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3. DESCRIPTION OF THE PROPOSED DEVELOPMENT

3.1 Introduction

This section of the Environmental Impact Assessment Report (EIAR) describes the proposed development and its component parts. The proposed development will consist of the following:

1) Construction of 426 no. residential units comprising:
   - 237 no. houses (4 no. two-beds, 207 no. three-beds, 26 no. four-beds)
   - 15 no. apartments in Block A (4 no. one-beds, 10 no. two-beds, 1 no. three-beds)
   - 20 no. Apartments in Block B (5 no. one-beds, 15 no. two-beds)
   - 18 no. Apartments in Block C (4 no. one-beds, 14 no. two-beds)
   - 18 no. Apartments in Block D (4 no. one-beds, 14 no. two-beds)
   - 15 no. Apartments in Block E (4 no. one-beds, 10 no. two-beds, 1 no. three beds)
   - 16 no. Duplex Apartments in Block F (8 no. two-beds, 8 no. three-beds)
   - 11 no. Apartments in Block G (3 no. one-bed, 8 no. two-beds)
   - 16 no. Duplex Apartments in Block H (8 no. one-beds, 8 no. three-beds)
   - 12 no. Apartment Units in Block J (4 no. one-beds, 8 no. two-beds)
   - 12 no. Apartments in Block K (4 no. two-beds, 8 no. three-beds)
   - 14 no. Duplex Apartments in Block K1 (7 no. two-beds, 7 no. three-beds)
   - 12 no. Apartments in Block L (4 no. one-beds, 8 no. two-beds)
   - 10 no. Duplex Apartments in Block L1 (5 no. two-beds, 5 no. three-beds)

2) Development of a creche facility (545 sqm), associated outdoor play areas and parking

3) Construction of a 430m section of a new distributor road linking Coosan and Cornamaddy

4) Provision of shared communal and private open space, car and bicycle parking, site landscaping and public lighting, services, access with the Coosan Road and new distributor road, and all associated site development works.

3.2 Existing Site Description

3.2.1 Site Layout

The site measures approximately 15.615 hectares and is located on the northern edge of Athlone town. The site consists of a green field of previous agricultural use.

To the south and west of the development site are existing housing developments. A sportsground is located to the east of the site, while agricultural land generally lies to the north. There are no existing buildings or structures on the development site. An aerial photograph of the existing site is shown on Figure 2-2 in Chapter 2 of this EIAR.

3.2.2 Site Access

The road network within this proposed development can be broken-up in two distinct elements mainly:

1. *The internal road network servicing all residential units and crèche facility.*
2. *430m section of a new distributor road linking Coosan and Cornamaddy, including two bus bays to cater for future bus services running along the Cornamaddy-Coosan Link Road.*

The aforementioned distributor road is strategic objective no. O-TM20 of the Athlone Town Development Plan 2014-2020 (ADP) and it is proposed in both the Cornamaddy Action Area Plan (2005) and the Cornamagh Local Area Plan (2009).

This SHD planning application includes the construction of the 430m section that runs along the northern boundary of the proposed development. However, high-level study of a much wider area has been carried out to ensure the technical viability to the full extension of the Cornammady-Coosan Link Road, from the Coosan Point Road to the L8048 northwest of the roundabout on the N55, with a total length of 2km approximately. The findings of this study were discussed in detail with the Roads Department of WMCC on two separate meetings as referred in Chapter 2 of this report. It must be stressed that this future road project (except for the 430m section within this planning application) will be subject to its own separate planning and design process.

The main access to the development will be via a new entrance on Coosan Road opposite The Glen Park creating a 4-arm crossroads. Additionally, the main two spine roads that traverse the development will connect into the distributor road at both ends thereof, providing access to Cornamaddy and Coosan once the link road is completed. However, it must be highlighted that the local network has been assessed and is confirmed to be capable of supporting the entire development without the delivery of the Cornamaddy-Coosan Link Road and is addressed in Chapter 12 of this report.

The proposed scheme has been designed in accordance with the principles of the Design Manual for Urban Roads and Streets (DMURS), namely:

- Design Principle 1: To support the creation of integrated street networks which promote higher levels of permeability and legibility for all users, and in particular more sustainable forms of transport.
- Design Principle 2: The promotion of multifunctional streets that balance the needs of all users within a self-regulating environment.
- Design Principle 3: The quality of the street is measured by the quality of the pedestrian environment.
- Design Principle 4: Greater communication and cooperation between design professionals through the promotion of a plan led, multidisciplinary approach to design.

The masterplan provides for a high level of accessibility and permeability ensuring ease of circulation throughout the scheme and easy access to proposed areas of public open space and crèche facilities. Pedestrian and cycle routes will be provided throughout the scheme with a main arterial pedestrian and cycle route running through the scheme from north to south (Figure 3-1).

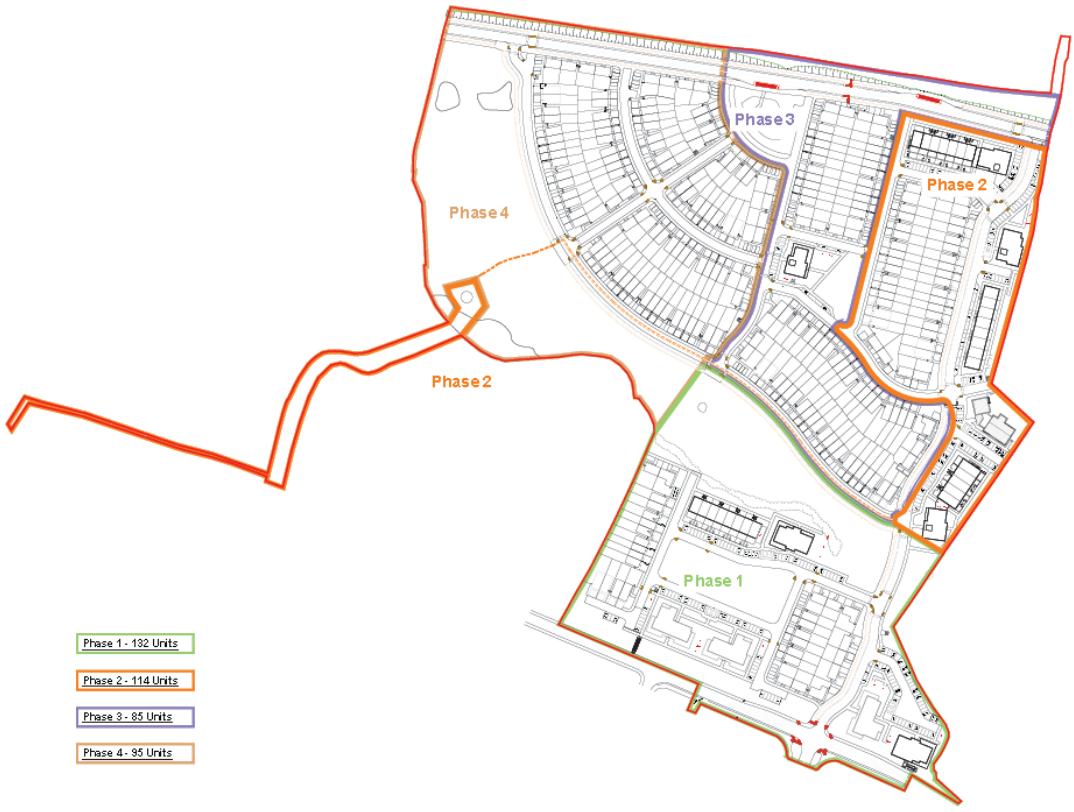
Figure 3-1 Site Accessibility

3.3 Proposed Development Construction Operations

The detailed drawings for the proposed development can be seen as Appendix 3-1 to this EIAR. A Construction and Environmental Management Plan (CEMP) can be seen as Appendix 3-2.

3.3.1 Phasing

It is anticipated that the development will be completed over 4 separate phases (See Figure 3-2), and the access and egress routes will change for the various phases. As some of the houses will be occupied during the later phases, Traffic Management procedures will be implemented to ensure the safety of the users of the access routes, for both the residential access and the construction access. The construction phase of the proposed development is expected to last approximately 3.5 years in total.



3.3.2 Hoarding

The site areas (phases 1 – 4) will be enclosed with a hoarding, details of which are to be agreed with Westmeath County Council. Hoarding panels will be maintained and kept clean for the duration of the project. The Contractor will be responsible for the security of the site. The Contractor will be required to undertake the following:

- Operate a Site Induction Process for all site staff,
- Ensure all site staff will have current 'Safe Pass' cards,
- Install adequate site hoarding to the site boundary,
- Maintain Site Security staff at all times,
- Install access security in the form of turn-styles and gates for staff,
- Separate public pedestrian access from construction vehicular access,
- Ensure restricted access is maintained to the works.

3.3.3 Access Arrangements for Vehicles

The access arrangements will be as specified in the statutory publications with reference to the publications "Traffic Management Guidelines" manual and the "Traffic Signs Manual" and as agreed with Westmeath County Council.

All deliveries and vehicles into site will access the site from the new site entrance which will be located on the south-eastern corner of the site boundary.

The location of the vehicular entrance and access will be regularly reviewed during the construction to ensure that the pedestrian and vehicular access points are located and maintained appropriately.

Access details for pedestrians and cyclists are discussed in Section 3.2.2.

3.3.4 Size of Vehicles

It is anticipated that there will be numerous types of delivery vehicles used to bring material to and from the site. These include:

- Skip lorries. These will include roll on/roll off skips for major demolition works and standard yard skips for waste.
- Spoil excavation.
- Ready mix concrete lorries.
- Flatbed delivery vehicles for the delivery of various material.

3.3.5 Parking and Loading Arrangements

A "Just in Time" approach will be implemented for the delivery of particular building materials such as concrete formwork and large structural steels. The location of this materials storage facility will be within the site boundary and highlighted within the Construction Management Plan.

Materials will be stored within the boundary of the site. It is proposed to provide on-site car parking spaces for workers during the construction.

3.3.6 Site Compound and Facilities

Site accommodation will be provided including suitable washing and dry room facilities for construction staff, canteen, sanitary facilities, first aid room, office accommodation etc. Access to the compound will be security controlled and all site visitors will be required to sign in on arrival and sign out on departure. The compound will be constructed using a clean permeable stone finish and will be enclosed with security fencing. Any wastewater will be removed by vacuum tanker using an authorized waste collector. The proposed site compound will be located away from the existing onsite drainage ditches in order to avoid any potential for impacts on water quality.

3.4 Site Landscaping

Before completion of the construction phase of each phase of the proposed development, landscaping works will be carried out to improve the visual amenity of the site. These landscaping works will follow the layout of the landscape plan provided in the Landscape Masterplan which is in Appendix 3-4.

There are no landscape designations on the subject site. The site will not impact on any designated views or prospects within the Westmeath County Development Plan 2014-2020.

3.5 Construction Methodologies

This section describes the construction methodologies that will be used for the proposed housing development. Further details are also provided in the Construction and Environmental Management Plan (CEMP) included as Appendix 3-2 of this EIAR.

3.5.1 Soil Excavation/Stripping, Redistribution & Temporary Stockpiling

The excavation and stripping of soils and subsoils will be required across much of the site, and this soil will need to be redistributed and temporarily stockpiled around the site as the proposed development progresses. Prior to the construction phase of the proposal, site levelling will be undertaken. During these works, topsoil within the southern section of the site (Phase 1) will be stripped and stored in a designated storage area for reuse. As this area currently supports seminatural grassland, the seedbank within the topsoil will be used within the green spaces during final landscaping work. This will ensure that the green spaces comprise of plant species of a local origin and reduce a requirement for reseeding. Full details of the soil/subsoil cut and fill is provided in Appendix 3-1 and in the Engineering Services Report as Appendix 3-3. Where these works occur, the following will apply:

- The area where excavations are planned will be surveyed and all existing services will be identified.
- All relevant bodies i.e. ESB, Bord Gáis, Eircom, Westmeath County Council etc. will be contacted and all drawings for all existing services sought.
- All plant operators and general operatives will be inducted and informed as to the location of any services.
- All plant operators and general operatives will be inducted and informed as to the identification of invasive species.
- A tracked 360-degree excavator will be used to excavate the material, and a dumper will be used to move the excavated materials to the temporary stockpile location.
- All excavated material which is not required for future landscaping works or for backfill of excavations will be removed to an authorised waste recovery facility. This will also apply to material which is not suitable for reuse on site.
- All stockpiles will be damped down or covered in a sheet of polythene, as required, which will prevent the creation of nuisance dust, and will also prevent sediment runoff in times of heavy precipitation.
- A silt filtration system will be used as appropriate to prevent contamination of any watercourse.

3.5.2 Temporary Site Compound

One temporary construction compound is proposed for the construction phase of the proposed development, which will be located at the site of the proposed creche. The proposed temporary compound area incorporates temporary site offices, staff facilities and car-parking areas.

A dedicated waste management area will be located within the compound, with waste to be sorted and collected from site by permitted collectors. Potable drinking water will be supplied via water coolers located within the staff facilities, which will be restocked on a regular basis as required during the construction phase. A supply contract will be set up with a water cooler supply company with water supplies delivered to site as required for the duration of the construction period.

Temporary port-a-loo toilets located within portacabins will be used during the construction phase. Wastewater from staff toilets will be directed to a sealed storage tank, with all wastewater being tankered off site by permitted waste collector to wastewater treatment plants. Power will be supplied by a diesel generator, located within the compound. The construction compound will be used for temporary storage of some construction materials, prior to their delivery to the required area of the site.

3.5.3 Site Roads

The construction methodology for the proposed access road is outlined as follows:

- Excavation will take place until a competent stratum is reached.
- The competent stratum will be overlain with up to 500mm of granular fill.
- A layer of geogrid/geotextile may be required at the surface of the competent stratum.
- A final hard surface layer will be placed over the excavated road to provide a road profile to accommodate construction traffic.
- Prior to completion of the construction works on site, the finished road surface will be applied.

3.5.4 Excavation and Services Installation

Services will be required to each property in the proposed development. Where these are located, the following will apply:

- The area where excavations are planned will be surveyed and all existing services will be identified.
- All relevant bodies i.e. ESB, Bord Gáis, Eircom, Westmeath County Council etc. will be contacted and all drawings for all existing services sought.
- A traffic management plan will be produced if required for connection works to the existing service network.
- A road opening licence will be obtained where required for connection to existing services.
- All plant operators and general operatives will be inducted and informed as to the location of any services.
- A tracked 360-degree excavator or similar will be used to excavate the trench to the required dimensions.
- All excavated material will be removed to an authorised waste recovery facility or, if suitable, stock piled and reused for backfilling and landscaping where appropriate.
- Once the trench has been excavated the ducting/pipework will then be placed in the trench as per specification.
- Once the service ducts/pipework has been installed couplers will be fitted as required and capped to prevent any dirt etc. entering the ducts/pipes.
- The built location of the ducting/pipework will be surveyed using a total station/GPS.
- Backfill material will be carefully placed so as not to displace the ducting/pipework within the trench.
- The appropriate warning/marker tape will be installed above the ducts/pipes at the appropriate depths.
- The surface will be reinstated as per original specification or to the requirements of the site layout/Local Authority as appropriate.

3.5.4.1 Existing Underground Services

Any underground services encountered during the works will be surveyed for level and where possible will be left in place. If there is a requirement to move the service, then the appropriate body (ESB, Gas Networks Ireland, etc.) will be contacted, and the appropriate procedure put in place. Back fill around any utility services will be with dead sand/pea shingle where appropriate. All works will be in compliance with required specifications.

3.5.5 House/Building Construction

The buildings will be constructed by the following methodology:

- The area where excavations are planned will be surveyed and all existing services will be identified.
- All relevant bodies i.e. ESB, Bord Gáis, Eircom, Westmeath County Council etc. will be contacted and all drawings for all existing services sought.

- The area of each building will be marked out using ranging rods or wooden posts and the soil and overburden stripped and removed to nearby storage area for later use in landscaping. Any excess material will be sent to an authorised recovery facility.
- All plant operators and general operatives will be inducted and informed as to the location of any services.
- A tracked 360-degree excavator or similar will be used to excavate the area down to the level indicated by the designer and appropriately shuttered reinforced concrete will be laid over it;
- The block work walls will be built up from the foundation (including a DPC) and the floor slab constructed, having first located any ducts or trenches required by the follow on mechanical and electrical contractors;
- The block work will then be raised to wall plate level and the gables & internal partition walls formed. Scaffold will be erected around the outside of the buildings for this operation;
- Any concrete slabs will be lifted into position using an adequately sized mobile crane;
- The timber roof trusses will then be lifted into position using a telescopic load all or mobile crane depending on site conditions. The roof trusses will then be felted, battened, tiled and sealed against the weather.
- Windows, electrics, plumbing and all other building components and services will be installed in as timely a manner as is possible.
- Each building will be inspected and certified by an engineer at the appropriate stages of construction.

3.5.6 Construction Site Management Incorporated into Project Design

The following measures pertaining to water quality and invasive species have been incorporated into the design phase of the project to avoid effects on sensitive ecological receptors.

3.5.6.1 Prevention Pollution Control Measures

The Construction Industry Research and Information Association (CIRIA) provide guidance on the control and management of water pollution from construction sites ('Control of Water Pollution from Construction Sites, guidance for consultants and contractors', CIRlA, 2001), which provides guidance. This will ensure that surface water arising during the course of construction activities will not contain excess sediment. The following methods and best practice measures will ensure that potential sediment release and the potential for pollution during the construction phase is minimised and reduced to insignificant.

3.5.6.1.1 *Drainage*

It is proposed to separate the surface water and wastewater drainage networks, which will serve the proposed development, and provide independent connections to the adjacent watercourse and local wastewater sewer network respectively.

The site will be split into 2 no. surface water catchments that will contribute to the surface water drainage network. Catchment A deals with the southern section of the site, and Catchment B deals with the northern section. Full detail and a map are provided in the Engineering Services Report, attached as Appendix 3-3 of this EIAR. All remaining areas (approx. 2.65ha) are considered green space and allowed to drain naturally, and therefore do not contribute to the surface water drainage networks. Catchment A is to discharge attenuated flows of 5 l/s/ha to the existing public 900mm diameter surface water network at Coosan Road, to the south. Catchment B is to discharge attenuated flows of 5 l/s/ha to the existing watercourse at the north-western corner of the site.

The proposed development is to contain the following measures of Sustainable Drainage Systems:

Limiting discharge. The design outflow from the overall development (c.11.8ha development catchment) is divided into two separate catchments, with independent surface water networks and outfalls. The

discharge rate from both catchments are to be restricted to a maximum discharge rate of 5 l/s/ha, which is less than the equivalent greenfield runoff. Refer to Section 3.3.3 and Section 3.4.5 for further details. The development discharge rates are to be restricted by using a flow control device, in a chamber upstream of the outfall, such as Hydro-Brake Optimum, or similar approved.

Attenuation Storage will be provided at strategic locations, in order to temporarily store excessive surface water, due to the restricted flow rates during rainfall events up to, and including, the design 1% AEP with a 20% additional allowance for climate change. This is to be to allow for the limiting discharge rates at the development outfalls, as outlined in Section 3.4.8, from both Catchment A and Catchment B.

Permeable Paving is to be provided for all in-curtilage car parking (i.e. driveways), which will have a layer of drainage stone underneath. This will provide at-source treatment, interception, and attenuate rainfall runoff from each property, prior to entering the main surface water drainage network.

Water Quality of the surface water, discharging from site, is to be improved with the following provisions:

- Permeable Paving in all private driveways, as described above;
- Intensive landscaping, where practical;
- Trapped road gullies on all road carriageways, to trap silt and gross pollutants;
- Silt traps to be provided on manholes immediately upstream of attenuation systems, as a further preventative measure to trap silt and other gross pollutants;
- Vegetated feature wetland for main attenuation provision;
- Bypass fuel separator to be provided prior to discharging from site.

3.5.7 Drain Culverting

Some sections of existing drainage ditches will need to be culverted, and the following methodology will be used to do so:

- The drain will be culverted at the outset of the construction works, prior to the stripping of the topsoil on the site.
- It will be culverted during low flow and this will be undertaken in sections.
- The upstream end of the culvert will be dammed and any water will be over-pumped to the downstream end with all culverting operations undertaken in dry conditions.
- The pumped water will be discharged via a silt bag at the downstream end of the culvert.

3.5.8 Landscaping works

Prior to completion of works on the development site, the landscaping works will be carried out. The proposed landscaping plan is shown as Appendix 3-4. The finishes include areas of amenity grassland, footpaths and tree planting. This work will be carried out before the completion of each phase in order to ensure that the development will be aesthetically pleasing place for residents to live. These works will involve the use of plant and machinery in order to carry out tasks such as earth moving. Materials which have been stockpiled for the task will be used as much as possible, and material will only be imported where it is required. Solid barriers will be erected around the site boundary for the duration of the construction works.

3.5.9 Invasive Species

The introduction and/or spread of invasive species such as Japanese Knotweed and Himalayan Knotweed for example, could result in the establishment of the species and this may have knock on effects on the surrounding environs.

Appropriate control measures will be incorporated into the design and construction phase of the development to ensure that the relevant measures (outlined in the following section below) will be implemented.

3.5.9.1 Control Measures for the Management of Invasive Species

Invasive species, such as Japanese Knotweed, Himalayan Knotweed, Himalayan Balsam, Gunnera, and Giant Hogweed pose a serious threat to biodiversity and the health of native vegetation types. Construction machinery can act as a vector for the spread of these plants. Machinery that has worked at an infected site is likely to cause the spread of such species by transferring their tiny seeds or plant fragments, in soil trapped in their tyre tread for instance. Equally, they can cause the spread of species within a site. The duration of the impact could be short-term or permanent depending on whether or not an eradication effort is made but once established, eradication is time-consuming and expensive. Himalayan Knotweed, for example, propagates vegetatively, forming a new plant from even very small plant fragments. Thus, there is a high risk of causing the spread of this species to other parts of the site. The UK Environment Agency's 'Japanese Knotweed Code of Practice' provides guidance on managing Japanese Knotweed and Himalayan Knotweed on development sites. A number of control measures have been drawn up and included in the design and construction phase of the proposed works to avoid the introduction and spread of invasive plant species. The following project design elements have been devised to avoid such effects. The following measures address potential effects associated with the construction phase of the development:

- All earthworks machinery will be thoroughly pressure-washed prior to arrival on site and prior to their further use elsewhere.
- Care will be taken not to disturb or cause the movement of invasive species fragments, either intentionally or accidentally.
- There are not believed to be any existing stands of invasive species on site, but should any be found, they will be clearly demarcated by temporary fencing and tracking within them will be strictly avoided. A minimum buffer of seven metres will be applied to avoid disturbance of lateral rhizomes.
- If any excavations must be carried out in areas of Japanese Knotweed, the excavated material will not be moved from the location. The machinery must be thoroughly pressure-washed in a designated area at least 25 metres from any watercourse before moving on to an area that is not yet infected.
- All contractors and staff will be briefed about the presence, identification and significance of Japanese Knotweed before commencement of works.
- Good construction site hygiene will be employed to prevent the spread of these species with vehicles thoroughly washed prior to leaving any site with the potential to have supported invasive species. All plant and equipment employed on the construction site (e.g. excavator, footwear, etc.) will be thoroughly cleaned down using a power washer unit prior to arrival on site to prevent the spread of invasive plant species such as Japanese Knotweed and Rhododendron. All washing must be undertaken in areas with no potential to result in the spread of invasive species.
- When working at locations in proximity to natural watercourses, a suitable barrier will be erected between the watercourse and the stand of invasive species. This will assist in preventing the spread of any invasive species into the watercourse during their removal. Cognizance will be had of any watercourses in the area.
- Any material that is imported onto any site will be verified by a suitably qualified ecologist to be free from any invasive species listed on the 'Third Schedule' of Regulations 49 & 50 of Regulations 49 and 50 of the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. 477 of 2011). This will be carried out by searching for rhizomes and plant material.
- Any soils or subsoils contaminated with invasive species will sent for disposal to an authorized waste facility.

The treatment and control of invasive alien species will follow guidelines issued by the National Roads Authority – The Management of Noxious Weeds and Non-native Invasive Plant Species on National Roads (NRA 2010) and the Environment Agency (2013) – The Knotweed Code of Practice: Managing Japanese Knotweed on Development Sites (Version 3, amended in 2013).

3.6 Other Site Details

3.6.1 Waste Management

The treatment of waste is to be employed by the contractor or a specialist waste management contractor as a trade package. This contractor is responsible for:

- Ensuring the site is kept clean and safe
- The collection of waste from a central point
- Segregation of waste on site

The waste management contractor should ensure that all access routes, fire escapes and staircases are swept and kept clear of debris on a regular basis to maintain high standards of health and safety on the project. No fires will be permitted on site.

The Contractor will prepare a Construction Waste Management Plan in accordance with the "Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects" (Department of Environment, Heritage and Local Government, 2006) and ensure that all material is disposed of at an appropriately licensed land fill site. The Contractor will also outline detailed proposals within the Construction Management Plan to accommodate construction traffic.

In order to ensure appropriate segregation of waste on site, a material storage zone will be provided in the compound area. This storage zone will include material recycling areas and facilities. A series of 'way finding' signage will be provided to route staff and deliveries into the site and to designated compound or construction areas, as appropriate.

3.6.2 Dust

Dust prevention measures will be included for control of any site airborne particulate pollution. The Contractor will put in place and monitor dust levels in the vicinity using a Bergerhoff gauge instrument. The minimum criteria to be maintained will be the limit for Environmental Protection Agency (EPA) specification for licensed facilities in Ireland, which is 350mg/m2/day. The Contractor will continuously monitor dust over the variation of weather and material disposal to ensure the limits are not breached throughout the project. Dust suppression systems should be implemented if required based on the continuously monitored dust levels.

Dust control should be achieved by:

- Dampening down the dust at the source
- Sheeting will be used as required for stockpiled materials
- Use of barriers such as debris netting on scaffolding around the building to block dust escaping where the building is within 10m of the site boundary where residential properties exist.
- Site roadways will be maintained in a stoned hard core condition not allowing soil to accumulate which when dry can create dust.
- Wheel wash equipment will be set up at the site exit gate for all construction vehicles to pass through prior to leaving the site thus ensuring that no dirt etc. is transported outside the site onto the roadways.
- Plant and equipment that have the potential to create volumes of dust will have appropriate attachments to allow water source to dampen dust to not allow it to get airborne.
- Plant and equipment that have the potential to create volumes of dust will be located away from sensitive receptors where possible.
- Deploy Road Sweeper as required on External Roads.
- Deployment of dust monitors across the site if required

3.6.3 Noise

The Contractor will be required to monitor base noise levels at the site location before commencement of the project. Noise monitoring will be required throughout all phases of the project. Variation of noise levels from those experienced as part of everyday life in an area can result in extreme disruption. The Contractor will implement measures to eliminate where possible and reduce noise levels where not. Noise levels will be kept below those levels specified in the National Roads Authority – "Guidelines for the Treatment of Noise and Vibration in National Roads Schemes" or such further limits as imposed by Westmeath County Council. The proposed development will comply with BS 5228 "Noise Control on Construction and open sites Part 1: Code of practice for basic information and procedures for noise control."

Construction equipment for use outdoors will comply with the European Communities Regulations– Noise Emission by Equipment for Use Outdoors – SI 241 - 2006.

Modelling indicates that noise criteria will be exceeded at one receptor: a detached dwelling outside the southwest corner of the site, close to Coosan Road. Specific mitigation is warranted here. A temporary screen approximately 50 in length will be provided along the western boundary of the site at this location for this portion of the construction phase. See Section 9.5 of this EIAR for further details.

No other specific mitigation measures are warranted. Several general measures are proposed as follows:

- Construction operations will in general be confined to the period Monday-Friday 0800-1900 h, and Saturday 08:00-14:00 h.
- Plant used onsite during the construction phase will be maintained in a satisfactory condition and in accordance with manufacturer recommendations. In particular, exhaust silencers will be fitted and operating correctly at all times. Defective silencers will be immediately replaced.
- Where it is proposed to operate plant during the period 0700-0800 h, standard 'beeper' reversing alarms will be replaced with flat spectrum alarms.
- Erection of solid barriers (hoarding) to site boundary

3.6.4 Road Cleaning and Wheel Washing

The Contractor will make provision for the cleaning by road sweeper etc. of all access routes to and from the site during the course of the works as required. It is intended that cleaning will be undertaken on a daily basis during the excavation works and as required thereafter. A wheel wash facility will be provided on site to clean site traffic leaving the site. Wastewater generated at this washing facility will be suitably treated on site and all settled silts disposed offsite to licensed landfill. All road sweeping vehicles will be emptied off site at a suitably licensed facility as per our construction stage environmental waste management document.

3.6.5 Water Supply

Water will be supplied on site by water tankers for general use. Potable water will be provided in the form of bottled water for staff use.

3.6.6 Wastewater Management

Portable toilets will be provided for the working on the construction site. Wastewater arising on-site from these toilets is stored in a sealed tank located within the portable toilets, and these will be emptied periodically (as required) by permitted waste contractors and transported to municipal wastewater treatment plants for treatment.

Any sewage or greywater generated during the operational phase of the proposed development will be directed to the local municipal wastewater treatment plants for treatment via the sewage collection network.

3.6.7 Surface water runoff

All surface water runoff will be generated on site will be controlled using silt fences. Silt fencing will be placed along existing drainage ditches during the construction phase of the proposal to avoid any potential for impact on downstream waterbodies. Water will be allowed to percolate naturally to ground. Where pumping is required, siltbuster bags will be used to prevent the generation of suspended solids. In addition, water will pumped at rates capable of allowing natural percolation (greenfield rates).

3.6.8 Aggregates

The aggregates required for the construction of the proposed development will be sourced, as much as is possible and practicable, from quarries and suppliers located as near as possible to the proposed development. This will reduce the potential for any negative impacts associated with the haulage of the materials to the site of the proposed development. Existing soils and subsoils located on the site will be used where possible to reduce the amount of such materials required for import onto the site.

3.6.9 Construction Traffic/Plant

The following mitigation measures will be implemented in relation to construction traffic and plant/machinery:

- All vehicles to switch off engines when not in use – no idling vehicles
- Effective vehicle cleaning and wheel washing on leaving site and damping down of haul routes
- No site runoff of water or mud.
- On-road vehicles to comply to set emission standards.
- All non-road mobile machinery (NRMM) to be fitted with appropriate exhaust system and be regularly serviced.
- Hard surfacing and effective cleaning of haul routes and appropriate speed limit around site

3.7 Operational Phase

The proposed development will require periodic maintenance throughout the operational phase. The operation of a residential development is not a recognized source of environmental emissions or nuisance and so there will be no adverse effects associated with its operation.

It is proposed to separate the surface water and wastewater drainage networks, which will serve the proposed development, and provide independent connections to the adjacent watercourse and local wastewater sewer network respectively. The zoned public open space splits the development into 2 no. independent catchment areas – Catchment A and Catchment B (Figure 3-3). The remaining areas are considered green space and allowed to drain naturally, with negligible impact on the performance of the surface water network, and therefore do not contribute to the surface water drainage networks.

Figure 3-2 Surface water network catchment overview

Catchment A is located in the southern part of the site; bound by the central open space to the north, Coosan Road to the south, Athlone Rugby Club to the east, and existing residential to the west. Catchment A is to discharge attenuated flows of 5 l/s/ha to the existing public 900mm diameter surface water network at Coosan Road, to the south. Underground attenuation is to be provided within the primary public open space area, within the southern part of the development, with a flow control device at the outfall chamber, followed by a Class 1 bypass fuel separator.

Catchment B is located in the northern part of the site; bound by the central open space to the south, agricultural lands to the north, Athlone Rugby Club to the east, and existing residential to the west. Catchment B is to discharge attenuated flows of 5 l/s/ha to the existing watercourse at the north-western corner of the site. Interim attenuation is to be provided at the public open space near the centre of the northern part of the site, with the main attenuation being provided, in the form of a feature vegetated wetland, near the northwest corner of the site. From here, Catchment B's surface water runoff will discharge to the aforementioned watercourse, via a flow control device and Class 1 bypass fuel separator.

3.8 Decommissioning Phase

It is not intended that the proposed buildings will be removed, as permanent planning permission is being sought for this development. The proposed development will form an integral part of the local housing needs. Therefore, it is intended that the proposed development will be retained as permanent, and will not be decommissioned.