

12. Material Assets

12.1. Introduction

This section of the EIAR report has been prepared by Atkins, with input as required from Finn Design Partnership. According to relevant Draft EPA guidance (EPA, 2017) the following topics warrant consideration under material assets:

- Built Services;
- Roads and Traffic; and,
- Waste Management.

Roads and traffic have been assessed separately as part of this EIAR. Refer to Chapter 8 – Traffic. Therefore, this assessment examines material assets serving the proposed development specifically in relation to existing and proposed built services (i.e. foul sewerage, surface water drainage, water supply, gas, electricity, and telecommunications utilities), and waste management; both of which are assessed separately within this section.

12.2. Built Services

12.2.1. Assessment Methodology

The methodology used to prepare this section of the EIAR is in accordance with the EPA ‘*Draft Guidelines on the Information to be contained in Environmental Impact Assessment Reports (EIAR)*’ (2017), and ‘*Advice Notes for Preparing Environmental Impact Statements Draft September 2015*’. The following sources have been used to collate information on built services within the general area of the Site;

- ESB Network Utility Plans;
- eir Telecommunications Plans; and
- Available utility information and maps received from Irish Water and Louth County Council.

This information has been supplemented by observations recorded during various Site walkover surveys, and pre-application consultation with both Irish Water and Louth County Council. Surface water runoff, foul drainage discharge and water supply requirements have also been designed with due regard to the following guidelines:

- SuDS Manual (CIRIA (2007));
- Irish Waters Code of Practises and Technical Standards (IW-CDS-5030-01 to 04 & IW-TEC-800); and,
- Irish Water’s Pre-Connection Enquiry Application (water demand and foul water loading).

12.2.2. Receiving Environment

The Site of the proposed development is currently a greenfield Site. However, residential properties are located along the northern Site boundary, further north and south-east of the Site. Finnabair Industrial Park is also located further north. The western and part of the southern boundary of the Site adjoins Dundalk Golf Course and practice range. The remainder of the southern boundary joins with lands which are currently in agricultural use, but also zoned for residential use. Consultation with relevant bodies has been undertaken to determine existing utilities present in the vicinity of the Site. A complete set of all utility / service plans received showing the general vicinity of the Site is presented in Appendix J.

12.2.2.1. Storm Water Drainage

There is currently no public storm water drainage networks beneath or immediately adjacent to the greenfield Site.

12.2.2.2. Foul Water Drainage

There is currently no public foul water drainage network beneath the greenfield Site; however existing foul drainage networks are located along Blackrock Road and Bóthar Maol. The current foul water drainage system in the vicinity of the Site is limited to the Loakers housing estate (to the north of the

Site), to the rear of residential properties located east of the R132, and within the Birch's Lane area (to the south of the Site). Refer to Appendix J.

12.2.2.3. Water Supply & Distribution

The greenfield Site is currently not serviced by public water supply. Within the immediate vicinity of the Site public watermains are located along Blackrock Road, along the R132, Loakers housing estate, Finnabair Industrial Park, and within the Birch's Lane area. Refer to Appendix J. An existing groundwater supply well is also located in the north western corner of the proposed development. The well is disused and will be decommissioned as part of the proposed development. All water supply requirements for the proposed development will be provided by public water supply.

12.2.2.4. ESB Supply

As presented in Appendix J there are no existing underground ESB services beneath the greenfield Site. Low to medium voltage underground cables are located north and south-east of the Site. Medium voltage overhead lines currently run across the greenfield Site, from the north western portion of the Site in a diagonal direction before following the southern Site boundary in the south eastern portion of the Site.

12.2.2.5. Gas Supply

As presented in Appendix J there are no existing gas utilities beneath the greenfield Site. However, a gas supply network runs along Blackrock Road and Bóthar Maol, and residential properties to the north, east and south-east of the Site are all serviced by the existing gas network.

12.2.2.6. eir Network

There are no existing eir networks beneath the greenfield Site. Consultation with eir has confirmed that buried ducts are located along Blackrock Road. Refer to Appendix J.

12.2.2.7. Street Lighting

As the Site is currently greenfield in nature there is no street lighting located within the immediate vicinity of the site.

12.2.3. Impact Assessment

12.2.3.1. Characteristics of the Proposed Development

A detailed description of the proposed development is presented in Chapter 2 - Project Description. The following summary relates to the characteristics of the proposed development specifically in relation to proposed built services / utilities.

12.2.3.1.1. Surface Water / Storm Water Drainage

Stormwater run-off will be collected from the roofs, pavements and other impermeable surfaces i.e. open space via a standard manhole and underground pipework system which will be primarily laid along the internal road network. SuDS have been incorporated into the drainage design to reduce run-off rates and to improve run-off quality. The SuDS design will include for permeable paving, swales, filter drains, silt traps and oil interceptors as well as an onsite attenuation pond. The rate of flow will be controlled by the installation of a flow control device fitted to the discharge pipe from the pond. The attenuation pond will be located within the open space area which will act as attenuation and also add to the aesthetic value of the development. The various SuDS measures to be adopted as part of the proposed development are detailed in full within the Chapter 10 – Water section of this EIAR.

The proposed drainage system (consisting of 225 mm, 300 mm, 450 mm, 525 mm, 675 mm and 750 mm diameter pipeline) has been designed based on 4no. separate catchment areas (network 1 to 4), as presented in Drawing Ref: 1703-Eng-110 to Drawing Ref: 1703-Eng-119 (refer to Appendices B and C of the Engineering Services Report submitted with this application) and summarised as follows.

Network 1 and 2 - Storm water from each of the two large catchment areas (network 1 and 2) will pass through a silt trap (minimum volume of 4.5m³) and hydrocarbon interceptor (Kingspan Klargester Class 1 bypass separator) before being attenuated in a proposed infiltration basin which will be located within the eastern portion of the Site. Attenuated flows will then be discharged under allowable greenfield runoff rates to an existing open channel

(northern channel) within the estuary of Dundalk Bay, based on the following design measures:

- A drainage pipeline (375mm diameter) will be installed to convey flow from the infiltration basin to discharge into a 1000mm wide (750mm high) box culvert. The maximum allowable design flow from the infiltration basin is 80.60 lts/sec which has been calculated by reducing the overall allowable runoff rate of 105.9 lts/sec, that has been calculated for that part of the Site where the residential units and creche will be constructed, by 25.3 lts/sec to take account of the fact that the flows from network 3 are not attenuated.
- This culvert will extend to the end of the existing open northern channel and will be laid so that there will be a minimum of 150mm minimum depth of water in the culvert at all times.
- Flow control measures will be installed to ensure the velocity of water exiting the culvert at all times will not exceed 0.465 litres per second (l/s).
- A new head wall will be constructed at the outlet of the box culvert.
- The energy of the discharge will be further dissipated through the installation of a riprap apron (2m long and 0.25m deep) at the outlet of the culvert by laying 100mm broken stone across this zone.
- These design measures will ensure that Dundalk Bay SAC/ SPA is protected against any potential erosion which could result at the discharge point.
- All proposed storm water drainage works will be carried out above the relevant high water mark (high tide), and therefore do not require a foreshore licence.

Network 3 - Storm water from this minor catchment area in the north-eastern portion of the proposed development (network 3, designed to accommodate run-off from 20 no. properties an internal road network that serves the units will join the drainage pipeline from the infiltration basin, before passing through a silt trap (minimum volume of 2.5m³) and hydrocarbon interceptor (Kingspan Klargest Class 1 bypass separator) immediately prior to discharge from the north-eastern Site boundary. These minor volumes of additional storm water will discharge to the existing open northern channel prior to discharge to Dundalk Bay SAC/ SPA, as outlined in detail above. Flow control measures for all 20no. units have been incorporated into the drainage design where the overall allowable runoff rate of 105.0 lts/sec that has been calculated for that part of the development Site has been reduced to take account of the arrangement where the flows from this networks are not attenuated.

Network 4 - Storm water from a minor catchment area along the south-eastern boundary of the proposed development (network 4, designed to accommodate run-off from the main internal access road to the development) will also be attenuated prior to passing through a silt trap (minimum volume of 2.5m³) and hydrocarbon interceptor (Kingspan Klargest Class 1 bypass separator). A second allowable runoff rate of 2.1 lts/sec has been calculated for this area of the Site where the attenuated flows will be retained in oversized pipes before discharging to the existing open eastern channel via. a new head wall which will be constructed at the outlet from the drainage pipe, prior to discharge to the existing wetlands in this area (which form part of the Dundalk Bay SAC / SPA). Flows are expected to be negligible as modelled within the Flood Risk Assessment (Finn Design Partnership, 2018) included in Appendix H of this EIAR).

A full set of all proposed drainage design drawings are presented in Appendix A of this EIAR.

12.2.3.1.2. Foul Drainage

Proposed foul drainage services (150 – 225mm diameter pipeline) will be provided; all wastewater will discharge via. gravity to the proposed wastewater pumping station along the eastern boundary of the Site, where it will be pumped, via. the proposed rising main, through the Site and extend along Bóthar Maol in a north-westerly direction prior to discharging to the foul mains network and ultimately Dundalk Wastewater Treatment Plant (WWTP) located approximately 4km north-east of the proposed development. Irish water has confirmed that the existing foul network has sufficient capacity to meet the combined wastewater discharge volumes of approximately 290.25m³/ day from the proposed development, once operational. The proposed onsite waste water pumping station which will be a closed system will be located along the eastern boundary of the Site with capacity for minimum 12-hour emergency storage. A full set of all proposed drainage design drawings are presented in Appendix A of

this EIAR. Refer also to the Engineering and Services Report prepared by Finn Design Partnership (2019), submitted as part of this planning application.

12.2.3.1.3. Water Supply and Distribution

Proposed watermain services (100 - 300mm diameter pipeline), including firewater requirements for the development will be provided. The peak daily domestic water demand (including potable use) for the proposed development is calculated to be 290.25m³ per day. Irish water has confirmed that the existing water network will have sufficient capacity to meet peak operational water requirements of 290.25m³ per day from the proposed development. A full set of all proposed drainage design drawings are presented in Appendix A of this EIAR. Refer also to the Engineering and Services Report prepared by Finn Design Partnership (2019), submitted as part of this planning application.

12.2.3.1.4. ESB

Power supply, and the requirement for any alterations to the existing power supply network for the development of the subject Site, will be agreed with ESB Networks in advance of construction. All power supply related works will be carried out in accordance with ESB Networks relevant guidelines.

12.2.3.1.5. Gas

Gas supply, and the requirement for any alterations to the existing gas supply network for the development of the subject Site, will be agreed in advance of construction with Gas Networks Ireland. All gas supply related works will be carried out in accordance with Gas Networks Ireland relevant guidelines.

12.2.3.1.6. eir Network

Connection to the existing eir network in the vicinity of the proposed development will be agreed in advance of construction with eir. All telecommunication supply related works will be carried out in accordance with relevant eir guidelines.

12.2.3.1.7. Street Lighting

A Street lighting plan was prepared by Caldwell (2019) in accordance with relevant guidelines which will be implemented as part of the proposed development, as presented in full in Appendix J.

12.2.3.2. Potential Impacts during the Construction phase

The following potential impacts associated with existing and proposed built services in the vicinity of the Site during the construction phase have been identified:

- Damage to existing overhead medium voltage power supply which runs across the Site;
- Contamination to the existing public water supply network during connection to the proposed new water supply network within the residential development; and,
- Potential power outages / gas supply interruptions to existing services in the surrounding area during the connection of the proposed new supply networks within the residential development to the existing networks.

These potential impacts will be short term and slight adverse.

12.2.3.3. Potential Impacts the during the Operational Phase

Irish water has confirmed that both the existing foul network, and water supply network have sufficient capacity to meet the foul and water supply requirements of the proposed residential development, once operational. As previously stated, all power, gas and telecommunications networks and street lighting will be installed and commissioned within the proposed development in accordance with the relevant service providers guidelines and requirements and standard best practice guidelines. Therefore, no significant adverse, long-term impacts are predicted to occur during the operational phase.

12.2.3.4. Do Nothing Impact

The Material Assets Assessment assumes that under the 'Do-Nothing' scenario the proposed scheme would not be developed. Thus, there would be a neutral impact on built assets within the vicinity of the proposed development.

12.2.3.5. Cumulative Impacts

No cumulative impacts are anticipated during the construction or operational phases of the proposed development associated with built services.

12.2.4. Proposed mitigation measures during Construction phase

The following mitigation measures will be implemented during the construction phase;

- A project-specific Detailed Construction Environmental Management Plan (CEMP) will be prepared by the appointed contractor prior to the commencement of construction works. This document will take account of, and further develop, all of the environmental considerations (including water, dust and noise nuisance control; soil / stockpile management; temporary groundwater management; appropriate Site management of compound area; fuel, oil and chemical storage and use; and waste management) set out in the Outline CEMP submitted as part of this planning application.
- The construction compound will include adequate temporary welfare facilities including foul drainage and potable water supply. Foul drainage discharge from the compound will be removed off Site to an appropriately licensed facility for disposal until a connection to the public foul drainage network has been established.
- All newly installed utilities/ services should be assessed, tested and certified as required prior to being fully commissioned.
- Connections to the existing networks will be coordinated with the relevant utility provider.
- A copy of all available existing, and as built utility plans will be maintained on Site during the construction of Phase 1 through to Phase 11 of the proposed development. The overhead power lines which currently traverse the Site will be clearly marked and all Site personnel will be made aware of the known location of any onsite underground or over ground services during the construction phase.
- Street Lighting will be implemented in accordance with the Lighting Proposal Plan prepared by Caldwell (2019).

12.2.5. Proposed mitigation measures during Operational Phase

As no significant adverse impacts are predicted to occur during the operational phase, no mitigation measures apply to the operational phase of the proposed development.

12.3. Waste Management

12.3.1. Assessment Methodology

This section of the EIAR has been prepared in accordance with the EPA 'Draft Guidelines on the Information to be contained in Environmental Impact Assessment Reports (EIAR)' (2017), 'Advice Notes for Preparing Environmental Impact Statements Draft September 2015', and 'Best Practice Guidelines on the Preparation of Waste Management Plans for Construction & Demolition Projects' (Department of Environment, Heritage and Local Government, DoEHLG, 2006).

The findings of the Outline Construction and Demolition (C&D) Waste Management Plan (WMP) (Atkins, 2019) prepared as part of this planning application have been incorporated into this assessment where relevant. A copy of the Outline C&D WMP is presented in Appendix J. This document has been prepared with due regard to the following relevant documents:

- 'Waste Classification: List of Waste & Determining if Waste is Hazardous or Non-Hazardous' (EPA, 2015);
- 'A review of Design and Construction Waste Management Practices on Selected Case Studies – Lessons Learned' (EPA, 2015);
- 'Design out Waste: Preparation of Waste Reduction Factsheets for Design Teams' (EPA, 2015); and,
- 'Development of an Audit Methodology to Generate Construction Waste Projection Indicators for the Irish Construction Industry' (EPA, 2009).

This assessment has also been informed by findings of the Chapter 9 – Land, Soils and Geology section of this EIAR.

12.3.2. Receiving Environment

The Site of the proposed development is currently a greenfield Site. The northern boundary is defined by a variety of private residential properties which front Bóthar Maol. The western and part of the southern boundary of the Site adjoin Dundalk Golf Course and practice range. The remainder of the southern boundary joins with lands which are currently in agricultural use, but also zoned for residential use. Along much of the eastern boundary are mature hedgerows and trees which separate the subject lands from two large Sites which are privately owned residential properties. Historic land-use at the Site was greenfield, based on a review of available historic mapping and aerial photography. The Site continues to be used as arable agricultural land. The Site is generally underlain by glacial till with bedrock close to surface at various locations across the Site. Bedrock generally comprises greywacke of the Clontail formation. Based on all available evidence, including soil analytical data and findings from the geotechnical investigation (as detailed in Chapter 9 – Land, Soils and Geology), soils beneath the greenfield Site are not considered to pose an unacceptable risk to human health, building and services, environmental receptors or third-party Sites.

On a regional scale, the closest EPA licenced facility is c. 1.5km west of the Site. There are 6no. EPA licenced facilities (2no. EPA waste licences, 3no. IPC licences and 1no. IED licence) and 5no. Local Authority waste permitted Sites in the general area, as detailed further in Chapter 9 – Land, Soils and Geology.

12.3.3. Impact Assessment

12.3.3.1. Characteristics of the Proposed Development

A detailed description of the proposed development is presented in Chapter 2 - Project Description. The following summary relates to the characteristics of the proposed development specifically in relation to waste management. The proposed residential development will be designed, planned, constructed and operated to minimise waste generation at every stage.

The management of wastes generated during the construction of the proposed development will be in accordance with the Outline C&D WMP submitted as part of this planning application. The following waste streams will be generated during the construction phase: native non-contaminated soils, mixed C&D waste, wood / timber, metal, paper, plastics and packaging, canteen / office waste, and other waste (comprising soiled paper, cardboard, plastics, cloth, insulation and plasterboard).

During the operational phase, the proposed residential development has been designed to provide adequate domestic refuse storage areas for individual dwellings within the curtilage of each Site, within a paved collection area at the entrance to each home zone, and within communal waste collection areas for the duplex and apartment units. The following primary waste streams will be generated during the operational phase: dry mixed recyclables, mixed general waste / non-recyclables, glass, and organic waste. In addition, the following waste streams will occasionally be generated by the residents of the proposed development: green waste, WEEE, batteries, textiles and bulky waste.

12.3.3.2. Potential Impacts during Construction phase

During the construction phase, it has been estimated that the various waste streams will be generated and managed as follows (refer to Outline C&D WMP presented in Appendix J).

12.3.3.2.1. Native Non-Contaminated Soils

The estimated volume of soil generated during the construction phase (est.: 46,929 m³) will be minimised by reducing / eliminating the need for excavation and importing of capping layers. Lime stabilisation may also be used to reduce the amount of soils generated onsite. The balance of soil materials excavated from the Site will be reused where possible for landscaping purposes, and infill where appropriate, ensuring that any residual soil waste is kept to a minimum. Any surplus soil will be characterised and removed offsite in accordance with all relevant waste management legislation.

12.3.3.2.2. Mixed C&D Waste

Following segregation onsite, any residual mixed C&D waste (est.: 682 tonnes) will be collected in containers specifically for mixed C&D waste; these will be removed offsite for subsequent offsite separation and disposal at a waste disposal / recovery facility.

12.3.3.2.3. Wood / Timber

Timber waste (est.: 995 tonnes) will be segregated in order to prevent contamination by other wastes and will be stored so as to limit the potential for this material to rot. Wooden pallets will be returned to relevant suppliers where possible. Timber offcuts will be reused onsite where feasible. A covered receptacle for waste wood will be placed in the waste storage area, prior to removal from Site for recycling. All such timber will be free from chemical treatment.

12.3.3.2.4. Metals

Metal waste (est.: 546 tonnes) will be generated during the project, particularly arising from the use of rebar. All waste metal will be segregated offsite at the waste disposal / recovery facility for reuse and recycling. Given the significant scrap value associated with metal waste, this waste will be stored in a dedicated container within a secure part of the Site, and regular collections from Site to the waste recycling facility will limit the potential for unauthorised entry and theft.

12.3.3.2.5. Paper, plastics and Packaging

Packaging wastes (est.: 580 tonnes) will be removed (paper / cardboard / plastic / general waste) offsite for subsequent offsite separation and disposal at a waste disposal / recovery facility. Waste packaging will be stored in dedicated containers in the waste storage area for collection and subsequent segregation and recycling.

12.3.3.2.6. Canteen / Office Waste

Onsite staff canteens will generate food and packaging waste (est.: 85 tonnes). Dedicated containers will be provided at each canteen to permit easy segregation of these wastes; brown bins will be provided for compostable food waste, green bins will be provided for dry recyclables (packaging, hard plastic, paper, cardboard, tetrapak etc.) and black bins will be provided for any residual waste.

12.3.3.2.7. Other wastes

In addition to the above waste streams, other waste materials (est.: 2,070 tonnes) will be generated during the construction phase. These residual wastes will typically comprise non-recycling waste such as soiled paper / cardboard / plastics / cloth, fibreglass, polystyrene insulations and plasterboard. These materials will be stored separately to all other waste streams in order to prevent any cross contamination.

All waste materials will be segregated onsite into the various waste streams, via. dedicated skips and storage areas. All waste will be removed from Site by one or more waste haulage contractor(s) who hold a current valid waste collection permit issued by the National Waste Collection Permit Office (NWCPO). All waste materials generated during the construction phase will be removed offsite to an appropriately permitted or licenced waste disposal / recovery facility. All waste removed offsite will be appropriately characterised (under the correct LoW / EWC code), transported and disposed of in accordance with relevant waste management legislation (including but not limited to the Waste Management Act of 1996, 2001 and 2003 and all subsequent waste management regulations as amended). All waste management and disposal / recovery records will be maintained onsite throughout the project and will be made available for viewing by the Client, Employer's Representative and statutory consultees (LCC, EPA) as required.

The waste management strategy during the construction phase of the proposed development has been developed in accordance with the relevant Regional Waste Management Plan for Louth County Council, the '*Eastern-Midlands Region Waste Management Plan 2015-2021*'. The overarching objectives of the Eastern-Midlands Region Waste Management Plan 2015-2021 have been incorporated into the latest development plan pertinent to this Site i.e. Louth Development Plan 2015-2021 (LCC). According to LCC (2015) all Regional Waste Management Plans have the following objectives:

- Prevent or minimise the production and harmful nature of waste;
- Encourage and support the recovery of waste;
- Ensure that such waste as cannot be prevented or recovered is safely disposed of; and,
- Address the need to give impact to the polluter pays principle, in relation to waste disposal.

The Louth Development Plan 2015-2021 specifically states the following with regards to construction and demolition waste management:

'... developers and builders should minimise construction waste generated in development projects. During the construction process measures should be implemented to minimise soil removal (as part of the scheme design process), properly manage construction waste and encourage off-Site prefabrication where feasible.'

Therefore, while waste will be generated during the construction of the proposed development, all waste streams will be managed in accordance with statutory waste management and environmental requirements, regional waste related policy, best practice waste management guidance, and a project specific Outline C&D WMP. As with any construction project, there is potential for nuisance issues to arise during the construction phase, associated with mud or waste materials impacting roads and footpaths adjacent to the proposed development. The potential impacts of waste generated during the construction phase (via. transport and disposal / recovery to appropriately permitted / licenced facilities; and potential nuisance issues) will be short-term and slight adverse. Mitigation measures will be implemented as required to further manage these potential impacts.

12.3.3.3. Potential Impacts during Operational Phase

During the operational phase, communal waste collection areas will be clearly identified, secure, have adequate lighting and drainage, and will be easily accessible for bin collection crews. Each communal waste collection area will provide the following capacity for family households: 120L waste and 75L recycling per week. During the operational phase waste shall be collected on a weekly basis by a commercial waste contractor who holds a current valid waste collection permit issued by the National Waste Collection Permit Office (NWCPO). All waste materials will be removed offsite to an appropriately permitted or licenced waste disposal / recovery facility. All such waste will be transported and disposed of in accordance with relevant waste management legislation (including but not limited to the Waste Management Act of 1996, 2001 and 2003 and all subsequent waste management regulations as amended).

Therefore, while waste will be generated during the operational phase of the proposed development, all such waste will be managed in accordance with statutory waste management and environmental requirements, regional waste related policy, and best practice waste management guidance. As with all residential developments, there will be potential for litter pollution within the proposed housing estate and surrounding areas. The potential impacts of waste generated during the operational phase (via. transport and disposal / recovery to appropriately permitted / licenced facilities; and potential litter issues) will be long-term and imperceptible. Regardless, mitigation measures will be implemented to manage potential litter impacts.

12.3.3.4. Do Nothing Scenario

The Material Assets Assessment assumes that under the 'Do-Nothing' scenario that the proposed scheme would not be developed. Thus, there would be a neutral impact on waste management within the vicinity of the proposed development.

12.3.4. Cumulative Impacts

With regard to proposed waste management strategies, no potential cumulative impacts are anticipated during the construction and operational phases of the proposed development.

12.3.5. Proposed mitigation measures during Construction phase

The following mitigation measures will be implemented during the construction phase:

- All waste management procedures implemented onsite during the construction phase will be in accordance with the Outline C&D WMP (Atkins, 2019) submitted as part of this planning application. In advance of commencement onsite, the Contractor will prepare a project specific Detailed C&D WMP which will further develop this outline plan, and will provide specific details in terms of proposed permitted haulage contractors, and permitted / licenced waste disposal / recovery facilities;
- Scheduling and planning the delivery of materials will be carried out on an 'as needed' basis to limit any surplus materials;
- Materials will be ordered in sufficient dimensions so as to optimise the use of these materials onsite, and will be carefully handled and stored so as to limit the potential for any damage;

- Where feasible, sub-contractors will be responsible for the provision of any materials they require onsite in order to help reduce any surplus waste;
- All loaded trucks entering and exiting the Site will be appropriately secured and covered; and,
- Mud will be controlled at entry and exits to the Site using wheel washes and/or road sweepers, and tools and plant will be washed out and cleaned in designated areas. Wheel washings will be contained and treated prior to discharge.

12.3.6. Proposed mitigation measures during Operational Phase

Waste management during the operational phase of the development will be undertaken by private waste contractors (in accordance with statutory waste management and environmental requirements, regional waste related policy, and best practice waste management guidance), and regulated by Louth County Council. Therefore, no further mitigation measures are required with regard to the transport and disposal or recovery of all waste streams which will be generated during the operational phase.

The following mitigation measures will be implemented during the construction phase in order to minimise the potential impact of litter pollution;

- Suitably sized waste receptacles will be provided in communal areas within the residential development and crèche by private waste contractors;
- During the operational phase waste shall be collected on a weekly basis; and,
- It will be the responsibility of residents, crèche users and maintenance workers to ensure that all waste generated is disposed of appropriately and responsibly, in accordance with the 'polluter pays principle' as set out thin the Louth Development Plan 2015-2021 (LCC).

12.4. Residual Impacts

Taking account of the proposed mitigation measures for Material Assets, specifically built services, the residual impacts of the proposed development will be short-term and slight adverse during the construction phase, and long-term and not-significant during the operational phase.

Taking account of the proposed mitigation measures for Material Assets, specifically waste management, the residual impacts of the proposed development will be short-term and imperceptible during the construction phase, and long-term and imperceptible during the operational phase.

12.5. Monitoring Requirements

12.5.1. Construction Phase

As detailed within the Outline C&D WMP (Atkins, 2019) prepared as part of this planning application, the Contractor will be responsible for maintaining waste records and documentation for the full duration of the construction phase. The Contractor will track and monitor all waste volumes transported offsite. All waste records will be maintained onsite throughout the project and will be made available for viewing by the Client, Employer's Representative and statutory consultees (LCC, EPA) as required.

12.5.2. Construction Phase

No monitoring is required during the operational phase of the proposed development.