances where waste material will not be removed due to lack of available landfill outlets with resultant continuance of the negative environmental impacts resulting from the presence of this material at these sites.

In a ‘do nothing’ IBA management scenario, the IBA material produced from Carranstown will compete with other materials for the limited landfill capacity available in the coming years and the potential resource value of this materials will be lost as it is co-landfilled with other materials. The IBA material from Poolbeg will continue to be managed through export, with the environmental benefits associated with the recovery of this material potentially realised in the end destination country.

With regard to the ‘do nothing’ alternative for C&D soils and stone the identified lack of capacity will continue with the proposed development not making any contribution in terms of national capacity provision.

Conclusion

The EIAR provides a description of the reasonable alternatives investigated by the applicant, which are relevant to proposed development and its specific characteristics. I consider that the applicant has provided a reasoned basis for the

option chosen, having regard to environmental effects and has therefore complied with the requirements of Article IV (2) the amending Directive.

In terms of alternative locations, the applicant has demonstrated that the subject site has fewer constrains than its alternative at Ballynagran. It has also been demonstrated that the adopted layout and design have been formulated having regard to the existing development and the overall functioning of the site in terms of management, access and environmental effects.

I accept that the 'Do-Nothing' scenario would not achieve the objectives of the proposed development and that the capacity issues identified for the waste streams would remain together with associated environmental impacts.

I conclude that the Board has before it adequate information on the alternatives considered by the applicant.

10.2. Conclusion on EIAR compliance with legislation

I am also satisfied that the information contained in the EIAR and additional information complies with the provisions of amending Directive 2014/52/EU. I am satisfied that the information provided in the EIAR is reasonable and sufficient to allow the Board to reach a reasoned conclusion on the significant effects of the development on the environment.

10.3. Likely Significant effects on the Environment

This section of the report considers the direct and indirect significant effects of the development against the factors set out under Article 3(1) of the EIA Directive, which include:

(a) Population and human health

(b) Biodiversity, with particular attention to species and habitats protected under Directive 92/43/EEC and Directive 2009/147/EC

(c) Land, soil, water, air and climate,

(d) Material assets, cultural heritage and the landscape, and

(e) The interaction between the factors referred to in points (a) to (d).

The headings used in the EIAR to address each of the environmental factors are as follows:

- Population and Human Health
- Air Quality and Climate
- Roads, Traffic and Transportation
- Noise & Vibration
- Biodiversity
- Lands, Soils and Geology
- Hydrology and Surface Water Quality
- Landscape & Visual Impact Assessment
- Archaeology, Architectural and Cultural Heritage
- Material Assets

The direct, indirect and cumulative effects of the project on the specified factors is identified, described and assessed in the following sections.

10.4. Population and Human Health

EIAR summary

Population

Chapter 6 of the EIAR assesses the likely significant effects of the proposed development on Population and Human Health with reference to population, human health, employment and socio-economics, land use, recreation, amenity and tourism. The potential for additional significant impacts on population and human health from water, air, traffic etc are discussed in separate chapters of the EIAR.

The study area is identified in Fig 6.1 and is defined in terms of the District Electoral Divisions (DED's) within 500m from the proposed development. The data indicates that the population of the study area increased by 6.5% between 2011-2016 which is higher than the national and county trends for the same period. There are currently 721 no. dwellings within 2km of the site (Eircode dataset), the majority of which are detached single-family dwellings concentrated in ribbon form along the local road network. The closest residential properties to the site are to the north and east (Fig 6.5). The closest settlement is Kentstown village located c 1.5km to the south. The

site is located within an area identified in the development plan as an area of Rural Area under Strong Urban Influence.

In terms of socio-economic activity, the study area is close to large urban centres including Dublin, Navan and Drogheda, which have significant industrial and commercial development. It is likely that a considerable number of the local population commute to these centres to work. There are some local businesses in the surrounding area and the landfill itself employs 12 no. permanent staff.

There are a number of significant tourism and amenity attractions in the wider area including the UNESCO World Heritage Site of Bru na Boinne, Hill of Tara, Trim Castle, Slane Castle, Loughcrew Cairns and the Boyne Valley Drive. Closer to the site Balrath Woods is located c 2.8km to the south. Sommerville Demesne, located c 1.5km south east of the landfill has been identified in the Kentstown Local Area Plan as having potential in terms of encouraging further tourism related facilities in Kentstown. The future expansion of Ballymagarvey Village located at Balrath Cross c.3km south east of the landfill, as a tourism destination is also supported by the LAP.

There is a plethora of sports facilities close to the site including football clubs, GAA pitches, a cricket club and a golf club to the west of the village. Planning permission has been granted for a community sports facility within the centre of Kentstown.

Potential significant effects

Population – No significant effects are predicted on population or settlement patterns due to the proposed development. Construction will take place on a phased basis and the site will continue to operate during the construction phase. The proposed development will be confined to within the landfill boundary and it is not anticipated that this will have any perceptible effect on the population or settlement patterns through an increase or decrease in population or through influencing of settlement patterns in the study area. It is not considered that the development of future residential dwellings in the area will be curtailed by the proposed development.

Land use – Both the construction and operational stages will result in a direct permanent effects on land use at the proposed development locations. The impact is not considered to be significant as the lands are within the existing landfill footprint where alternative land uses are limited.

Socio-economics, employment and economic activity **–** The impact is assessed as positive arising from the provision of up to 30 temporary jobs during the construction phase and an estimated 10 further long-term positions during the operational phase. This will have knock on secondary effects for local suppliers, services, shops etc.

The continued operation of the site will also provide commercial and industrial sectors with an available outlet for the management of waste, indirectly and positively supporting economic activity in the region and beyond. It will also contribute towards meeting the needs of the region(s) in terms of waste management, which is assessed as positive, medium to long-term and not significant.

Recreation, amenity and tourism – The site currently operates as a dedicated waste management facility and the proposed development will continue the emerging trend within the site. It is not considered that there will be any significant impacts recreation, amenity and tourism in the area. The factors which could impact on amenity include changes to the landscape/visual amenity and traffic, which are dealt with in more detail in other sections of the EIAR. These matters are discussed above in Section 9 (Planning Assessment).

It is not considered that there will be any significant effects on recreation and open space as the development will continue to be accommodated within the existing developed landfill site. The operational phase is assessed to have a positive, direct medium to long term effect on recreation options and open space through the continued support provided to local sporting facilities and teams under the Community Development Fund and/or through direct sponsorship.

Human Health

The assessment of impacts on human health are assessed in accordance with the US Environmental Protection Agency (US EPA) Human Health Risk Assessment process. The methodology is described in Section 6.5.5. of the EIAR. A summary of the literature review of literature on the potential health impacts of landfill is provided. The reviews are largely inconclusive in terms of the potential health effects associated with landfills. The literature review did not identify any studies that examined IBA storage.

The human health assessment is based on the possible impacts identified in Chapter 7 (Air &Climate), Chapter 9 (Noise & Vibration), Chapter 11 (Soils, Geology and Hydrogeology) and Chapter 12 (Hydrology and Surface Water Quality).

With regard to air, it is considered that following the implementation of mitigation measures, no adverse impacts on receptors will arise from dust generation. The predicted emissions from the gas utilisation plant are compliant with the statutory limits/standards and will not impacts on ambient air quality in the area or on human health. No mitigation is considered necessary in relation to vehicle emissions during the construction/operational stages of the development, which are assessed as imperceptible/negligible.

With regard to odour it is predicted that the proposed development will have a beneficial effect on odour exposure in comparison to the do-nothing scenario in the first four years. A residual risk of impact remains for up to 4 no. properties during this period and up to 6 no. properties until the landfill is completed.

With regard to noise, no significant effects are predicted during the construction/operational stages of the development.

During construction and operation the proposed development has the potential to impact on surface water and groundwater, which is assessed as Slight to Not Significant in the absence of mitigation.

Proposed mitigation

There are no specific mitigation measures proposed in relation to population and human health during the construction or operational phases of the development other than those proposed to address other environmental impacts (noise, air, surface water, groundwater and soil) which are addressed in the respective chapters of the EIAR.

Conclusion

- The Knockharley is a long established facility and operates under licence by the EPA with continuous monitoring of emissions.
- The development will take place entirely within the boundary of the existing landfill facility and will continue the emerging trend within the site.

- There is no evidence that the existing landfill is impacting on population, settlement patterns, property values or the amenities in the area. The population of the area has increased since the landfill was developed and its designation as an area under 'strong urban influence' suggests that it continues to be attractive for potential future residents. No evidence has been produced that the landfill is impacting on property values.
- There is no evidence that the operation of the existing landfill or the proposed development will result in significant impacts on human health.

I have considered all the submissions made in relation to population and human health. I am satisfied that they have been appropriately addressed in terms of the application and that no significant adverse effect is likely to arise.

10.5. Air Quality & Climate

EIAR summary

Chapter 7 of the EIAR examines the potential effects of the proposed development on air quality and climate in the surrounding environment. It considers both existing emissions and the changes that are likely to occur as a result of both the construction and operational stages of the development. This chapter of the EIAR is supported by Appendix 7.1 (Odour Impact Assessment) and Appendix 7.2 (Gas prediction model).

It describes the existing environment as a rural area which is categorised as Zone D (rural) for air quality management and assessment purposes. Current background concentrations of all pollutants are low and not approaching current EU limits. Dust deposition levels have largely been within the EPA limit value and there have no exceedances of the PM_{10} limit value for the protection of human health in the 5-year period 2014-2018. Flare and engine stack monitoring is undertaken annually on site and the result for the past 5 years were within the ELV's set by the license. Under the conditions of the licence odour assessments are required to be carried out by the licensee.

Potential Significant effects

There will be emissions to air during the construction and operational phases of the development. The main sources of emissions during construction will be dust and

vehicle emissions. The main sources during the operational phases will be from the landfill gas utilisation plant, landfilling of waste and from the biological treatment facility, dust and vehicle emissions.

Dust emissions and PM_{10} are assessed in accordance with IAQM guidance. The DMRB screening model was used to predict traffic emissions. Air dispersion modelling (AERMOD) was carried out to assess the level of exposure and to evaluate odour risk from the biological treatment facility and from landfilling operations.

The conclusion reached in that construction impacts arising from dust (soiling) and PM10 (human health) will be low and that traffic emissions during construction will remain within air quality guidelines. The increase in traffic emissions associated with construction will be imperceptible and the impact on sensitive receptors along the N2 (closest receptor 10m from road edge) and the R150 (closest receptor 3m from road edge) will also be imperceptible. Detailed dispersion modelling was not deemed necessary and mitigation measures are not required.

In terms of impacts on climate there be an increase in the production of greenhouse gases during the construction stage, but the impact to local and national climate will not be perceptible.

The emissions associated with the operation of the facility are individually assessed in the EIAR. No significant impacts are predicted from dust emissions during this stage as the activities that generate dust will not be of a similar magnitude as the constructions stage. Ecological receptors are outside the zone of potential impact for dust and PM_{10}.

Vehicle emissions are assessed using the same methodology as the construction stage. Existing and operational phase (2024-Year 6) emissions for CO, NO_X and PM_{10} were calculated for the N2 and R150 between the N2 and Duleek. These were then compared against the Air Quality Standards Regulation 2011 limits. The overall conclusion is that the magnitude of change in ambient pollutant concentrations as a result of increased traffic emissions will be imperceptible.

Air dispersion modelling (AERMOD) was conducted in accordance with EPA (AG4) guidance,[16] to assess the operational impact of the gas utilisation plant on residential and ecological receptors, with consideration given to a wide range of pollutants (section 7.3.2.1 of the EIAR).

A total of 25 sensitive residential receptors were considered within the model and the locations are shown on Fig 7-2 of the EIAR. Consideration was also given to protection of vegetation and natural ecosystems. A distance of 15km was adopted and includes the 3 no. designated sites located closest to the site. The River Nanny Estuary and Shore SPA which is located greater than 15km from the site, but which is ecologically connected, is also considered.

The modelling results indicate that predicted emissions are in compliance with the statutory limits set out in the EU Ambient Air Quality Directive and other relevant standards at any nearby sensitive receptors and will not impact on the ambient air quality in the area. With regard to ecological receptors the predicted concentrations of NO_X (0.1µg/m3) are substantially below the annual critical level for the protection of vegetation and natural ecosystems (30µg/m3). There will be no significant effects on human health or on designated habitats.

The cumulative impact of stack and traffic emission was also considered in the EIAR (Table 7-20) and it is demonstrated that existing and proposed air emissions from both the landfill gas plant and traffic at the landfill are within the relevant air quality standards and will not impact significantly on the ambient air quality in the area.

Emissions from the proposed biological treatment facility will be discharged to air through a biofilter and potential emissions will include ammonia, hydrogen sulphide and bioaerosols. With regard to bioaerosols, the proposed biological waste treatment facility will be located greater than 250m from the nearest residential properties in accordance with recommendations. Emissions will essentially be minimised to the point source emissions from the biofilter.

The concentrations of ammonia and hydrogen sulphide that will be produced are unknown and will vary according to the type of waste that is accepted. The EIAR

[16] Air Dispersion Modelling from Industrial Installations Guidance Note (AG4), (EPA, 2010)

refers to a paper published by SEPA[17] which indicates that removal of these compounds by a biofilter and scrubber type system will be greater than 90%. The conclusion reached in the EIAR is that the predicted impacts from these pollutants is likely to be low due to the distance of receptors from the stack (>350m), the enhanced dispersion characteristics of the biofilter emissions stack (20m tall with an exit velocity of 27m/s) and relatively high limit values for these pollutants.

Odour

The proposed development will result in changes at the facility with the potential to impact on odour emissions. The new biological treatment plant will introduce new sources of odour to the site which may act in combination with emissions generated from landfilling activities. The quantity and quality of waste received at the site will change and over time the operational area will change as the site develops and includes the IBA facility. New leachate storage tanks will be provided to store the increased leachate generated from the additional waste accepted at the facility.

Composting activities will be carried out in the biological treatment facility with the potential to create odour emissions. The composting will be undertaken in concrete tunnels and both the reception area and the tunnels will be ventilated via a scrubber and biofilter. Operations will take place in a sealed building operating under negative pressure, minimising the risk of fugitive odorous emissions. With odour management and mitigation, the only potential releases will be from the biofilter.

The leachate storage tanks are not considered to be a significant generator of emissions from an off-site exposure perspective. The additional leachate will be stored within covered tanks/lagoons and is therefore unlikely to cause any significant off-site impact if the existing mitigation measures are implemented for new leachate infrastructure. The IBA facility has not been considered as an odour source as it has a negligible odour potential.

The main sources of odour will arise from the emissions from the operational landfill and emissions from the biological treatment facility stack. Dispersion modelling was carried out by Odournet to assess the levels of odour exposure and evaluate odour risk from these activities. A full description of the model, techniques, and impact

[17] Sniffer. 2014 Understanding biofilter performance and determining emissions concentrations under operational conditions.

thresholds used in the assessment are described fully in Appendix 7.1 of Volume 3. As the odours from the biological treatment of waste have a different character and offensiveness rating to the landfill odours, these emissions were modelled separately. (Table 2-23).

The odour impact assessment considers the odour emissions and exposure levels under a number of different scenarios as documented in the EIAR. The outputs for the dispersion modelling for each modelled scenario are presented in Fig 7-7 to 7-9.

The findings of the modelling exercise concluded that total odour emissions generated from landfilling activities are predicted to decrease as a result of the proposed development in comparison to current baseline levels and the emissions that would occur if the development were to go ahead. This is stated to be due to the enhancement of the capping proposed as part of the development and that the majority of additional waste that will be accepted at the landfill will be stabilised, inert or non-biodegradable and therefore has a low odour potential.

The number of dwellings exposed to odour levels that exceed the threshold fall from 12 under current conditions to 4 in year 4 of the proposed development. There is a rise to 6 no. properties in Year 6 as the landfill progresses northwards.

The model output for the biological treatment facility indicates that the predicted odour exposure is below the significance criteria (Table 7-26) and that the impact risk posed by this element of the development is negligible.

The overall conclusion of the study is that the development will have a beneficial effect on odour exposure and impact risk in comparison to the ‘do-nothing’ scenario in the next four years. A residual risk of impact will remain to up to 4 no. properties during this period and up to 6 no. properties until the landfill is completed, based on the application of the precautionary indicative odour impact criteria applied in the study.

With regard to impacts on climate, the proposed biological treatment facility will produce stabilised waste which will be placed in an inert/stabilised cells and reduce the environmental impacts of landfilling such as landfill gas generation. It is considered that the operational phase of the development will have an overall positive impact on both local and national climate due to the collection and conversion of landfill gas that would have contributed to greenhouse gas emissions

and the generation of renewable electricity which will help to contribute towards Irelands move from dependence on fossil fuels to use of renewable energy.

In terms of cumulative impacts the EIAR details a number of facilities within the area that operate under licence from the EPA. These facilities are subject to monitoring and are located between 4-10km from the site and therefore not likely to act in combination with the proposed development to result in significant odour emissions. During the operational phase of the landfill, it is considered that the overall impact on climate will be positive and no cumulative impacts are envisaged.

The EIAR also considers permitted development in the vicinity which are primarily housing and commercial. Due to the nature of these development, which are removed from the site, no in-combination effects on odour or other emissions are predicted. Reference is also made to a number of solar farms which have been permitted, which when taken in combination with the Knockharley facility will have a positive impact on climate.

Mitigation measures

Mitigation during construction

The main emissions during construction will be dust and vehicle emissions.

It is proposed to implement standard best practice to control dust and PM_{10} during construction. This includes implementation of a dust control plan which will form part of the CEMP. The measures will include controls on vehicle speeds on the site, water browser to spray haul roads/work areas, cleaning of site/ public roads, wetting down of soil stockpiles during dry periods, replanting of earthen berms immediately following construction, use of wheel wash by all vehicles leaving the site, recording of dust complaints and monitoring.

No mitigation measures are required to control vehicle emissions as these are predicted to be within the air quality guidelines and have a neutral impact on ambient air quality.

Mitigation during operation

Similar measures to those operated during construction to control dust nuisance associated with vehicle movements will be implemented during the operational. With regard to the IBA facility, stockpiles will be weathered under cover and will be

handled at an appropriate moisture content to prevent dust emissions. Waste including IBA will be hauled to the site in sealed containers and all waste disposed if in the landfill will be covered daily.

A biofilter will remove dust generated by the biological treatment facility preventing any release to the atmosphere and all waste handled will be handled indoors under negative air pressure. The building will also be fitted with fast action roller shutter doors to prevent escape of emissions.

Predicted emissions from the landfill gas plant on the site are within air quality guidelines and will not impact on ambient air quality. No mitigation is therefore considered necessary.

The proposed operations at Knockharley with the potential to create odour include the reception of MSW fines for composting within the biological treatment facility and landfilling of waste and fugitive emissions associated with landfill gas.

Mitigation measures include:

- Updating of Odour Management Plan for the facility.
- Modification of filling schedule so that stabilised, inert and non-biodegradable fractions of MSW will commence filling from the northern end of the landfill and move south. Waste with a potential to generate landfill gas will not be filled north of cells 21/22, to reduce exposure to receptors in the north.
- Use of hermetically sealed geo-multicovers for immediate capping to mitigate the potential for fugitive emissions through the intermediate capping.
- Waste activities at the biological treatment facility will be carried out indoors. The building will be ventilated via a biofilter odour control unit with treated emissions discharged via a 20m stack to enhance dispersion.
- Key mitigation measures that are currently in place will continue including scrutiny and screening of waste to prevent particularly odours, immediate compaction of waste, immediate landfilling of waste once tipped, use of daily cover in accordance with the provisions of the licence, regular removal of leachate, use of mobile fog spray system when required.
- Long term odour control will be achieved via the active landfill gas extraction system which collects gas under negative pressure, reducing the potential for odours to be released in an uncontrolled manner. and odour assessment.

Residual Impacts

The only residual impact that is predicted is associated with odour emissions.

Conclusion

- I accept that the potential impacts of the proposed development on air quality and climate have been comprehensively assessed in accordance with recognised guidance and practice.
- I accept that it has been demonstrated that no significant effects from dust, PM_{10}, emissions from the gas utilisation plant or the biological treatment facility which would impact on air quality or climate are likely during the construction or operational stages of the development.
- The risk of significant impacts on residential receptors arising from odour is likely to be reduced but even following mitigation there is potential for effects on a small number of properties up until such time as the landfill is fully capped. The development of a second active working face to the north and the development of the IBA cells to the east will help to reduce the potential for odours on sensitive receptors.
- I accept that the proposed development will be positive in terms of impacts on climate.

The majority of issues raised in the submissions relate to potential impacts from dust and odour, which is assessed above under Section 9 (Planning Assessment). The level of odour complaints is reducing, potentially associated with the pre-treatment of biodegradable waste prior to landfilling. The ongoing control of odour is a matter for the EPA under the requirements of the IE licence. Subject to appropriate management and controls, I accept that the proposed development would not significantly increase odour or other emissions to ait during the construction or operational phases of the development.

I have considered all the submissions made in relation to air and climate and I am satisfied that they have been appropriately addressed in terms of the application and that no significant adverse effect is likely to arise.

10.6. Roads, Traffic & Transportation

EIAR summary

Chapter 8 of the EIAR provides an assessment of the impact of the proposed development on roads and traffic and is supported by Appendix 8.1 – 8.4 (Volume 3 of the EIAR.

The EIAR describes the existing environment in the context of the existing road network. It describes the traffic study methodology, existing traffic conditions and the potential impacts likely to arise from the proposed development.

Section 8.2.6 of the EIAR provides details of traffic surveys conducted in 2010, 2015 and 2016 which include Automatic Traffic Counter (ATC) surveys conducted on the mainline carriageway south of the site and classified CCTV turning count surveys at the existing site access and at other junctions on the N2 likely to be impacted by landfill traffic. These surveys provide detailed information on traffic flows, (including HGV) northbound/southbound on the N2 and details of traffic generated by the existing landfill. The information gathered from the 2015 and 2016 surveys indicates that the N2 carries practically all landfill generated traffic and to a lesser extent the R150 (east of O' Brien's Cross) and the R153 (west of Balrath Cross Roads).

The 2010 survey data shows that the landfill site generated a total two-way flow of 73 no. HGV movements (36 inbound and 37 outbound) over the working day and a total two-way flow of 29 no. light vehicle movements (15 inbound and 14 outbound). In order to establish the distribution of HGV traffic from the wider road network, weighbridge records for the site were analysed. The traffic surveys of 2010 taken together with the weighbridge data for 2016 show that HGV traffic generated by the site is currently distributed as follows; to/from N2 north 5%, to/from N2 south 85%, to/from R150 5% and to/from the R153 5%.

Potential Significant effects

The primary generators of traffic during construction will be construction staff and the delivery of construction materials (structural steel, cladding and concrete for the biowaste facility and leachate infrastructure).

In all cases the HGV traffic generated by the operation of the proposed development exceeds that of the respective construction periods combined with existing landfill

traffic generation and accordingly the traffic scenarios where the proposed development is operational represents a worst-case scenario. Therefore, the traffic assessment does not include for a separate capacity analysis during the construction period.

Once operational, it is proposed to increase the volume of waste accepted at the facility from 88,000 tonnes per annum to a maximum annual total of 440,000 tonnes. The waste will be transported in vehicles, trailers etc ranging from 23.8 tonnes to 25.6 tonnes. In addition to waste, there will be other HGV traffic associated with the transport of construction fill (estimated at 50,000) and cover materials. There will also be HGV traffic associated with export of leachate and tree felling could generate up to 75 HGV movements over a 5 -year period.

Table 8.5 of the EIAR provides an estimate of the potential annual and daily average traffic generation of the landfill site under the current proposals. It is forecast that 78 HGV and 35 LGV trips per day will be generated by the proposed development. The development peak hour is identified in the EIAR as 10.00-12.00 hours and during this time 21 HGV's will enter the site and 13 HGV's will depart. The traffic generation forecast during the traditional commuter peak hour of 08.00-09.00 hours is 5 HGV's entering the site and 7 departing. No HGV traffic is generated in the traditional evening commuter peak hour of 17.00-18.00 hours.

In terms of the distribution of traffic at the site access and the road network, it is expected that distribution patterns are expected to broadly reflect those of the May 2010 surveys with the largest proportion originating to/from the south. For the purposes of the traffic analyses the established 2010 surveyed traffic distribution patterns (Table 8.3) for the greater road network are considered a reasonable estimate of the likely future site traffic distribution locally at the site access. It is predicted that 5% of HGV traffic at the site access will be to/from the north and 95% will be to/from the south. LGV traffic will be 41% to/from the north and 59% to/from the south.

Arising from the transport assessment, it is concluded that the corridor upon which development generated traffic will have the greatest impact is the N2 including O Brien's Cross. Table 8-10 provides a summary of the current and forecast future traffic flows on the receiving road network from the landfill. The figures are based

upon the estimated AADT values for the N2 and R150 which are the roads affected by the proposed development. It is indicated that the proposed development would result in an incremental increase over the traffic generation of the existing development in the order of 1.1%. These figures are not significant in the context of the overall carrying capacity of the N2.

It is concluded in the EIAR that forecast incremental increases in traffic arising as a direct result of the development are within typical daily fluctuations in traffic volumes on the road network. The forecast increases are also significantly below the threshold of 10% in uncongested areas set out in the NRA's Traffic and Transport Assessment Guidelines as requiring detailed assessment of junction performance.

Having regard to the standard of access provided at the existing landfill, it is concluded that the potential incremental increase in traffic generation arising at the existing site are highly unlikely to compromise the capacity or the level of service provided by the existing local or strategic roads network serving the site. In summary the impact of the traffic arising from the proposed development of the site will not give rise to significant impact on the capacity and operational efficiency of the receiving network, including the N2.

The EIAR concludes that the proposed development proposal will result in very modest increase in traffic flows and that the impact on the operation and capacity of the network will not be significant. The existing road infrastructure serving the site is provided with features designed to increase road safety (auxiliary turning lanes), maintain the free flow of traffic and preserve the carrying capacity of the road. It has been demonstrated that the infrastructure is satisfactory for the proposed intensified use. No mitigation measures are considered necessary.

Conclusion

Further information was sought by the Board on the issue of roads and traffic to address the concerns raised in the submissions. I have considered and assessed this information under Section 9 (Planning Assessment).

I have considered all the submissions made in relation roads, traffic and transportation and I am satisfied that they have been appropriately addressed in terms of the application and that no significant adverse effect is likely to arise.

10.7. Noise & Vibration

EIAR summary

Chapter 9 of the EIAR provides an assessment of potential noise and vibration impacts arising from the proposed development, for both the construction and operational phases. It describes the assessment methodology and relevant guidance in the form of noise standards and technical advice. The site currently operates under licence from the EPA, which sets noise emission limits and monitoring requirements. Appendix 9.1 (Volume 3) provides details of receptor locations.

The noise sources around the site are described in the EIAR as typically rural with more noticeable traffic noise from the N2 to the east. Quarterly noise monitoring is ongoing in accordance with the IE licence and is undertaken at four boundary locations (N1, N2, N3 and N4) to the north and east of the site. The locations of the monitoring points are shown on Drawing No LW14-821-01-P-0050-001 in Volume 4 of the EIAR. The monitoring data provides details of historical noise levels associated with the existing facility and the receiving environment.

Under the conditions of the EPA licence, a daytime limit of 55 dB(A)L_{Aeq} (30 minutes) and night-time limit of 45 dB(A)L_{Aeq} (30 minutes) applies. In the period 2015 to Q3 2018 there were no exceedances of the daytime limit at the facility (Table 9.7). An updated licence will be required for the new development and in line with NG4 [18], a new evening period (19.00-23.00) will form part of the updated licence.

Potential significant effects

A wide range of activities will take place during construction with the potential to generate noise including site clearance and preparation works, construction of the northern surface water attenuation pond, holding pond, wetland, construction of IBA cells, construction of buildings, delivery of materials, installation of plant, construction of haul routes, service works and traffic.

In the absence of any statutory Irish Guidance relating to the maximum permissible noise level that may be generated during the construction of a project, the EIAR relies on British Standard *BS 5228-1: 2009 +A1: Code of Practice for Noise and Vibration Control on Construction and Open Sites- Part 1 Noise'* . The standard sets out power levels and LAeq noise levels of plant items encountered on construction

[18] Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities (NG4), EPA 2016.

sites. The standard contains a number of methods for the assessment of the significance of noise effects. The *ABC Method* from this standard is used to derive appropriate noise limits for the proposed development. The threshold limits from the code of practice are set out in Table 9.2 of the EIAR, based on existing ambient levels, which if exceeded, indicate a significant effect.

In accordance with the guidance provided in BS: 5228-1, the nearest residential dwellings to the proposed development are afforded Category A designation (65 dB LAeq, 1 hr during daytime periods). Should the modelled total noise level (including construction noise and operational noise) exceed the 65 dB LAeq, 1 hr during daytime periods, then a potential significant effect is predicted. The construction activities will be confined to daytime, unless otherwise agreed. For the purposes of noise modelling a worst-case construction scenario was adopted during which a range of activities are occurring with mobile plant operating simultaneously (section 9.6.1).

The EIAR provides details of the predicted noise level for each assumed element of plant/machinery and predicted noise level associated with each construction activity (cell construction, construction of buildings, leachate management facility, leachate lagoon, attenuation pond and wetland) for the worst-case scenario (Table 9.8 to Table 9.11). Predicted noise levels are calculated for the nearest occupied dwelling and conservative assumptions were made regarding the operating time of mobile and other plant, separation distances between plant and sensitive receptors and the acoustic nature of intervening ground to ensure that the model is robust.

The cumulative construction and operational impacts were assessed, and in all cases the predicted noise levels are below the construction noise limit of 65 dB LAeq, 1 hr derived from BS5228-1.

During the operational of the facility there are also many noise sources which include the delivery of waste to the facility, the transportation of waste around the site, waste placement, placement of daily cover/ intermediate cover and final cap, construction of cells, leachate management system and landfill gas engines and flares.

There will be new noise sources associated with the proposal including:

- An increase in the delivery of waste material to the facility (day-time only)

- Activity at the biological treatment facility (waste acceptance day-time only)
- An increase in the transportation of waste material around the facility (day-time only)
- IBA handling and placement (day-time only)
- Construction of berms
- Tree felling.

Noise modelling was carried out to predict noise levels associated with stationary or minimal movement sources as well as on-site traffic movements according to International Standard ISO 6313-2: 1996 *Acoustics-Attenuation of sound outdoor-Part 2: General Method of Calculation* and using Bruel & Kjaer Predictor software. All significant noise sources and propagation effects were accounted for in the model, which also makes conservative assumptions in relation to operating plant/machinery

Each of the potential noise sources on the site were identified and reference sound power data or sound pressure level data assigned. The potential noise sources with each activity and from traffic movement is described in detail in the EIAR (Table 9.12 to 9.21). The model was used to predict operational noise levels at 72 no. receptor locations and these were assessed against the expected operational noise criteria described in Section 9.4.2 of the EIAR, to include a new evening period in line with NG4.

During daytime periods, twelve scenarios were assessed (section 9.6.2) to ensure that the worst case at various different stages throughout the lifetime of the development were modelled. The noise levels are stated to be the maximum predicted noise levels and not likely to be achieved in practice, representing a worst case scenario.

The predicted operational daytime noise level from the twelve daytime scenario's at ground floor and first floor levels (where applicable) are set out in Table 9.23 & Table 9.24 of the EIAR. In general, the predicted noise levels are below the daytime noise limit in the licence (55 dBA). There are 2 no. scenario's (2b and 3b) where the predicted noise levels are above the daytime noise level at 2 no noise sensitive receptors (ground floor level). One of these receptors is within the landownership

boundary. In addition, scenario 3a shows predicted noise levels above the daytime noise level at 2 no. receptors at first floor level.

The ground floor exceedances are stated to be predominantly due to the construction of nearby earth berms, which are being installed to mitigate against any future potential impacts from the proposed development. The average duration of construction associated with the berms is estimated at 2-3 weeks but may be over a longer period. Once the construction of the earth berm activities that are close to the noise sensitive locations cease, the noise emissions from the rest of the proposed development will be below the daytime noise limit. It is expected that the maximum noise levels predicted will be for a short duration and given the positive impacts the earth berms will have on noise sensitive locations, the short-term negative impact is considered to be reasonable.

There is one scenario (Scenario 3a) where the predicted noise level exceeds the noise limit at 2 no. sensitive locations at first floor level, with no exceedances at ground floor level. It is implied in the EIAR that the exceedances are associated with tree felling which will occur over a short period and the maximum noise levels predicted will therefore be for a short period.

During nigh-time periods, waste placement activities and ancillary works cease and static plant such as pumps and blowers in the biological treatment facility and the landfill gas plant will remain operational. These sources were modelled and assessed against the evening and night-time noise limits. A single scenario was modelled. Table 9.25 and Table 9.26 present the predicted noise levels during evening and night-time periods at ground and first floor levels. The predicted noise levels are below the evening and night-time noise limits set out in the licence and no significant effects are predicted.

There will also be noise generated as a result of increased traffic on the N2 and on the dedicated access route. The predicted noise from traffic was modelled using CRTN [19]. It is noted that in 2016 the N2 had an AADT of 8, 812 with daily HGV traffic at 1,022. It is predicted that the proposed development will increase this daily HGV traffic by 5.9% to 1,082 during the operational phase of development. The conclusion

[19] Calculation of Road Traffic Noise (CRTN Department of Transport Welsh Office, HMSO 1988

reached in the EIAR is that when the predicted operational traffic flow is added to the existing baseline traffic flow, the baseline noise level shows a negligible increase in predicted traffic noise.

Cumulative Operational Impacts

All waste management activities associated with the existing and proposed development and on site HGV movements were considered in the noise model, therefore cumulative impacts from the site's activities have been considered. While there are other facilities in the area with noise generating potential, none are close enough to the landfill to generate cumulative noise impacts.

Proposed Mitigation

Standard best practice measures are proposed to mitigate noise impacts during construction including controls on hours of operation of the facility, (use of machinery/plant with low vibration emissions, proper maintenance of plant/machinery, locate equipment as far as possible from sensitive receptors etc).

The noise control measures will be included in the CEMP and will include the appointment of a person responsible for matters relating to noise/vibration, noise monitoring at noise sensitive locations during critical periods etc)

During the operational stage of the development, it is predicted that there are 3 no. scenario's where noise levels are above the daytime limit, which are attributable to tree felling and construction of berms, will be temporary and short term in duration and ultimately serve to protect the noise sensitive locations in the long term. In order to mitigate short term effects mitigation measures will be employed to reduce potential effects on receptors. In addition to the measures specified during construction, noise impacts will be reduced where reasonably practicable by the following:

- planning of construction stage including starting closest to receptor and building away to mitigate potential ongoing berm construction noise impact.
- orientating plant to minimise noise impacts on receptors.
- erection of temporary noise barriers

- ensure that noisy plant/equipment are not used for long periods and at appropriate times
- phasing of works to reduce potential on-time to lower the noise impact
- regular monitoring of noise levels
- investigate and record noise complaints.

In addition, a number of earth berms will be constructed. Berm A will be constructed first due to the long term positive impact for receptors to the east and north-east. The programme for constructing/filling cells was developed to minimise noise impacts where possible. Filling of cells will start close to receptors and move away so that the filled cells will also be used as berms to minimise the noise impact on nearby receptors.

With mitigation measures, the temporary noise impact from the felling of trees and the construction of Berm A and B are expected to be below the noise limit. The operational noise impact from the remainder of the proposed development will also be below the daytime noise limit.

Conclusion

- I consider that the noise assessment is robust and identifies all of the potential impacts associated with both the construction and operational stage of the project.
- I accept that it has been demonstrated that subject to the mitigation measures outline in the EIAR that noise associated with the construction phase of the development is not likely to result in significant effects on sensitive receptors.
- I accept that a small number of receptors close to the site will be impacted during the operational phase associated with tree felling and the construction of berms but these impacts will be temporary and short-term and mitigated by the works programme and good construction practice.
- The issue of noise emissions is the responsibility of the EPA .There will be regular monitoring of noise levels to ensure compliance with the IE licence under which the facility operates.

I have assessed the main issues raised by the observers in Section 9 above (Planning Assessment). I have considered all the submissions made in relation noise and vibration and I am satisfied that they have been appropriately addressed in terms of the application and that no significant adverse effect is likely to arise.

10.8. **Biodiversity**

EIAR summary

Chapter 10 of the EIAR provides an ecological assessment of the proposed development at the Knockharley site. It describes the survey methodologies, guidance and the sources of information used. In addition to desk top studies using recognised data sources, previously commissioned ecological surveys of the site were used to inform the current appraisal, with ground truthing of the areas for the development carried out between 2015/2016.

The site is not located within a European Site and there are no designated sites within the immediate vicinity. There are a number of designated sites within 15km of the landfill, including Natura 2000 sites and NHA's (Fig 10.2).

Habitats

The EIAR identifies the habitats surrounding the landfill footprint (Fig 10-3). All the habitats are assessed as being of local importance, with some considered of higher value due to the higher diversity of flora present or because they provide shelter/foraging habitat for local birds, wildlife and invertebrate. The Knockharley Stream which flows through the northern part of the site is considered to be of some ecological value but has limited habitat for fish and previous surveys have shown that there are no salmonid fish in the steam.

No rare or protected species were found on the site and no invasive species were recorded.

Birds

Bird surveys were conducted in 2010, 2015 and 2016 and the majority of the species recorded are Green listed i.e. not of special conservation concern, with a small number of species are of High Conservation Concern (Red-listed) and these include Black-headed Gull, Herring Gull and Meadow Pipit.

Wintering surveys were carried in December 2015, January 2016 and November 2018 (Table 10-11). Additional species recorded during the winter included Common Gull, Stonechat, Fieldfare, Redwing, Starling, Greenfinch, Collared Dove, Great Black-backed Gull and Yellowhammer. Buzzard were also observed during the 2016 and 2018 surveys.

Mammals

A total of 7 mammal species were recorded during the site walkover (Table 10-12) in 2010. These included Fox, Brown Rat, Rabbit, Badger, Irish Hare, Otter and Wood Mouse. Figure 10-4 shows the location of the main mammal records of the site. Evidence of badger activity was found to the east/south east of the site. No badger setts were found and there was no evidence of breeding badgers. There was evidence of otter along the Knockharley Stream and to the northeast of the site in the northwest of the site. No evidence of breeding (Otter holt) was found. Several sightings of Irish Hare were made to the northwest of the site. Common Frog is present on the site.

Bats

No bat roost sites were found but there are mature trees on the site which may have potential (Fig 10-4). The results of the 2016 bat survey (Table 10-14) indicate that Leisler's bat, brown-long eared bat, common pipistrelle and soprano bats are using some of the sites hedgerows and treelines to forage and/or commute (Fig 10-5).

Potential significant effects

The proposed development will result in direct impacts on habitats and flora associated with the construction of the new elements of the development. This impact will be permanent. These habitats are of local importance and the majority are assessed of low ecological value. The woodland, treelines and hedgerows and some wet/improved grassland habitats are considered to be of higher value due to the diversity of flora species present and because they provide cover and foraging habitat for local wildlife.

There will be disturbance of habitat associated with the diversion of Knockharley Stream. There is potential for release of sediments and nutrients to surface water during construction, with the potential to impact on water quality and aquatic species.

The mammal species recorded on the site are not of high conservation concern and are likely to be widespread and common in the local environment. No breeding sites for Otter or badger were recorded. There will be a temporary slight impact on badger arising from disturbance, as badgers are likely to avoid the area.

The works associated with the installation of a culvert on the steam and felling works has the potential to disturb otter. Construction activity also has the potential to lower water quality which may have an indirect impact on the species arising from a reduction in its food source. However, surveys of the stream reveal that it contains limited habitat for fish.

During the 2016 survey bats were observed within the northern central section of the proposed development site, commuting/feeding within/along habitats previously deemed to be of high value to bats. Many of these hedgerows/treelines will be removed as part of the permitted landfill. The removal of treelines and hedgerows will be limited and located in the areas of the proposed IBA facility, biological treatment facility and surface water attenuation lagoon. Berms planted with native deciduous trees will also be constructed in this area and are likely to be used by local bats for foraging and commuting. The loss of hedgerows/treelines is deemed to be a medium-term moderate impact on bats. Night time works will not be undertaken and therefore noise, and light disturbance is not envisaged for wildlife including bats.

No Annex 1 birds listed in the EU Directive were recorded on the site. It is the construction stage which will have the greatest impact in terms of disturbance and loss of nesting habitat. The construction stage will take place in a phased manner which will allow disturbed birds to relocate to alternative suitable habitats on and adjacent to the site. During the construction stage a limited number of treelines and hedgerows will be removed, as will 12.5 ha of commercial woodland (in a phased manner), which will be felled whether the proposed development proceeds or not. While felling and replanting will be phased, regrowth of trees will take some time to Tree felling will be undertaken outside of the bird nesting season.

Other species - The Common Frog is expected to be widespread on the site given the available wet habitats and any displaced frogs will be able to move to alternative habitats elsewhere on the site.

Potential Impacts during operational stage

During the operational stage of the development, felled trees will be replaced with native deciduous trees which are of higher ecological value to local wildlife.

To date the operation of the facility is stated not to have had a negative impact on water quality. The southern and northern surface water management system will direct surface water flows from the site to the attenuation ponds and wetlands prior to discharge to the Knockharley Sream. The pond will attenuate flows and allow suspended solids to settle. The outlet from the pond can be shut to prevent discharge to the watercourse in the event of a suspected contamination incident. Automated monitors will be triggered to close if monitored water quality levels rise/fall above/below acceptable levels or trigger levels, isolating contaminated water. Water is discharged from the pond to a constructed wetland for final polishing before discharge to the watercourse. Therefore, the potential for sediment release to watercourses is low during the operational stage. Due to the insignificant increase in potential run-off from the site no impact is envisaged on the water quality of Knockharely Stream.

During the operational stage, mammals are likely to continue to use the site and the new woodland created will provide additional habitat for cover and foraging. The increased activity in the north east section of the site in the location of the IBA facility may deter mammals from using the site, which will result in slight localised disturbance. As the woodland and landscaping matures, this impact will be reduced.

The felled woodland will be replaced with native broadleaved species which will be of higher ecological value and will provide cover and foraging habitat and nesting habitat for birds as the trees mature. This woodland will be commercial forestry and will be felled in the future. Planting of deciduous woodland will have a positive short term moderate impact on local flora.

Cumulative Impacts

Cumulative impacts are discussed in Section 10.5.5 of the EIAR. The Draft County Meath Biodiversity Action Plan 2015-2020 is stated to align with the objectives of the development plan in terms of implementing the requirements of the Habitats Directive and protecting biodiversity. These plans, their objectives and policies will aid in protecting and ensuring that cumulative effects on European Sites do not result in adversely affecting the integrity of European Sites.

The EIAR provides details of developments that have been permitted in Knockharley and adjacent townlands within the last 5 years and the existence of facilities in the vicinity that operate under licence from the EPA. The current proposal for construction on the site is not likely to give rise to impacts on the Knockharley Stream following the implementation of best practice construction measures and so cumulative impacts with other projects is not likely to arise. Furthermore, it is not considered that any existing or future smaller-scale development, which mainly comprises one-off housing, will in combination with the proposed development, cause significant cumulative impacts.

Proposed Mitigation

A range of mitigation measures will be implemented during the construction and operational stage to mitigate potential impacts on biodiversity. The construction stage measures would include the retention of habitats/treelines/hedgerows where possible, felling of trees outside bird breeding and bat breeding season, survey of trees prior to felling by bat specialist, pre-construction survey by ecologist for presence of badger setts/otter holts and that construction would be limited to day-time to minimise disturbance to nocturnal species or roosting birds.

During stream diversion and culverting vegetation, clearance will be kept to a minimum and in-stream sedimentation traps will be installed prior to construction. All diverted water/run-off will be sent to the onsite surface water attenuation lagoon to minimise sediment entering the steam, if required. Any in-stream works will be undertaken in consultation with the Planning Authority and Inland Fisheries Ireland (IFI) and subject to Section 50 approval from the OPW. Works will be carried out during the period July-September to protect fisheries downstream unless prior agreement has been reached with the IFI.

Standard best practice measures will be implemented to prevent the spread of invasive species or disease entering the wate and to prevent the spread of crayfish plague and other invasive species.

Standard best practice mitigation measures are proposed to protect water quality and reduce sediment and nutrient loading to watercourses, to reduce run-off and prevent flooding.

During the operational stage replacement tree planting and new tree planting will comprise native deciduous tree species (Landscape Masterplan LW14-821-01-P-0050-012). Excessive additional lighting around the site will be avoided to reduce disturbance to nocturnal mammals and birds.

The surface water management system will be in place and will mitigate any potential impacts on hydrology and surface water quality. Monitoring will be required in compliance with the IE licence.

The conceptual drainage system has been designed to work effectively during the operational stage. Surface water run-off will discharge to the drainage swales during rain events. The attenuation ponds will be permanent features and will continue to filter the run-off from the site should any accidental release of silt combine with the surface water run-off during operational activities. Surface water run-off from the IBA perimeter road will be directed to the IBA weathering area leachate collection system to avoid dust contamination of drainage outlets.

The mitigation measures applicable for spills during the construction stage are applicable during the operational stage.

There will be continuous monitoring of surface water quality at the outfall from the surface water attenuation ponds to the wetland. Routine surface water sampling will continue to be carried out in accordance with the licence.

Decommissioning

It is proposed to leave the surface water management system in situ and this will mitigate any potential impacts during decommissioning activities. Temporary mitigation measures will also be put in place to protect watercourses in areas outside the in-situ water management system, such as silt traps, silt fencing and stilling ponds.

Residual Impacts

With the application of the proposed mitigation measures which includes monitoring, no significant residual impacts are envisaged.

Conclusion

Further information was sought by the Board on biodiversity to address the concerns raised in the submissions. I have considered and assessed this information above under Section 9 (Planning Assessment).

I have considered all the submissions made in relation to biodiversity and I am satisfied that they have been appropriately addressed in terms of the application and that no significant adverse effect.

10.9. **Land, soils and geology**

EIAR summary

Chapter 11 of the EIAR considers the potential effects of the development on land, soils and geology. It details the guidance and sources of information used in the compilation of this section of the EIAR. In addition to desk top studies using available data sources, site walkover and intrusive site investigations were undertaken to assess potential impacts. Appendix 11.1 of Volume 3 contains details of site investigation works and Appendix 11.2 contains groundwater quality results.

The soils, geology and hydrogeology of the area are described, and information is provided on groundwater vulnerability, existing groundwater quality, and monitoring in association with the operation of the existing landfill.

The site is underlain by Carboniferous aged (Namurian) Balrickard Formation (Fig 11.2). Numerous site investigations have been carried out on the site associated with the original landfill footprint and subsequent development (Section 11.3.7 of the EIAR). Bedrock recovered from the boreholes undertaken for the original site investigations comprise fine grained light-coloured sandstone and darker coloured siltstone/mudstone. The elevation of the bedrock surface varies from 40 to 50mOD, falling away towards the south of the site following the slope of the topography.

The soils underlying the site and the surrounding area comprise surface water gleys and groundwater gleys. The overburden consists of glacial till and varies in thickness from 12 to 21.5m across the site with the thickest deposits to the west and the thinnest to the east. Historic site investigations indicate that the till has low permeability.

There are no known areas of soil contamination within the proposed development site and none were noted during walk over surveys.

The site is located within one groundwater body (Realtage GWB), which achieved 'good status' (May 2015). It is underlain by a locally important aquifer, with a 'Low' vulnerability rating (Fig 11.5) due to the relatively thick cover of low permeability Glacial Till (>10m) overlying bedrock at the site. There are no groundwater sourced drinking water protection areas within the study area, the closest is 5.75km away (Slane Outer Protection Area). Fig 11.4 shows groundwater wells included in the GSI dataset, but it is acknowledged that there may be other wells in the study area which are not identified. The GSI lists two wells within 1km of the site boundary and a further 7 wells within a 5km radius, the majority of which are down-gradient. Mains water is generally available in the area.

Groundwater quality and groundwater level monitoring has been undertaken in accordance with the EPA licence. Groundwater trigger levels (GTL's) were set for the site and monitoring results are compared to those GTL's. The location of the monitoring wells is shown on Dwg No LW14-821-01-P0050-001 in Volume 4 of the EIAR. Based on the results from 2011-2018, similar concentrations across all parameters tested were detected in both the upgradient and down-gradient boreholes, indicating that the site activities are not impacting on the groundwater quality.

It is estimated that c 1,125,475 m3 of soil will be excavated for the proposed development (Table 11-6). Some of the material will be reused on site for the construction of the screening berms and recovered for use in the clay liners and for capping.

The construction work phasing will progress in sequence through 4 no. separate phases and will involve a combination of cutting and filling measures (Table 11.10). Phasing is assumed to proceed in 2 year intervals subsequent to planning approval.

All recovered overburden will be directed to the screening berms in a phased sequence Berm A to Berm E (Dwg No LW14-821-01-P-0050-011 Volume 4 of the EIAR. Final berm heights may vary to below the maximum 10.0m level subject to volumes of surplus material recovered during the works.

Potential significant effects

Soils and Geology

Construction will require the excavation and removal of topsoil and subsoil. Tree felling will be required to facilitate the construction of the screening berms to the northern and western boundaries of the site, and if not properly managed this could cause/contribute to ground condition instability due to ground vibration and ground loading from the forestry equipment. Due to the relatively flat topography and the absence of peat ground conditions, the potential impact of forestry on soils and geology is considered to be minimal.

Construction operations have the potential to result in a range of impacts including soil erosion from earthworks, excavations and temporary storage of excavated materials; sediment entrainment in run-off; soil contamination through leakage of stored fuels/ hydrocarbons etc; soil compaction due to movement of construction traffic, soil exposure which could lead to breakdown of soils rendering them unacceptable for re-use e.g., engineered clay liner.

Hydrogeology

The construction stage a significant quantity of glacial till will be removed, with the potential to expose the weathered bedrock to sources of contamination and temporarily increase the vulnerability of the aquifer. This is considered unlikely having regard to the depth of the till material below the site (10-15m). Dewatering may potentially be required if high groundwater is encountered during excavation.

There is also potential for contamination of groundwater from spillages or leakages of chemicals, unset concrete, hydrocarbons etc. The construction phase may result in hydrogeological impacts in the absence of mitigation by modifying the natural seepage of the soils, which may deprive ditches/streams of their natural supply of water which may lead to a reduced baseflow and reduced recharge to the bedrock aquifer. The construction of additional water channels and other infrastructure may result in localised drawdown of the water table. The magnitude of these impacts, prior to mitigation is considered to be of slight significance.

The proposed development is not expected to result in any significant negative cumulative effects during construction. There are no other significant industries in the locality that could act in combination with the proposed development to significantly effect soil, geology and hydrogeology.

During the operational stages few direct impacts are envisaged due to the design standards required and the operational conditions of the licence. The potential impacts in the absence of mitigation are related to the risk of accidents including uncontrolled leachate breakouts from the waste body or holding ponds, spillages during transport on site, accidental leaks/spillage of fuels/etc.

A summary of the potential impacts during the construction and operational stages of the development are set out in Table 11.13 of the EIAR.

Proposed mitigation

A suite of mitigation measures are proposed to avoid or reduce the potential impact of the development (Section 11.5 of the EIAR). Mitigation will in the first instance be achieved by design and best practice and will be subject to EPA approval. All works will be designed and checked by a geotechnical and civil engineer experienced in cell design, construction and operation. A method statement will be prepared for each element of the works. The surface water management infrastructure will be constructed in the northern catchment prior to other construction works. There will be scheduling of construction such that earthworks are not scheduled during severe weather conditions. In the event that groundwater is encountered it will be pumped and directed to the existing attenuation ponds or the proposed northern attenuation pond. Historic evidence shows that groundwater pumping has little if any influence on surrounding groundwater elevations.

Section 11.5.2 sets out details of the mitigation measures that will be implemented during the construction phase. These include the preparation of a CEMP which will define the work practices, environmental management procedures and management responsibilities relating to the construction stage. An OCEMP is contained in Appendix 2.0 of Volume 3. Standard best practice protocols will be employed to protect land, soil and geology during construction, including measures in relation to soil excavation, storage and removal, measures to control run-off of sediment, spill protection measures, refuelling, bunding of tanks etc. If is required, monitoring of groundwater supplies within an appropriate radius of the excavation will be carried out. Regarding slope stability detailed design best practice will be implemented. This will include design and supervision by a suitably qualified and experienced person (geotechnical engineer/engineering geologist and hydrologist/drainage engineer).

Regarding the protection of groundwater, all cells will require a composite lining in accordance with the Landfill Directive for non-hazardous cells. The surface water lagoon and the holding pond will be constructed using a similar lining system. All above ground storage tanks for leachates and other treatment related products will be bunded to contain a minimum storage volume.

The main potential impact identified during the operational stage is the risk of leachate reaching groundwater. This is considered negligible due to the in-situ composite landfill liner system which acts as a containment measure. Groundwater monitoring is required and will continue as part of the IE licence.

To mitigate against possible contamination of the exposed bedrock/aquifer, refuelling of machinery/plant during operation of the facility will only occur offsite or in specially designated areas such as site compounds using designated refuelling bowsers.

Residual Impacts

Table 11.14 summarises the residual impact and it shows that following the implementation of mitigation measures, the residual impact significance to the receiving environment would be moderate/slight to imperceptible during the construction period and imperceptible in all respects assessed during the operation of the proposed landfill. As a result of the mitigation measures being implemented, the proposed development is expected to have an imperceptible impact on the receiving environment. The proposed development is not expected to contribute to any significant, negative cumulative effects with other existing developments in the vicinity.

Conclusion

The greatest potential for impacts on soil, geology and hydrogeology will occur during the construction phase, which creates the potential for increased soil erosion, surface water run-off and potential contamination of groundwater. The impacts are identical to any construction site. Subject to the implementation of the mitigation measures proposed, I do not consider that the proposed development will result in significant adverse effects.

Concern was expressed in the submissions that the landfill could cause release of contaminants to soil and pose a threat to groundwater which could persist long after landfill closure. The landfill is designed in accordance with the EU Landfill Directive

1999/31/EC and the requirements of the EPA, to ensure that negative impacts on the environment do not occur. This is achieved by the landfill lining system, which acts as a containment measure, coupled with the leachate management system to ensure that contaminants are not discharged to soil and water.

The EIAR also refers to a groundwater risk assessment completed in February 2015 which concluded that there was evidence that the landfill has impacted on groundwater quality downgradient of the site and the engineered landfill liner and the low permeability of the subsoil provide sufficient protection of the groundwater resource from future impacts.

I have assessed the main issues raised by the observers in the Planning Assessment. I have considered all the submissions made in relation noise and vibration and I am satisfied that they have been appropriately addressed in terms of the application and that no significant adverse effect is likely to arise.

10.10. **Hydrology and Surface Water Quality**

EIAR summary

Chapter 12 assesses the potential impacts of the proposed development on the hydrological environment and water quality within the study area. It describes the methodology used in the assessment and relevant guidance. The assessment included a desk top study and a field assessment. This chapter is supported by Appendix 12.1 to Appendix 12.6 contained in Volume 3 of the EIAR.

The main waterbody is the Knockharley (or Flemingtown stream). The stream enters the site via a 1.0m culvert on the western boundary and into an open channel. The stream continues in an easterly direction and runs along part of the eastern boundary of the site. It continues southwards and discharges into the River Nanny c 2.89km south of the site boundary. The site has a watershed running east to west with natural outfalls to the south and north (Figure 12.2). The site is underlain by an aquifer which is classed as ‘Low Vulnerability’.

The national flood hazard mapping website indicates that there have been a number of historical flooding events in the vicinity of the site (Fig 12.3). None have been recorded on the landfill site and there are no areas defined as ‘benefitting lands’ indicated at the site or on lands adjacent to the stream up to its confluence with the River Nanny.

The indicative flood maps produced by the OPW to assist in flood risk assessment indicates Flood Zone A areas (an area with the probability of flooding in a 1 in100-year flood) occurring outside the site boundary coinciding with the stream to the north east and downstream of the site to the south of the wetland area along the course of the stream. An area with a 1 in 1000 probability of a flood event occurring (Flood Zone B) is shown within the site where further development is proposed. However, the surface water from lands draining towards this area have been diverted as part of earlier planning applications.

The hydrological study contained in Appendix 12-6 concluded that the current course of the Knockharley Stream can cater for a 1 in 100-year flood event without overtopping the bank. The 1 in 1000-year flood will exceed the stream banks in the vicinity of the proposed development area, but compensatory flood zone storage in the event of a 1 in 1000-year flood event is proposed as part of the development. The current landfill development avoids flood Zone A areas.

Drainage from the existing landfill is via an operating drainage system from the landfill facility which is directed towards a stormwater attenuation pond and to a constructed wetland before being discharged into the local drainage network and finally to the Kentstown Stream. The storm water attenuation pond is sized to receive all surface water run-off from the existing development and to allow suspended solids to settle and to control the rate of discharge from the site.

Surface water quality is currently monitored for a range of parameters on a quarterly basis at 8 locations around the landfill site under the conditions of the existing IE licence. These are shown on Drawing No LW14-821-01-P-050-001 in appendix 4 of the EIAR. The monitoring programme which has been carried out at the facility since 2001 and before waste was accepted, establishes baseline water quality and identified seasonal variations. There is a continuous monitoring programme in place at the surface water pond and at the discharge point for the wetland (SW9).

Surface water samples are analysed for a range of parameters. The results over the past 5 years were assessed and compared to the baseline. The results indicate that the levels of various parameters remained relatively stable and within the baseline range. The results of surface water monitoring with no significant impact from the landfill development.

It is proposed to divert the existing watercourse at the north western corner of the site. This is permitted under the existing planning permission for the landfill and is required to facilitate the construction of the permitted cells and to ensure that the watercourse will run sufficiently clear of the construction works. The steam will be diverted for c.171m to the north of the site. The proposed drainage layout is shown in Dwg no LW14-821-01-P-000-004 to 011 and on Fig 12-6 of the EIAR.

It is proposed to install an additional storm water outfall on the northern boundary (Fig 12.6). A four-stage treatment train will cater for infrastructure in the northern watershed i.e., permitted landfill area runoff and proposed IBA runoff. In addition, provision will also be required to provide additional compensatory flooding to replace that which will be removed by the proposed development footprint.

Drainage from the proposed biological treatment facility and leachate management facility will be directed to the existing southern attenuation pond (Dwg No's LW14-821-01-P-004 to LW14-821-01-P-0011). It has been established that the existing southern attenuation pond has adequate capacity to accommodate increased run-off from the proposed new development (Appendix 12.1).

Surface water run-off from all roads and hard standings north of the watershed divide including run-off from the proposed IBA facility and permitted landfill will be diverted to the proposed northern water surface water management system. The new surface water management infrastructure will include a holding pond, surface water attenuation pond and constructed wetland. The water will drain via landfill perimeter swales into the attenuation pond and from there to a wetland, prior to discharge into the Knockharley Stream.

The new surface water management system will be constructed in a low-lying area of the site which provides storage in a 1:1000-year storm event. The flood plain footprint and proposed surface water attenuation pond is shown in Fig 12-6 of the EIAR. It is proposed to off-set the lost storage by creating upstream compensatory storage of an existing and adjacent culvert within the Knockharley Stream.

A site-specific Flood Risk Assessment (FRA) was prepared as part of the proposal (Appendix 12.5). It is supported by a hydrological assessment and hydraulic modelling of Knockharley Stream (Appendix 12.6). The modelling illustrates that the existing stream could cater for a 1 in 100-year event without overtopping the river

bank, but that the 1 in 1000-year flood would result in overtopping. Following the provision of the culvert and the diversion of the stream in a 1:1000-year event the upstream end of the culvert will be surcharged, activating a designated flood compensation storage on site and therefore not causing an increase in flooding downstream of the site.

The hydrological study shows that out of bank flooding occurs in high flow events as a result of an existing constriction of the stream. To mitigate flooding the new storm water management system makes provision for a flow compensation culvert which will be designed to allow 1:100-year events to pass with minimal impact on upstream levels (with20% allowance for climate change). In the event of a 1:1000-year event, the culvert will throttle flows and provide compensatory storage immediately upstream of the culvert.

The modelling shows that the risk of flooding is not increased anywhere, other than within the site as a result of the proposed development. The increase in flood risk within the site boundary is a feature of the hydraulic design, which is to provide a flood compensation storage area for flows from extreme events. The proposed culvert and stream diversion does not result in an increase in floor risk upstream or downstream of the development boundary.

Potential significant effects

During the construction and operational stages of the development phase there is potential for impacts on surface water and hydrology due to increased run-off, flooding, sediment loading, nutrient loading, uncontrolled release of leachate and accidental spills. Table 12-13 provides a summary of the potential hydrological and surface water quality impacts associated with each phase of the development. The sensitive receptor is the River Nanny.

Mitigation

The proposed mitigation measures are set out in section 12.7 of the EIAR.

Mitigation measures

Section 12.7 of the EIAR documents the mitigation measures proposed for each phase of the development to minimise potential impacts on hydrology and water quality.

The surface water management system will be constructed prior to other construction activity to cater for run-off. Once the system is in place with a dedicated outlet to the Knockharley Stream, surface water run-off into the receiving waters will revert to greenfield rates. Site drainage, including silt traps and stilling ponds will be put in place in parallel with or ahead of construction to ensure a functioning drainage system prior to excavations.

Mitigation measures will be employed for the control of sediment/nutrient loading, and spills in accordance with standard best practice and include installation of silt traps, silt fences, appropriate storage of stockpiled material, tree clearance in accordance with established guidance, provision of a designated concrete wash-down area, provision of additional wheel washing facilities, bunded areas for tanks, designated refuelling areas, spill protection measures etc. A suitably qualified person will be appointed to ensure that the effective implementation of the CEMP on site.

To mitigate flooding, a compensatory flood culvert will provide compensatory storage for the floodplain storage lost through the construction of the northern surface water management and permitted cell development.

In-stream sedimentation traps will be in place prior to stream diversion and proposed culverting the works will be undertaken in consultation with the planning authority and Inland Fisheries Ireland and subject to Section 50 approval from the OPW. The works will be carried out under low flow conditions and during the period July-September to minimise impacts on fisheries downstream. No works will take place during extreme weather conditions.

The existing attenuation pond to the south together with the new attenuation pond to the north will mitigate any increase in the rate of run-off. The 4-stage treatment train will retain and treat the discharges from the new surfaces as a result of the development and reduce any risk of flooding downstream. The conceptual design drainage has been designed to complement existing overland flow, which will reduce run-off.

During the operational stage, the surface water management system will mitigate any potential impacts on hydrology and surface water quality. Regular visual inspections and monitoring will be required in accordance with the IE licence. Surface water run-off will discharge to the drainage swales during rain events. These

swales will have vegetated during this stage of the development and will further attenuate flows and reduce the amount of sediment discharging from the site. The attenuation ponds will continue to filter run-off from the site. Standard mitigation measures will be applicable for spills that may arise.

Mitigation measures for decommissioning

Following the cessation of waste acceptance activities at the facility there will be a period of aftercare and restoration. Decommissioning will be subject to EPA approval. The surface water management system will remain in place which will mitigate any potential impacts that will arise during this phase of the development. Temporary mitigation measures will also be implemented to protect watercourses in areas outside of the in-situ water management system i.e., provisions of silt traps, silt fencing and stilling ponds.

Residual Impacts

Following the implementation of the mitigation measures, the conclusion reached in the EIAR is that the residual risk to receiving watercourses will be negligible during the construction and operational phases of the development.

In terms of residual impacts, the effects of the proposed development on downstream receptors is expected to be low taking into account the implementation and efficacy of the mitigation measures (Table 12. 14).

Conclusion

The main concerns raised in the submissions are that the landfill is impacting on water quality. Concerns were expressed regarding the proposal to discharge surface water from the northern end of the site into Knockharley Stream which itself suffers from poor water quality. It is also questioned how the provisions regarding the 1:1000-year storm event could be guaranteed.

Surface water quality is monitored upstream and downstream of the landfill facility under the requirements of the IE licence. Surface water samples are examined each quarter for a range of parameters (Schedule D of the licence). There is also a continuous monitoring programme in place at the surface water pond and at the discharge point from the wetland. There is no evidence that the landfill is impacting on water quality. Water quality was noted to be ‘Poor’ both upstream and

downstream of the facility indicating that influences external to and upstream of the site are impacting on its status.

With regard to the concerns relating to discharge surface water into Knockharley Stream at northern end of site, as noted, the site has a water shed bisecting the site with natural outfalls to the south and north (Fig 12.2 of the EIAR). Surface water from the existing facility drains towards a storm water pond located to the south of the facility afterwards to a constructed wetland before it flows into Knockharley Stream. It is proposed to construct a new storm water outfall on the northern end of the site to accommodate surface water from the northern side of the watershed. It will comprise a similar four stage treatment train (swale-holding pond-suspended solids settlement and attenuation will be provided).

The new system will be similar to the existing surface water treatment system serving the existing development which provides a high level of treatment for discharges.

The flood compensation measures were designed following the flood risk assessment and hydraulic modelling carried out on Knockharley stream and to ensure that there is no flood risk to any infrastructure within the site during a flood event and no increased flood risk downstream.

The EIAR provides a detailed and comprehensive assessment of the potential impacts of the proposed development on the hydrology and surface water in the vicinity of the site in accordance with recognised guidance.

I consider that it has been demonstrated that that the proposed surface water management system drainage, which is designed to mirror the existing surface water management system on the site, will effectively mitigate potential impacts on surface water and water quality. I consider that the efficacy of these mitigation measures, which are similar to those existing on the site, have been established and subject to appropriate and effective implementation and monitoring will have negligible impacts on the receiving environment.

I consider that it has been demonstrated effectively that the risk of flooding on the site and downstream is negligible due to the flood compensation measures proposed, the design of the proposed surface water management system, the maintenance of greenfield discharge rates, the small percentage increase in run-off

volumes contributing to the catchment and the attenuation capacity within the catchment to absorb increased flow volumes.

I have considered all the submissions made in relation surface water quality and drainage and I am satisfied that they have been appropriately addressed in terms of the application and that no significant adverse effect is likely to arise. I conclude that the Board has before it sufficient information to assess the potential impacts of all phases of the proposed development.

10.11. **Landscape and Visual Impact Assessment**

EIAR summary

Chapter 13 of the EIAR assesses the likely significant landscape and visual effects arising from the proposed development. The EIAR describes the assessment methodology, the exiting landscape, its character, sensitivity and vulnerability to change and the potential impacts likely to arise from the proposed development.

The potential significant effects of the development and mitigation measures have been considered above under the Planning Assessment.

The overall conclusion reached in the EIAR is that the proposed development will not significantly affect the wider landscape setting given the capacity of the 'Low Central Landscape' to absorb the development. It is considered that this is facilitated by the extent of mature hedgerow and woodland cover that prevails and the general absence of vantage points that facilitate views across the site and its environs. It is accepted that while the changes will be more evident locally, they will not be significantly intrusive, nor will they significantly alter the character of the area as perceived by local residents and users of the local road network.

In terms of visual impacts, views are contained by a combination of hedgerow and woodland vegetation and the nature of the gentle rolling topography where there are few vantage points. From the locations where views are available, it is noted that distance has a diminishing effect and the nature of the landfill is such that it integrates well in the local environment. In distant views the proposed biological treatment facility is well integrated due to its low position on the site and adjacent screening provided both by the landfill itself and existing screen vegetation.

I have considered all the submissions made in relation to landscape and visual impacts and I am satisfied that they have been appropriately addressed in terms of the application and that no significant adverse effect is likely to arise. I conclude that the Board has before it sufficient information to assess the potential impacts of all phases of the proposed development.

10.12. **Archaeology, Architecture & Cultural Heritage**

Chapter 14 of the EIAR assesses the impact of the proposed development on the archaeology, architecture and cultural heritage of the area.

The study area extends to an area of 1km around the site. Recognised data sources were reviewed, and field inspections were carried out to establish the extent, character and condition of archaeological, architectural and cultural remains within the study area.

There are no Recorded Monuments within the study area. The closest (RMP ME026-0300 is located c 1.3 km to the west of the landfill site boundary and takes the form of a possible ringfort (Fig 14.1). Previous fieldwork carried out for the phased development of the landfill site revealed substantial remains within the immediate vicinity of the proposed development. The landscape surrounding the proposed development is therefore considered to have the potential to contain previously unrecorded archaeological remains.

There are no National Monuments in State Care, or sites with Preservation Orders/Temporary Preservation Orders within the development area or within the 1km study area. There are no World Heritage Sites or Candidate World Heritage Sites within the development area or the 1km study area.

In terms of the architectural resource, there are no Protected Structures within the proposed development area or within the 1km study area. There is one Architectural Conservation Area which falls within the 1km study area at Somerville Demesne c 600m to the south-east of the landfill. Somerville House is included in the National Inventory of Architectural Heritage (NIAH).

Potential significant effects

There is no potential for direct/indirect construction impacts on the recorded archaeological, architectural or cultural heritage resource in the area. The potential

exists for direct construction related impacts on previously unrecorded remains of unknown significance in the vicinity of the new development areas, including the proposed IBA facility, the biological treatment facility, the leachate plant area, the surface water lagoon location, areas of potential tree felling and screening berm development.

There is no potential for direct/indirect impacts during construction on any protected structure or feature of architectural or cultural significance. Sommerville House/Demesne is well screened from the public road network and located a significant distance from the site. The new elements of the proposed development will be contained within the development footprint and landfilling operations will continue in a northerly direction with no predicted impacts on Sommerville House/Demesne to the south.

In terms of operational impacts, there will be no direct/indirect impacts on the archaeological resource. It is not considered that there will be any operational impacts on the Architectural Conservation Area to the south east or the NIAH historic demesne/garden, due to the separation distance and substantial intervening screening.

Proposed mitigation

Standard mitigation measures are proposed to protect the archaeological resource, which will include pre-development geophysical surveying followed by pre-development test trenching in the area of the proposed development. Further mitigation measures may be required such as preservation in situ or preservation by record depending on the test trenching programme. No mitigation is required during the operational stage of the development.

There will be no residual impacts on the archaeological, architectural or cultural heritage resource following mitigation.

Conclusion

- The only impacts that are likely to arise which would potential effect the archaeological, architectural or cultural heritage resource of the area are associated with construction. This phase of the development has the potential to impact on previously unrecorded archaeological remains.

- Subject to the implementation of standard mitigation measures, as set out above, it is considered that these impacts are not likely to be significant.
- No issues regarding archaeology, architecture or cultural heritage were raised in the submissions.

10.13. **Material Assets**

EIAR summary

The impact of the proposed development on material assets is discussed in Chapter 15 of the EIAR. It focuses on material assets not addressed elsewhere in the EIAR including utilities, buildings/structures outside the development boundary, non-renewable resources and renewable resources.

No significant impacts will occur that will affect the 220kV line to the west of the landfill, the 20kV line to the east or the Bord Gais pipeline to the south. It is proposed to relocate the 20kV line, but no specific mitigation measures are proposed other than those typically undertaken by ESB Networks in such an event. Appropriate controls will be undertaken to ensure that construction works will not damage power lines or the gas pipeline.

As far as is possible, non-renewable resources associated with construction will be sourced locally in order to minimise transportation distances and impacts on climate change. In terms of renewable resources, landfill gas on the site will continue to be utilised in the production of renewable energy for export to the national grid and permission exists for a solar farm on the site. Compensatory planting will be provided to mitigate the loss of forestry that will be removed.

Following the completion of the construction phase and associated mitigation measures, there will be no further mitigation measures required with respect to the operational stage.

It is concluded in the EIAR that the proposed development is located within an existing landfill facility and accordingly, impacts on property values are not predicted. Any potential dis-amenities and corresponding property devaluation is assessed as of a short-term nature.

Conclusion

I am satisfied that material assets have been appropriately addressed in terms of the application and that no significant adverse effect is likely to arise. I conclude that the Board has before it sufficient information to assess the potential impacts of all phases of the proposed development.

10.14. **Summary of interactions and interrelationships**

The EIAR only briefly refers to inter-relationships and interactions in Section 6 of the Non-Technical Summary. I have considered the interrelationship between factors and whether this might affect the environment, even though the effects may be acceptable when considered on an individual basis. I consider that the potential arises for the following interactions and interrelationships.

The main potential interactions between population and human health arise from effects to air, water, landscape and roads & traffic. Increased emissions to air giving rise to dust, noise and odour can impact on health, respiratory, cardiovascular and mental health. Increased dust, vehicle emissions and noise can also arise from increased traffic. Impacts on water and on landscape/visual amenity can also impact on human health.

Regarding biodiversity the main potential interactions would occur between land, soil and water through excavation, contamination, and increased dust, surface water run-off, noise and disturbance.

The other main interactions relate to landscape/biodiversity (removal of trees/replanting), material assets (increase roads, potential damage to powerlines/gas main)

I am satisfied that any such impacts can be avoided, managed and mitigated by the measures which form part of the proposed development and any recommended planning conditions.

The potential for cumulative impacts is assessed under each environmental topic. I am satisfied that the potential does not exist for the proposed development to act in combination with other plans and projects to result in significant effects on the environment.

10.15. Reasoned Conclusion on Significant Effects

Having regard to the environmental information contained above, and in particular to the EIAR, the further information submitted and the submissions from the planning authority and the prescribed bodies in the course of the application, it is considered that the main significant direct and indirect effects of the proposed development on the environment are as follows:

- The main impacts on **population and human health** will arise from emissions to air during the construction and operational stages of the development associated with dust, noise, emissions from operating plant and odour. It is considered that these impacts can mitigated by the implementation of the measures set out in the Environmental Impact Assessment Report (EIAR) and the outline Construction and Environment Management Plan (oCEMP).
- Impacts on **biodiversity** within the site would not be significant are capable of effective mitigation by the implementation of the measures set out in the Environmental Impact Assessment Report (EIAR) and the Natura Impact Statement.

  The habitats that would be impacted are of low ecological value with no rare or protected plants species recorded. The Kentstown stream suffers from poor water quality with low fisheries potential.

  Faunal species such as Otter and Badger use the site for transient foraging but are not breeding on the site. The majority of the birds recorded are not of conservation concern and no protected birds/species of conservation interest are breeding on the site. No bat roosts were recorded. The amphibian records identified Frogspawn, which if encountered during construction will be relocated to similar habitat.
- Subject to the implementation of the measures set out in the Environmental Impact Assessment Report (EIAR) and the outline Construction and Environment Management Plan (oCEMP), potential impacts on **land, soil and water** will not be significant. The provision of an additional surface water management system with a four stage treatment process will reduce the

potential for impacts on water quality. The provision of flood compensation measures will reduce the potential for flooding outside the site.

- The impacts on **climate** are assessed as positive associated with the generation of renewable energy.
- Potential impacts on **Landscape** will be mitigated by the provision of planted berms and replanting in accordance with a landscaping plan, which will provide a visual buffer between the landfill and sensitive receptors. The increase in height of the landfill body overall visual impact of the proposed development will be highly localised and confined to the environs of the site.
- Potential impacts in terms of **Material Assets** (Roads & Traffic) will be mitigated during construction by the measures set out in the outline Construction and Environment Management Plan (oCEMP) and during the operational phase by the Operational Traffic Management Plan required by condition. The increase in traffic arising from the proposed development can be accommodated without resulting in significant effects on the carrying capacity and performance of the road network.
- Potential impacts on **Cultural Heritage** will be mitigated during the construction stage through archaeological monitoring od ground works.

Having regard to the above, I am satisfied that the proposed development would not have any unacceptable direct or indirect effects on the environment.

11.0 Appropriate Assessment

Introduction

The application is supported by a Stage 1 Screening Report for Appropriate Assessment and a Natura Impact Statement. These are contained in two separate volumes in the documents submitted. The reports describe the existing environment, the proposed development and provide details of relevant guidance, the sources of information and methodologies used in the assessment. Details of desk top studies, field assessments and consultation with prescribed bodies are also described.

The EU Habitats Directive 92/43/EEC provides legal protection for habitats and species of European importance through the establishment of a network of

designated conservation areas collectively referred to as Natura 2000 or 'European sites'. The network includes sites designated as Special Areas of Conservation (SAC) under the Habitats Directive and Special Protection Areas (SPA) designated under the Birds Directive. In general terms they are considered to be of exceptional importance for protecting rare, endangered or vulnerable habitats and species within the European Community.

The likely significant effects on a European site

The requirements of Article 6(3) as related to the assessment of a project under the Planning and Development Act 2000, as amended are considered fully in this section. The areas addressed in this section are as follows:

- Compliance with Article 6(3) of the EU Habitats Directive
- Screening the need for Appropriate Assessment
- The Natura Impact Statement
- Appropriate Assessment

Compliance with Article 6(3) of the EU Habitats Directive

The Habitats Directive deals with the Conservation of Natural Habitats and of Wild Flora and Fauna throughout the European Union. Article 6(3) of this Directive requires that any plan or project not directly connected with or necessary to the management of a European site but likely to have significant effects thereon, either individually or in combination with other plans or projects shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives.

The proposed development is not directly connected with or necessary to the management of a European site and accordingly screening for Appropriate Assessment was carried out.

Screening the need for Appropriate Assessment

The first test of Article 6(3) is to establish if the proposed development could result is likely significant effects to a European site. This is considered Stage 1 of the appropriate screening process i.e. screening. The screening stage is considered to be a preliminary examination. If the possibility of significant effects cannot be

excluded on the basis of objective information, without extensive investigation or the application of mitigation, a plan or project should be considered to have a likely significant effect and Appropriate Assessment carried out.

The Stage 1 Screening Report for Appropriate Assessment submitted by the applicant identified the following European sites within a possible zone of influence of the proposed development.

- River Boyne and River Blackwater cSAC (Site code 002299) c. 4.3km to the north
- River Boyne and River Blackwater SPA (Site code 004232) c 4.4km to the north
- Boyne Estuary SPA (Site code 004080) c. 14.6 km to the north.
- Boyne Coast and Estuary cSAC (Site code 001957) c 18.7 to the north east,
- River Nanny Estuary and Shore SPA (Site code 004158) c 22km to the east,

The location of each site is identified in Fig 5.1 of the report. Table 1 below provides details of each of the European sites, the qualifying interests and the distance to the landfill site.

Table 1

European site (SAC/SPA)	**Qualifying Interests**	**Distance**
River Boyne and River Blackwater SAC (Site code: 002299)	Alkaline fens [7230] Alluvial forest [91E0]* River Lamprey [1099] Atlantic Salmon [1106] Otter [1355]	4.3km
River Boyne and River Blackwater SPA (Site code: 004232)	Kingfisher [A229]	4.4km

European site (SAC/SPA)	Qualifying Interests	Distance
Boyne Estuary SPA (Site code: 004080)	Shelduck [A048] Oystercatcher [A130] Golden Plover [A140] Grey Plover [A141] Lapwing [A142] Knot [A143] Sanderling[A144] Black-tailed Godwit [A156] Redshank [A162] Turnstone [A169] Little Tern [A195] Wetlands [A999]	14.6km
Boyne Coast and Estuary SAC (Site code: 001957)	Estuaries [1130] Tidal Mudflats and sandflats [1140] Annual vegetation of drift lines [1210] *Salornica* mud [1310] Atlantic Salt Meadows [1330] Embryonic Shifting dunes [2110] Marram Dunes [2120] Fixed Dunes [2130] *	18.7km
River Nanny Estuary and Shore SPA (Site code: 004158)	Oystercatcher [A130] Ringed Plover [A137] Golden Plover [A140] Knot [A143] Sanderling [A144] Herring Gull [A184]	22km

European site (SAC/SPA)	Qualifying Interests	Distance
	Wetlands [A999]	

* = priority habitat

The River Boyne and River Blackwater SAC (Site code: 002299)

The site lies C 4.3 km to the north of the landfill facility. It comprises the freshwater element of the River Boyne as far as the Boyne Aqueduct, the Blackwater as far as Lough Ramor and the Boyne tributaries including the Deel, Stoneyford and Tremblestown Rivers. The Boyne and its tributaries are important game fisheries and Atlantic Salmon use its tributaries and headwaters as spawning grounds. The River Blackwater is a medium sized river and salmon stocks have not recovered to the numbers that existed pre the arterial drainage scheme of the 1970's.

The site is also important for the populations of two other species listed on Annex 11, namely River Lamprey which is present in the lower reaches of the River Boyne and Otter which can be found through-out the site. Whooper Swan winter regularly at several locations along the Boyne and Blackwater Rivers.

The main areas of alkaline fen are concentrated in the vicinity of Lough Shesk, Freehan Lough and Newtown Lough. Areas of alluvial forest occur along stretches of the Boyne and the river islands.

Site-specific conservation objectives have not been published for the site. The generic objective is to maintain/restore the favourable conservation condition of the Annex 11 habitat(s) and the Annex 11 species for which the site has been selected.

River Boyne and River Blackwater SPA (Site code: 004232)

The site lies c 4.4km to the north of the development site. The SPA is a long linear site and includes the river channel and marginal vegetation. The site is of high ornithological importance as it supports a nationally important population of Kingfisher, a species that is listed on Annex 1 of the EU Birds Directive.

Site-specific conservation objectives have not been published for the site. The generic objective is to maintain/restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA.

Boyne Estuary SPA (Site code 004080)

This coastal site is located c 14.6 km to the north east of the landfill site. It comprises most of the estuary of the Boyne River and is of special conservation interest for a variety of wintering waterbirds. Black-tailed Godwit occurs in internationally important numbers and a further nine other species of wintering waterbirds have populations of national importance. Of particular significance is the three species that regularly occur, Golden Plover, Black -tailed Godwit and Little Tern which are listed on Annex 1 of the Birds Directive.

Site specific conservation objectives have been published for the site. The objective is to maintain the favourable conservation condition of each of the bird species for which the site is selected and the wetland habitat as a resource for regularly occurring migratory waterbirds that utilise it.

Boyne Coast and Estuary SAC (Site code 001957)

The site is located 18.7km to the east/northeast of the development site. It includes most of the tidal sections of the River Boyne, intertidal sand and mudflats, saltmarshes, marginal grassland and the stretch of coast from Bettystown to Termonfeckin that includes the Mornington and Baltray sand dune systems. The site is of considerable conservation interest as a coastal complex that supports good examples of eight habitats that are listed on Annex 1 of the EU Habitats Directive, including one which is listed with priority status.

Site specific objectives have been published for the site which is to maintain/restore the favourable conservation condition of the habitats for which the site is selected.

River Nanny and Shore SPA (Site code 004158)

The site is located c 22km to the east. It comprises the estuary of the River Nanny and sections of the shoreline to the north and south of the estuary. The SPA is of ornithological importance as it supports five species of wintering waterbirds and one gull species in numbers of national importance.

Site specific conservation objectives have been published for the site which is to maintain the favourable conservation status of each bird species for which the site is selected and to maintain the favourable conservation condition of the wetland habitat as a resource for regularly-occurring migratory waterbirds that utilising it.

Stage 1 Screening Conclusion

The three sites to the north of the landfill are all associated with the River Boyne and River Blackwater. These sites were screened out for further assessment on the basis that no ecological pathways exist between the landfill and the designated sites and the potential for significant effects can therefore be ruled out. Similarly, no hydrological connection exists between the site and the Boyne Coast and Estuary SAC to the east, which is designated for coastal habitats. Potential significant effects on this site can also be ruled out.

The proposed development site is, however ecologically connected to the River Nanny and Estuary and Shore SPA via a tributary of the River Nanny, the Knockharley Stream. This is a weak connection due to the distance involved (>22 km), however a precautionary approach was taken to further examine possible effects and apply mitigation measures. It was concluded that in the absence of mitigation significant effects on this European site could not be ruled out. These impacts could potentially arise during the construction and operational phases of the development associated with potential release of contaminants to the Knockharley Stream, which feeds into the River Nanny.

Issues raised during the course of the application and during the oral hearing

The Peer Review Report commissioned by Meath County Council and prepared by FERS asserts that the Stage 1 Screening Report is not fit for purpose as it excludes sites which should not have been excluded at the screening stage. It contends that there are possible ecological connections between the development site and the River Boyne to the north and that the River Boyne and River Blackwater SAC and SPA, Boyne Coast and Estuary SAC and Boyne Estuary SAC should have been screened in for Appropriate Assessment. It also states that the potential exits for qualifying interests (Otter, Kingfisher, Golden Plover, Whooper Swan) to be present at or near the landfill site and for knock-on impacts on populations associated with those designated sites.

<u>Exclusion of sites at Stage 1 Screening</u>

The rationale for screening out four of the five designated sites considered in the assessment is clearly explained in the AA Screening Report. The site of the proposed development is in a separate catchment (Nanny-Delvin) to the River Boyne

and River Blackwater systems, which removes the potential for hydrological connectivity between the development site and the River Boyne and River Blackwater SAC/SPA, the Boyne Estuary SPA and the Boyne Coast and Estuary SAC. With the exception of the River Nanny Estuary and Shore SPA, there are no other hydrological links with any other Natura 2000 site.

Mr Patrick Moran (FERS) stated during the oral hearing that it was completely erroneous to screen in the River Nanny Estuary and Shore SPA and to screen out the Boyne Estuary SPA. These sites share four bird species (Oystercatcher, Golden Plover, Knot and Sanderling) which are comprising qualifying interests for both sites. Having regard to the mobility of these bird species, any potential impact on one site would have a significant potential to impact on the other. It was his opinion that there is, therefore, an ecological connection between the site and the Boyne Estuary SPA.

In response Mr Carl Dixon noted that the established link between the development site and the River Nanny Estuary and Shore SPA was hydrological and the potential for impacts for water quality impacts and prey availability. Having regard to the distance to the SPA and the dilution available, the link was considered tenuous with no reason or justification to extend it further and include the Boyne Estuary SPA further up along the coast. This is considered reasonable.

Potential for qualifying features of SAC/SPA's to be present on the site

Otter

Otter is a qualifying feature of the River Boyne and River Blackwater SAC, located c 4.3 km from the site. The site surveys indicate that otter use the site occasionally but there is no evidence of holts or breeding sites. While there is no hydrological connection with the SAC, Mr Patrick Moran (FERS) stated during the oral hearing that otter can travel long distances overland and SAC populations could potentially use habitats within the development site.

In response, Mr Carl Dixon accepted that otter has a large territory and can travel long distances across county. However, he noted the very low numbers recorded during the site surveys. Knockharley Stream which flows through the site has suffered from water quality issues both upstream/downstream of the proposed development, with limited prey for otter. In the absence of any high-quality feeding resources, the site would not be attractive for this species.

There would be no impact on the SAC site itself or its functioning as a suitable habitat for Otter and no possible impact on the otter population associated with the SAC. Individual otter may use the Knockharley Stream occasionally, but no breeding or resting places will be disturbed.

Kingfisher

The Peer Review report also refers to Kingfisher, which is a qualifying interest of the River Boyne and River Blackwater SPA, located less than 5km to the north. The report questioned why a dedicated survey of Kingfisher habitat had not been conducted as part of the EIAR, noting that in-stream works proposed to the Knockharley Stream lie within a 10km grid square within which Kingfisher was recorded.

This matter is addressed comprehensively in the Response to Further Information. Kingfisher was not recorded in the original surveys conducted on the site. Additional surveys subsequently carried out included an assessment of water features and associated habitat for potential foraging, nesting and roosting sites (Aquatic survey Appendix 5). The assessment of habitat suitability in the watercourses was based on physical channel attributes, prey resources, potential breeding and nesting habitat and overall water quality. Vantage point surveys were also undertaken (4 no.) to document passing and/or feeding kingfisher moving through areas with good visibility (Table 2.5 and Fig 2.2 Aquatic Survey)

Kingfisher was observed during the more recent walkover surveys along the Knockharley Stream and adjacent to the surface water pond to the south, where suitable prey exists. No nesting sites were recorded. While the streams contains suitable prey (three-spined stickleback etc) water quality is poor, which means that the fisheries resource is limited. This together with suboptimal habitat (heavily overgrown smaller watercourses and steep, compacted banks unsuitable for nesting) and a lack of suitable perching sites does not provide a favourable environment for foraging or nesting Kingfisher.

Responding to issues raised on this matter during the oral hearing, Mr Carl Dixon acknowledged that while Kingfisher have a core territory of c 1km, they can travel longer distances but this will depend on the feeding resource. He stated that there is nothing on the site to attract Kingfisher to travel such a distance to feed.

The conclusion reached in the assessment is that the water courses offer poor habitat potential for Kingfisher, arising from poor water quality and poor overall fisheries potential. Despite the presence of three-spined stickleback in sections of the streams in the vicinity of the site along with more diverse fish stocks in the River Nanny, kingfisher habitat was considered suboptimal. The smaller watercourses are noted to be heavily overgrown with steep but compacted banks not suitable for kingfisher nesting. No kingfisher nesting sites were recorded during the walkover surveys. Suitable perch sites were also noted to be scarce particularly along sections of the smaller watercourses.

The proposal would have no effect on the conservation objectives of the River Boyne SPA due to distance and lack of connections. While Kingfisher may occasionally use the site to prey on stickleback within the stream, there will be no effect on breeding sites or prey items and there is no reason why the species would not occasionally occur on the site.

Golden Plover

The Peer Review also referred to the potential usage of the site by Golden Plover, noting that it is qualifying species for two coastal SPA's and that this should have been a key element of the bird surveys undertaken to inform the EIAR and any Appropriate Assessment. The lack of nocturnal surveys for this species was also raised by Mr Moran which he stated feed at night on grassland.

Golden Plover is listed on Annex 1 of the Birds Directive and is also Red Listed as a species of conservation concern. The species was recorded historically in the 10km square grid (N96). It was also recorded on lands adjacent to the site in 2008. The species has never been recorded on the site or in the surrounding lands in any subsequent surveys. This is attributed to the lack of suitable habitat for this species on the site.

Golden Plover is listed as a species of conservation interest for the Boyne Coast and Estuary SPA (14.7km) and the River Nanny Estuary and Shore SPA (17km). According to the Scottish Natural Heritage Guidance, the core foraging range of this species is 3km suggesting that there is not likely to be connectivity between the site and the closest SPA's.

Mr Dixon stated that was only one confirmed recording of Golden Plover in 2008, with no subsequent recording on or in the vicinity of the site. He stated that the habitats that will be affected by the proposed development are not of any particular value to Golden Plover and that there is an abundance of similar habitat in close proximity. With regard to the lack of nocturnal surveys, Mr Dixon noted that limited use of the site by Golden Plover and that the survey effort has to be appropriate to the likely impacts.

I accept, therefore, that the proposed development is not likely to have any significant negative impacts on the use of any ex-situ feeding sites used occasionally by Golden Plover and no effects on the Boyne Estuary SPA, the River Nanny Estuary and Coast SPA or any other SPA designated for Golden plover.

Whooper Swan

It is also contended by the observer that dedicated Whooper Swan surveys should have been conducted. It is proposed to relocate ESB powerlines within the site and concerns are expressed that this could potentially impact on flight paths for this Annex 1 species.

Whooper Swan has been historically recorded in the 10km square (N96) surrounding the Knockharley site (Table 10-8 of EIAR). However, none were recorded in any of the surveys conducted which inform the EIAR or subsequent surveys. There are 5 SPA sites within 100 km of the landfill facility that list Whooper Swan as special conservation interest. The closest is located 61km west (Lough Iron SPA). Whooper Swan is not a species of conservation interest for the River Boyne and River Blackwater SPA which is close to the site. However, areas within the River Boyne and River Blackwater SAC are used by a nationally important wintering population, using the grassland areas along the rivers c 4.6km from the site.

It is acknowledged that the landfill site would be at the edge of the core foraging range for this species[20]. However, the landfill site does not contain suitable habitat with no flooded fields or grassland for roosting and feeding. There are agricultural grassland fields to the north which could offer potential habitat. However, there are

[20] Scottish Natural Heritage Guidance: Assessing Connectivity with SPA's Guidance, Version 3 June 2016 provides guidance to help identify 'connectivity' between development proposals and SPA's. It gives a foraging range of less than 5km for whopper Swans for night roosts during the winter season.

no records of the species using the area and the ongoing landfill activity, coupled with bird deterrents reduce the attractiveness of the area for the species. In the wider hinterland, the fields are small and enclosed and not the type of feeding roosting habitat favoured by the species which prefers a broad uninterrupted view of the surrounding hinterland.

It is not considered that the relocated power lines will pose any collision risk for this species. The proposed relocation of a section of the existing 20 kV powerline and the provision of a new powerline will only marginally alter existing conditions and will not traverse significant areas of new habitats where powerlines are absent. It is noted that most collisions involving Whopper Swan occur at dawn/dusk to and from roosting sites. There are no roosting or feeding sites within the landfill facility and no necessity for low flights for Whooper Swan.

I accept therefore that the proposed development is not likely to have any significant negative impacts on whooper swan populations associated within any SPA designated for such species.

Other matters

Leachate/surface water management

The AA screening report describes the proposed development in Section 4. The observers concerns arise from the following statement:

'Leachate and surface water treatment also form part of the proposed development, however, are not detailed or taken into account in this AA Screening Assessment'[21].

Leachate will continue to be tankered off site to a licensed WWTP. The applicants response provides clarity noting that four potential WWTP facilities could be used and that these have all been assessed by the EPA under the Habitats Directive. The impact of tankered leachate is therefore assessed at its destination.

Indirect impacts associated with dust

It is contended in the Peer Review report that the potential for indirect impacts on designated sites arising from dust has not been identified in the AA Screening Report. The AA report does not consider impacts generated by dust as there are no

designated sites located in close proximity, the closest being the River Boyne and River Blackwater cSAC at c 4.3 km distance. In this context the applicant also draws attention to the TII's *'Guidelines for the Treatment of Air Quality During the Planning and Construction of National Road Schemes'* where it is stated that the potential for significant effects is limited to 50m for moderate sized construction projects and 100m from the source for major construction sites.

Alien/Invasive species

The Review also refers to the lack of consideration of the potential spread of invasive species on the River Nanny Estuary & Shore SPA. There is no specific mention of alien or invasive species in the AA Screening report. According to applicant's response, no such species have been identified within the proposed development footprint. However, the updated habitat descriptions provided in response to further information note the presence of a strand of Himalayan Balsam in an area of Recolonising Bare Ground (ED3) to the south of the capped landfill. This non-native invasive species grows rapidly and spreads quickly with impacts on native plants. The site is outside the area proposed for the current development.

I note that it is intended that most of the soil required during construction will be sourced on-site and imported material will be specified in the construction contract. I also note that it is relatively easy to remove Himalayan Balsam. It has a shallow root system which is easy to uproot and can also be removed by chemical /non-chemical means.

Having regard to the separation distance to designated sites and the limited presence on the site, I do not consider that it could be reasonably be argued that this invasive non-native species poses any threat to the qualifying interests of European sites. Should the Board be minded to grant permission for the development, I recommend that a condition be attached requiring the applicant to submit details of plans for the eradication and management of this species and any other invasive species arising on the site.

Water abstraction impacts

It is contended that the potential impacts associated with potential water abstraction for the site has not been identified in the AA Screening Report. Water for the site is provided by a public mains supply and in the event of drought conditions water would

be abstracted from the surface water pond to supress dust. There are no plans to abstract water from groundwater sources and therefore no potential impacts on any European site can arise.

In combination/cumulative impacts

It is also asserted that the potential for cumulative and in-combination effects are largely omitted, which is a critical flaw of the AA screening report. It is further stated that the assessment of cumulative impacts has given no consideration to, for example the disturbance or bioaccumulation of contaminants.

Cumulative impacts in combination with other plans/projects is considered in Section 5.4.1 of the Screening Report. Consideration is given to the Meath Co Development Plan 2013-2019, the County Meath Biodiversity Plan (Draft) 2015-2020, which have themselves been subject to appropriate assessment. In terms of projects, the report considers applications for planning permission in the vicinity of the site and other large developments in the surrounding hinterlands, with significant polluting potential. These are operated under licence from the EPA and subject to stringent controls in respect of discharges to water.

It is acknowledged that in the absence of mitigation that the principle pathway by which potential impacts could occur would be via changes in water quality. The only designated site hydrologically connected to the site is the River Nanny Estuary and Shore SPA. Whilst a deterioration in water quality could result in the bioaccumulation of contaminants, a sophisticated surface water management system is proposed which will include an attenuation pond which will allow solids to settle prior to discharge to the stream via a constructed wetland which reduces the potential for cumulative impacts. These discharges will be monitored under the conditions if the IE licence.

Conclusion of Stage 1 Screening for Appropriate Assessment

Based on my examination of the Screening Report and supporting information, the NPWS website, aerial and satellite imagery, the scale of the proposed development and likely effects, separation distance and functional relationship between the proposed works and the European sites, their conservation objectives and taken in conjunction with my assessment of the subject site and the surrounding area, I would

conclude that Appropriate Assessment is required for the River Nanny Estuary and Shore SPA as the possibility of significant effects cannot be ruled out.

I accept that remaining 4 no. sites can be screened out for further assessment because of the scale of the proposed works, the nature of the Conservation Objectives, Qualifying and Special Conservation Interests, the separation distances and the lack of a meaningful ecological connection between the proposed works and the European sites. The development site is located within a separate catchment to these sites and no hydrological or other substantive ecological link has been established.

I accept therefore that it is reasonable to conclude that on the basis of the information on the file, which I consider adequate in order to issue a screening determination, that the proposed development, individually or in combination with other plans or projects would not be likely to have a significant effect on European site No's 002299,004232, 004080 and 001957 in view of the site's conservation objectives and Appropriate Assessment is not therefore required for these sites.

No measures designed or intended to avoid or reduce any harmful effects of the project on a European site have been relied upon in this screening exercise.

I accept that the various components of the development are comprehensively described in the EIAR and in AA Screening Report. I draw the attention to the Board to the separate report prepared by Dr Maeve Flynn (Inspectorate ecologist), which addresses the adequacy of the information provided including the response to further information and clarifications at the oral hearing. The report concludes that the information provided is adequate and ensures that all aspects of the project can be assessed to provide for complete, precise and definitive findings for the purposes of Appropriate Assessment. I accept that the potential impacts that could impact on designated sites have been identified and that the Board has before it sufficient information to allow it to carry out appropriate assessment.

Based on the information set out Stage 1 screening assessment, the further information response and the submissions to the oral hearing, I consider that the conclusions reached in the Stage 1 Screening Assessment are reasoned and justified.

Natura Impact Statement

The findings of the Stage 1 Screening for Appropriate Assessment found that there was potential for significant effects on one European site, namely, the conservation interests of the River Nanny Estuary and Shore SPA, in the absence of mitigation. A Natura Impact Statement has been submitted with the application to assist in the assessment of the potential impacts of the proposed development on the site in light of its conservation objectives.

The River Nanny Estuary and Shore SPA comprises the estuary of the River Nanny and sections of the shoreline to the north and south of the estuary. It is of special conservation interest for five species of wintering water birds and one gull species and for the wetland habitat which is used by migratory water birds. The overall conservation objective is to maintain the favourable conservation condition of each species within the SPA and the wetland habitat as a resource for the regularly-occurring migratory waterbirds that use the site.

The only potential for significant effects on the River Nanny Estuary and Shore SPA is as a result of indirect effects via a hydrological link from the proposed development, in the absence of mitigation. These impacts could arise both during the construction and operational stage arising from the release of sediments, nutrients, pollutants, IBA dust and leachate spills via surface water run-off into the Knockharley Stream, which feeds into the River Nanny.

The potential for significant effects on the SPA is determined for each phase of the development in terms of the following:

- potential loss or alteration of habitat,
- potential disturbance or displacement of species
- potential impacts on water quality and consequent impacts on habitats/species.
- potential for cumulative impacts with other plans or projects is also considered.

<u>Potential for significant effects during construction</u>

Loss or alteration of habitat

The site is selected for Wetland habitat used by migratory water birds. The development site is located c 22 km upstream of the of the SPA and there is no potential for loss or fragmentation of this habitat associated with the proposed development. The site is hydrologically connected to the site via the Knockharley Stream and the River Nanny. Due to these links there is potential during construction for indirect effects on this wetland habitat arising from pollutants such as concrete, sediment, hydrocarbons etc entering Knockharley Stream and the River Nanny.

Whilst it is considered unlikely that adverse impacts would arise due to the separation distance and the dilution effects of the watercourses, mitigation measures employed during the each stage of the development will reduce the risk.

Disturbance or displacement of species

Due to the significant separation distance between the designated site and the proposed development, the 6 no. bird species for which the site is designated would not be impacted (disturbed/displaced) by activity at the landfill site during the construction stage. The SPA's receiving habitat could potentially be adversely affected if pollutants entered the watercourse downstream of the proposed development during construction. This could result in a reduction of food source for birds which would result in displacement. Appropriate mitigation measures are proposed which will further reduce any potential risk.

Potential impacts on water quality and consequent impacts on aquatic habitats and species during construction

In the absence of adequate controls, contamination of Knockharley Stream with suspended solids and other pollutants during construction could be transported to the SPA. This would have the potential to adversely impact on water quality, prey availability and potential foraging habitat for species of conservation interest. The impacts could arise from pollution of the watercourses with suspended solids and run-off from excavations during construction, release of nutrients during tree-felling operations, pollution with cementitious material from construction areas and from oil/fuel spillages.

Whilst this is considered unlikely given the distance and dilution afforded by the watercourses, appropriate mitigation measures will reduce the risk.

<u>Potential for significant effects during operation stage</u>

Loss or alteration of habitat

The development will be confined with the footprint of the landfill facility and there will be no direct impacts on designated habitat within the SPA associated with the operational stage of the development. The potential for indirect effects arises from contaminated run-off entering the Knockharley Stream via the settlement pond/wetlands. In the absence of mitigation this could have an indirect effect on Wetland habitat arising from a reduction in water quality.

Disturbance of displacement of species

In the absence of mitigation, there is potential for contaminated run-off to enter Knockharley Stream and cause a reduction in water quality which could result in a displacement of bird species within the SPA due to a reduction in food resources.

Potential impacts on water quality and consequent impacts on aquatic habitats and species during operational stage

Due to the hydrological link that exists between the site and the SPA there is potential in the event of contaminated run-off entering the Knockharely Stream for impacts on water quality which could cause an alteration of habitat and displacement of species for which the site is selected.

Potential for Cumulative Impacts

The potential cumulative impacts of the proposed development in combination with other plans and projects is considered in Section 3.4 of the NIS. The relevant policies/objectives of the county development plan and the draft Biodiversity Action Plan as they relate to natural heritage protection are documented. The draft Biodiversity Action Plan aligns with the objectives of the county development plan in terms of implementing the requirements of the Habitats Directive. The development plan has itself been subject to Appropriate Assessment, which concluded that

'there will be no likely significant effects on Natura 2000 sites in County Meath or its environs by the adopted plan in isolation or in combination with other plans and projects acting in the same area' (Section 3.12 of Volume 4).

The projects considered for potential in-combination effects include applications to the planning authority and proposals for which planning permission has been granted in the vicinity of the site. The majority of the permissions granted relate to

one-off housing, extensions and other alterations which would not give rise to significant effects. Details are also provided of facilities which are licenced by the EPA (poultry farms, sow units, cattle slaughterhouse, materials recovery facility etc). Each of these licenced facilities, is subject to controls to prevent downstream adverse impacts on watercourses and the downstream SPA.

Proposed mitigation measures

The main impacts identified which could give rise to significant effects on the River Nanny Estuary and Shore SPA are sedimentation and pollution with the potential to give rise to a possible decrease in habitat quality and/or prey availability for the 6 no. species and Wetlands for which the site is selected.

A suite of mitigation measures are proposed to avoid the risk of sediment and pollutants entering surface water and to protect water quality during each stage of the development. These are summarised below:

Construction Stage

Table 3-5 of the NIS provides details of each of the mitigation measures that will be employed during the construction stage and how these measures avoid adverse effects. The following provides a summary of these measures.

- A Construction and Environmental Plan will be prepared and will include all of the mitigation measures set out in the EIAR and the NIS.
- A suitably qualified person will be appointed by the developer to ensure the effective implementation of the CEMP on site and to oversee the management and maintenance of the mitigation measures during construction.
- The new attenuation pond will be installed at the commencement of construction to eliminate the risk of any increase in the rate of run-off, to control erosion and silt or polluted run-off.
- Silt control, including silt traps and stilling ponds will be put in place in parallel with, or, ahead of construction.
- A new surface water management system will be installed to the north of the site, to cater for the proposed development. It will incorporate a four-stage

treatment train (swale-holding pond-attenuation-wetland) to retain and treat the discharges from the new surfaces as a result of the development. This will reduce the potential impacts of increased run-off and sediment loading on watercourses.

- During the diversion of the stream and culverting to the north, in-stream sediment traps will be installed prior to construction and maintained for the duration of the works. All diverted surface water/run-off will be diverted to the attenuation lagoon to avoid risk of sediment entering Knockharley Stream. Any instream works will be undertaken in consultation with Inland Fisheries Ireland (IFI) and subject to Section 50 approval from the OPW.
- No works will take place during severe weather conditions.
- Works in watercourses will be carried out during July-September unless prior agreement has been reached with Inland Fisheries Ireland.
- A flood culvert will be constructed within Knockharley Stream to provide flood plain storage lost through construction of the northern surface water management system.
- Tree felling will be undertaken in accordance with best practice to prevent the introduction of sediments and nutrients to Knockharely Stream.
- Standard best practice procedures will be implemented regarding stockpiling of material, storage of fuels, refuelling of vehicles, construction of berms etc to avoid the risk of hydrocarbon leaks, contaminated run-off, sediment and excess nutrients entering the watercourse.

Operational Stage

There is existing surface water drainage infrastructure in place to serve the existing development which is designed to ensure that surface water discharges to receiving waters will not impact on water quality. The existing collection system is as follows. Rainfall on the undeveloped parts of the landfill discharges directly to the surface water drainage system. Rainfall on active areas of the landfill is collected in the leachate collection system. The surface water from all roads, capped areas and hard standing areas is directed to the surface water attenuation pond via an oil

interceptor. Drainage from the existing waste inspection and quarantine bays is directed to the leachate lagoon.

A second surface water attenuation lagoon and wetland with an associated holding pond and a new flood plain is proposed to facilitate management of surface water in the northern portion of the site. It is proposed that drainage from the biological treatment facility will be directed to an underground leachate tank and drainage from the new IBA facility will be directed to a new leachate storage facility. In the event of a pollution incident discharges from the attenuation ponds to the north and south of the facility can be shut down to prevent pollution entering the watercourse.

The mitigation measures proposed during the operational stage are included in Table 3-6 of the NIS. They include standard bests practice protocols to prevent chemical/petroleum products, IBA contaminated run-off, leachate spills etc from entering the surface water management system including the attenuation and wetland system. The new surface water attenuation pond will be sized to manage a 1 in 100 year flood event to prevent uncontrolled releases of sediment and a constructed wetland will be provided to further attenuate flows and polish suspended solids prior to discharge to Knockharely Stream.

These measures combined with continuous monitoring of water quality will ensure that water quality is not adversely affected by the existing/proposed development. This will ensure that no downstream effects on water quality will occur with the potential to adversely impact on the special conservation interests of the River Nanny Estuary and Shore SPA.

Conclusion on Appropriate Assessment

The proposed development has been considered in light of the assessment requirements of sections 177U and 177V of the Planning and Development Act 2000 as amended.

Having carried screening for Appropriate Assessment of the proposed development, it was concluded that based on the precautionary principle and taking a precautionary approach, significant effects could not be ruled out on the River Nanny Estuary and Shore SPA (site code 004158). Consequently, an Appropriate Assessment was required of the implications of the project on the qualifying features of that site in light of its conservation objectives.

Following an Appropriate Assessment, it has been determined that the proposed development, individually or in combination with other plans or projects would not adversely affect the integrity of the European Site No 004158, or any other European site, in view of the sites Conservation Objectives.

This conclusion is based on:

- The weak ecological connection between the proposed development and the River Nanny Estuary and Shore SPA;
- Prevention of possible construction related pollutants entering the River Nanny river system by effective mitigation measures;
- Prevention of possible operational pollutants entering the River Nanny river system by effective mitigation measures including monitoring controls.

This conclusion is based on a complete assessment of all aspects of the proposed project and there is no reasonable doubt as to the absence of adverse effects.

12.0 **Recommendation**

Note: I would point out to the Board that the provisions of section 37G of the Planning and Development Act 2000, as amended apply in this case. The landfill is operated under licence from the EPA and the Board is prohibited, where it decides to grant permission, attach conditions for the purposes of –

(a) Controlling emissions from the operation of the activity, including the prevention, limitation, elimination, abatement, or reduction of those emissions, or

(b) Controlling emissions related to or following the cessation of the operation or the activity.

The Board may decide to refuse a grant of permission under this section, where it considers that the development, notwithstanding the licensing of the activity, is unacceptable on environmental grounds, having regard to the proper planning and sustainable development of the area in which the development is situated.

On the basis of the above assessment, I recommend that planning permission be granted for the proposed development for the reasons and considerations set down

below, subject to compliance with the attached conditions and in accordance with the following Draft Order.

Reasons and considerations (Draft Order)

In coming to its decision the Board had regard to the following:

- Directive 2014/52/EU amending Directive 2011/92/EU (EIA) on the assessment of the effects of certain public and private projects on the environment.
- Directive 92/43/EEC (Habitats Directive) and Directive 79/409/EEC as amended by 2009/147/EC (Birds Directive) which sets out the requirements for Conservation of Natural Habitats and of Wild Fauna and Flora throughout the European Union
- The National Planning Framework – Ireland 2040, which contains objectives to increase waste treatment and management capacity and a standardised approach to managing waste.
- The National Development Plan - Ireland 2018-2027, which identifies the need to increase capacity in waste management infrastructure to meet existing and future waste management objectives.
- The provisions of the Climate Action Plan, 2019,
- A Waste Action Plan for a Circular Economy Irelands National Waste Policy 2020-2025
- The Eastern-Midlands Region Waste Management Plan 2015-2021
- The Eastern -Midlands Region Waste Management Plan 2015-Construction & Demolition Waste Update Report 2020
- The Eastern and Midlands Regional and Spatial Economic Strategy 2019-202
- the policies of the planning authority as set out in the Meath Co County Development Plan, 2013-2019.

The following matters were taken into consideration:

(a) the evidence provided with regard to the European, national and regional requirements for the treatment and disposal of the various waste streams, including municipal solid waste, bottom ash and construction and demolition waste,

(b) the nature, scale and design of the proposed development including the new IBA cells, biological treatment plant facility and associated infrastructure,
(c) the established use of the site the established use of the site as a waste management facility,
(d) the proximity of the site to the national primary road network,
(e) the distance to dwellings and other sensitive receptors,
(f) the design layout and landscaping of the proposed facility.
(g) the likely consequences for the environment and the proper planning and sustainable development of the area in which it is proposed to carry out the proposed development and the likely significant effects of the proposed development on European site's,
(h) the submissions made in relation to the application including those submitted at the oral hearing and the report and recommendation of the Inspector and the additional report to the Board by the Inspectorate Ecologist

Appropriate Assessment: Stage 1

The Board noted that the proposed development is not directly connected with or necessary for the management of a European Site.

In completing the screening for Appropriate Assessment, the Board accepted and adopted the screening assessment and conclusion reached in the Inspector's report that the River Nanny Estuary and Shore SPA (Site Code:004158) is the only European site in respect of which the proposed development has the potential to have a significant effect.

Appropriate Assessment: Stage 2

The Board considered the Natura Impact Statement and associated documentation submitted with the application for permission, the mitigation measures contained therein, the submissions and observations on file including further information and submissions made to the oral hearing. The Board completed an appropriate assessment of the implications of the proposed development on the River Nanny Estuary and Shore SPA (Site Code:004158), in view of the site's Conservation Objectives. The Board concluded that the information before it was adequate to

allow for a complete assessment of all aspects of the proposed development and to allow them reach complete, precise and definitive conclusions for appropriate assessment. carrying out of an Appropriate Assessment.

In completing the Appropriate Assessment, the Board considered, in particular, the following:

i. the likely direct and indirect impacts arising from the proposed development both individually or in combination with other plans or projects,

ii. the mitigation measures which are included as part of the current proposal,

iii. the conservation objectives for the European Site.

In completing the appropriate assessment, the Board accepted and adopted the appropriate assessment carried out in the Inspectors report in respect of the potential effects of the proposed development on the integrity of the aforementioned site, having regard to the site's conservation objectives.

In overall conclusion, the Board was satisfied that the proposed development, by itself or in combination with other plans or projects, would not adversely affect the integrity of the European Site in view of the site's conservation objectives and there is no reasonable doubt remaining as to the absence of such effects.

Environmental Impact Assessment:

The Board completed an environmental impact assessment of the proposed development taking account of:

(a) the nature, scale, location and extent of the proposed development,

(b) the Environmental Impact Assessment Report and associated documentation submitted in support of the planning application, including further information,

(c) the submissions received during the course of the application and at the oral hearing,

(d) the Inspectorate Ecologist's assessment, and

(e) the Inspector's report.

The Board considered that the environmental impact assessment report, supported by the documentation submitted by the applicant, adequately considers alternatives to the proposed development and identifies and describes adequately the direct, indirect, secondary and cumulative effects of the proposed development on the environment. The Board agreed with the examination, set out in the Inspector's report, of the information contained in the environmental impact assessment report and associated documentation submitted by the applicant and submissions made in the course of the planning application.

Reasoned Conclusions on the Significant Effects

The Board considered that the main significant direct and indirect effects of the proposed development on the environment are, and would be mitigated, as follows:

- The main impacts on **population and human health** will arise from emissions to air during the construction and operational stages of the development associated with dust, noise, emissions from operating plant and odour. It is considered that these impacts can mitigated by the implementation of the measures set out in the Environmental Impact Assessment Report (EIAR) and the outline Construction and Environment Management Plan (oCEMP).
- Impacts on **biodiversity** within the site would not be significant are capable of effective mitigation by the implementation of the measures set out in the Environmental Impact Assessment Report (EIAR) and the Natura Impact Statement.

  The habitats that would be impacted are of low ecological value with no rare or protected plants species recorded. The Kentstown stream suffers from poor water quality with low fisheries potential.

  Faunal species such as Otter and Badger use the site for transient foraging but are not breeding on the site. The majority of the birds recorded are not of conservation concern and no protected birds/species of conservation interest are breeding on the site. No bat roosts were recorded. The amphibian records identified Frogspawn, which if encountered during construction will be relocated to similar habitat.

- Subject to the implementation of the measures set out in the Environmental Impact Assessment Report (EIAR) and the outline Construction and Environment Management Plan (oCEMP), potential impacts on **land, soil and water** will not be significant. The provision of an additional surface water management system with a four stage treatment process will reduce the potential for impacts on water quality. The provision of flood compensation measures will reduce the potential for flooding outside the site.
- The impacts on **climate** are assessed as positive associated with the generation of renewable energy.
- Potential impacts on **Landscape** will be mitigated by the provision of planted berms and replanting in accordance with a landscaping plan, which will provide a visual buffer between the landfill and sensitive receptors. The increase in height of the landfill body overall visual impact of the proposed development will be highly localised and confined to the environs of the site.
- Potential impacts in terms of **Material Assets** (Roads & Traffic) will be mitigated during construction by the measures set out in the outline Construction and Environment Management Plan (oCEMP) and during the operational phase by the Operational Traffic Management Plan required by condition. The increase in traffic arising from the proposed development can be accommodated without resulting in significant effects on the carrying capacity and performance of the road network.
- Potential impacts on **Cultural Heritage** will be mitigated during the construction stage through archaeological monitoring od ground works.

The Board is satisfied that the reasoned conclusion is up to date at the time of making the decision.

The Board completed an environmental impact assessment in relation to the proposed development and concluded that, subject to the implementation of the mitigation measures proposed as set out in the EIAR, and subject to compliance with the conditions set out below, the effects of the proposed development on the environment, by itself and in combination with other plans and projects in the vicinity, would be acceptable. In doing so, the Board adopted the report and conclusions of the Inspector.

Having considered the totality of the Environmental Impact Assessment Report, associated documentation submitted with the application, the report of the Inspector and the Inspectorate ecologist's report, the Board concluded that any likely significant effects on the environment would be mitigated by the mitigation measures proposed by the applicant.

Proper planning and sustainable development:

It is considered that subject to compliance with the conditions set out below the proposed development would accord with European, national, regional and local planning and related policy, would not seriously injure the visual or residential amenities of the area or of property in the vicinity, would not have an unacceptable impact on the landscape or ecology, would not pose a risk to water quality and would be acceptable in terms of traffic safety and convenience. The proposed development would, therefore, be in accordance with the proper planning and sustainable development of the area.

Conditions

1. The development shall be carried out and completed in accordance with the plans and particulars lodged with the application, as amended by the further plans and particulars submitted on the 25th day of October 2019, except as may otherwise be required in order to comply with the following conditions. Where such conditions require details to be agreed with the planning authority, the developer shall agree such details in writing with the planning authority prior to commencement of development and the development shall be carried out and completed in accordance with the agreed particulars. In default of agreement, the matter(s) in dispute shall be referred to An Bord Pleanala for determination.

   Reason: In the interest of clarity.

2. The mitigation measures and monitoring commitments identified in the Environmental Impact Assessment Report shall be implemented in full.

   Reason: In the interests of clarity and the proper planning and sustainable development of the area.

3. The mitigation measures contained in the Natura Impact Statement submitted with the application shall be implemented in full.

   Reason: In the interests of clarity and the proper planning and sustainable development of the area and to ensure the protection of European Sites.

4. Waste to be accepted at the facility for disposal, recovery and treatment shall not exceed 440,000 tonnes per annum, comprising up to 435,000 tonnes per annum of non-hazardous waste and up to 5,000 tonnes per annum of stable non-reactive hazardous waste, subject to the following requirements:

   (a) The volume of residual municipal solid waste accepted for disposal shall not exceed 188,000 tonnes per annum, which shall be reviewed after a period of three years.

   (b) 44,000 tonnes per annum shall be reserved as contingency capacity.

   (c) 150,000 tonnes per annum of Incinerator Bottom Ash shall be accepted for storage pending recovery. The period of storage of this material shall not exceed 5 years unless otherwise agreed in writing with the planning authority.

   (d) a maximum of 25,000 tonnes per annum of municipal solid waste fines for treatment at the biological treatment facility

   (e) baled recyclables shall not be placed in the landfill void.

   Reason: To ensure that the volume of waste for disposal addresses identified capacity issues and does not discourage the expansion of other waste treatment options further up the waste hierarchy and the continued diversion of waste from landfill.

5. A comprehensive landscaping plan, prepared by a suitably qualified person, shall be submitted to and agreed in writing with the planning authority, prior to the commencement of the development. The plan shall include the following;

   (a) A detailed phasing scheme for tree felling on site and for the construction of the proposed berms.

(b) an assessment of the carbon sequestration of trees to be removed on the site and details of the level of tree planting required to ensure that the level of carbon capture is not reduced.

(c) details of proposed planting scheme which shall include details of the number, age and species to include native deciduous woodland.

(d) Proposals for the protection of trees to be retained and for future maintenance.

Reason: In the interests of visual amenity.

6. Details of the materials, colours and textures of all external finishes to the proposed buildings shall be submitted to, and agreed in writing with the planning authority, prior to commencement of the development.

   Reason: In the interests of visual amenity.

7. Working hours during the construction phase of the development shall be confined to between 08.00 and 18.30 hours Monday to Friday inclusive and between 08.00 and 14.00 hours on Saturdays and not at all on Sundays and public holidays. Deviation from these times will only be permitted in exceptional circumstances where prior written approval has been received from the planning authority.

   Reason: In order to safeguard the amenities of properties in the vicinity.

8. The construction of the development shall be managed in accordance with a Construction and Environmental Management Plan which shall be submitted to and agreed in writing with the planning authority prior to the commencement of the development. This plan shall cover all aspects of the construction phase and incorporate measures to avoid, minimise and mitigate potential effects on the environment. The plan shall provide details of the phasing of the development, intended construction practice, including hours of working, noise management measures, construction traffic management plan, surface water management plan, waste management plan and a programme for the monitoring commitments made in the application and supporting documentation during the construction period. The plan shall be updated at regular intervals.

Reason: In the interests of public safety and residential amenity.

9. Prior to commencement of development the developer shall submit the following for written agreement with the planning authority;

   (a) an operational traffic management plan with details of proposed haul routes for landfill traffic. The plan shall be subject to review as required by the planning authority and Transport Infrastructure Ireland.

   (b) provisions prohibiting landfill associated traffic from travelling along the regional road, the R150, between its junction with the R153 to the west and the N2 to the east,

   (c) a Stage 4 Road Safety Audit of the existing site access in accordance with the Transport Infrastructure Ireland standards.

10. The developer shall facilitate the preservation, recording and protection of archaeological materials or features that may exist on the site. In this regard, the developer shall-

    (a) notify the planning authority in writing at least four weeks prior to the commencement of any site operation (including hydrological and geotechnical investigations) in relation to the development,

    (b) employ a suitably qualified archaeologist who shall monitor all site investigations and other excavation works.

    (c) provide arrangements, acceptable to the planning authority, for the recording and for the removal of any archaeological material which the authority considers appropriate to remove.

    In default of agreement on any of these requirements, the matter shall be referred to An Bord Pleanala for determination.

    Reason: In order to conserve the archaeological heritage of the site and to secure the preservation and protection of any remains that may exist within the site.

11. No instream works shall be carried out between the 1st day of October and the 30th day of June in any year.

Reason: In the interests of nature conservation and the protection of European sites.

12. The developer shall prepare an Invasive Species Management Plan for the written agreement of the planning authority and all plant and machinery used during the works should be thoroughly cleaned and washed before delivery to the site to prevent the spread of hazardous invasive species and pathogens.

    Reason: In the interest of the proper planning and sustainable development of the area.

13. The developer shall retain the services of a suitably qualified and experienced bat specialist to survey trees to be removed for the presence of bat roosts prior to commencement of development. The removal of any roosts identified shall be carried out only under licence from the National Parks and Wildlife Service

    Reason: In the interest of protecting ecology and wildlife in the area.

14. Artificial light sources relating to the proposed development shall be designed to avoid spillage outside the site.

    Reason: In the interest of the proper planning and sustainable development of the area.

15. The developer shall pay a sum of money to the planning authority, either annually or in such manner as may be agreed, towards the cost of the provision of environmental improvement and recreational or community amenities in the locality. The identification of such projects shall be decided by the planning authority having consulted with the community liaison committee as provided for under the original permission PL17.125891, governing the development of the site. The amount of the contribution and the arrangements for payment shall be agreed between the developer and the planning authority or, in default of such agreement shall be referred to the Board for determination. The amount shall be index linked in the case of phased payment. The developer shall consult with the planning authority in this regard prior to the commencement of the development.

Reason: It is considered reasonable that the developer should contribute towards the cost of environmental, recreational or community amenities which would constitute a substantial gain to the local community.

16. Prior to commencement of development, the developer shall lodge with the planning authority a cash deposit, a bond of an insurance company, or such other security as may be acceptable to planning authority, to secure the satisfactory reinstatement of the site and delivery route upon cessation of the project, coupled with an agreement empowering the planning authorities to apply such security or part thereof to such reinstatement. The form and amount of the security shall be as agreed between the planning authorities and the developer or, in default of agreement, shall be referred to An Bord Pleanála for determination.

    Reason: To ensure satisfactory reinstatement of the site.

17. The developer shall pay to the planning authority a financial contribution in respect of public infrastructure and facilities benefiting development in the area of the planning authority that is provided or intended to be provided by or on behalf of the authority in accordance with the terms of the Development Contribution Scheme made under section 48 of the Planning and Development Act 2000. The contribution shall be paid prior to the commencement of development or in such phased payments as the planning authorities may facilitate and shall be subject to any applicable indexation provisions of the Scheme at the time of payment. Details of the application of the terms of the Scheme shall be agreed between the planning authorities and the developer or, in default of such agreement, the matter shall be referred to the Board to determine the proper application of the terms of the Scheme.

    Reason: It is a requirement of the Planning and Development Act 2000 that a condition requiring a contribution in accordance with the Development Contribution Scheme made under section 48 of the Act be applied to the permission.

Breda Gannon
Senior Planning Inspector
2nd March, 2021