19 SUMMARY OF MITIGATION MEASURES

19.1 Introduction

This Chapter of the EIAR collates and summarises the mitigation measures recommended for each of the environmental topics examined in Chapters 5 – 18 of this EIAR.

These mitigation measures and any associated monitoring comprise what would be implemented during the Construction and Operational Phase to reduce identified potential for significant adverse environmental effects of the proposed development.

This chapter does not expand on the reasoning or expected effectiveness of the proposed mitigation or monitoring measures. For such descriptions, we refer to each of the individual chapters of the EIAR.

The implementation of the recommended mitigation measures would be expected to be required as a condition of any grant of permission by Fingal County Council.

19.2 Population and Human Health (Chapter 5)

This section refers to both plots of the Proposed Development.

Construction Stage

No specific mitigation measures are required during the Construction Phase in relation to population and human health, given the lack of direct, adverse effects resulting from the Proposed Development. However, mitigation measures in relation to air emissions, noise, traffic, and waste are identified in their respective chapters in this EIAR.

Operational Stage

No specific mitigation measures are required during the Operational Phase of the Proposed Development in relation to population and human health, given the lack of direct, adverse effects resulting from the Proposed Development. However, mitigation measures in relation to air emissions, noise, traffic, and waste are identified in their respective chapters in this EIAR.

"Worst Case" Scenario

In the event that mitigation measures fail to minimise and / or prevent potential adverse effects, the following possibilities may occur:

- An increase in traffic within the surrounding roads and junctions of the Site.
- An increase in noise caused during the Construction Phase can cause a disturbance to any residential dwellings in close proximity to the Site.
- An increase in the production of dust during the construction phase that can be carried throughout the Site and create adverse effects on the neighbouring environment.

However, it is imperative that such mitigation measures are implemented to ensure that the worst-case scenario does not occur. When considering the mitigation measures that will be in place, the event of a worst-case scenario is deemed to be unlikely.

19.3 Biodiversity (Chapter 6)

Given that the recommended mitigation measures are appropriate for both Plot 1 (Sub 100 Scheme) and Plot 2 (LRD Scheme) of the Site of the Proposed Development, the following measures will apply to both plots unless otherwise state. Where a mitigation measure pertains exclusively to one plot, this will be explicitly identified.

Please note: A Site-specific approach that takes into consideration the biodiversity assemblage recorded at the Site will be incorporated into the recommended mitigation on completion of the full suite of ecological surveys. Therefore, the mitigation and biodiversity enhancement outlined below may be superseded upon completion of the full suite of ecological surveys at the Site.

Given that the recommended mitigation measures are appropriate for both Plot 1 (Luttrellstown Gate Phase 2) and Plot 2 (St. Mochta's LRD) of the Site of the Proposed Development, the following measures will apply to both plots unless otherwise state. Where a mitigation measure pertains exclusively to one plot, this will be explicitly identified.

Please note: A Site-specific approach that takes into consideration the biodiversity assemblage recorded at the Site will be incorporated into the recommended mitigation on completion of the full suite of ecological surveys. Therefore, the mitigation and biodiversity enhancement outlined below may be superseded upon completion of the full suite of ecological surveys at the Site.

Construction Stage

Protection of Habitats and Designated Sites

Mitigation 1: Tree Protection

Protective tree fencing in compliance with BS 5837:2012 'Trees in relation to design, demolition and construction – Recommendations' will be erected prior to any Construction works being undertaken to prevent damage to the canopy and root protection areas of existing trees at the Site. The fencing will be signed off by a qualified arborist prior to Construction to ensure it has been properly erected. No ground clearance, earthworks, stockpiling or machinery movement will be undertaken within these areas.

Mitigation 2: Standard Surface water and ground water protection measures

Control of Fuel and Chemical Storage

The storage and use of fuel and oils will be kept to a minimum at the Site.

If small quantities of oils and chemicals oils are required at the Site, the use of these will be strictly controlled in accordance with procedures outlined in the CEMP and storage will be avoided where possible. All tank, container and drum storage areas shall be rendered impervious to the materials stored therein. Bunds and storage areas shall be designed having regard to Environmental Protection Agency guidelines 'Storage and Transfer of Materials for Scheduled Activities' (EPA, 2004) and Enterprise Ireland Best Practice Guidelines (BPGCS005). All tank and drum storage areas shall, as a minimum, be bunded to a volume not less than the greater of the following:

- 110% of the capacity of the largest tank or drum within the bunded area; or
- 25% of the total volume of substance that could be stored within the bunded area.

Any fuels retained on drip trays, mobile bunds, etc., will be emptied into a secure bunded waste oil drum to await appropriate disposal offsite.

Refueling of plant during the Construction Phase will be carried out in accordance with standard best practice. Refueling will only be carried out at the designated, impermeable refueling station location onsite with appropriate containment in place. This station will be fully equipped for spill

response and a specially trained and dedicated Environmental and Emergency Spill Response Team will be appointed before the commencement of works at the Proposed Development Site.

Where possible any oil and lubricant changes and maintenance will take place offsite. Only emergency breakdown maintenance will be carried out on Site. Drip trays and spill kits will be available on Site to ensure that any spills from vehicles are contained and removed offsite.

All personnel working onsite will be trained in pollution incident control response. Emergency silt control & spillage response procedures contained within the CEMP will ensure that appropriate information will be available on site outlining the spillage response procedures and a contingency plan to contain silt during an incident.

Provided that these requirements are adhered to, and site crew are trained in the appropriate refueling techniques, it is not expected that there will be any fuel/oil wastage at the Site.

Control of Emissions to Surface water and Drainage

Works carried out as part of the Proposed Development will comply with all Statutory Legislation including the Local Government (Water Pollution) acts, 1977 and 1990.

Silt traps, and silt fences will be provided by the contractor where necessary to prevent silts and soils being washed away by heavy rains during the course of the Construction Phase. Surface water runoff and water pumped from the excavation works will be discharged via a silt trap / settlement pond to the existing foul drainage network.

In addition, the following general measures will be undertaken:

- Where required, designated impermeable cement washout areas will be provided.
- Run-off from the working site or any areas of exposed soil will be channeled and intercepted at regular intervals for discharge to silt-traps or lagoons with over-flows directed to land rather than to a drain.
- Silty water generated on Site will be treated using silt traps/settlement ponds and temporary interceptors and traps will be installed until such time as permanent facilities are constructed.
- Storm drain inlets which could receive stormwater from the project will be protected throughout the Construction Phase.
- A regular review of weather forecasts of heavy rainfall will be conducted, and a contingency plan will be prepared for before and after such events to minimise any potential nuisances. As the risk of the break-out of silt laden run-off is higher during these weather conditions, no work will be carried out during such periods where possible.
- Any imported materials will, as much as possible, be placed on Site in their proposed location and double handling will be avoided. Where this is not possible designated temporary material storage areas will be used.
- These temporary storage areas will be surrounded with silt fencing to filter out any suspended solids from surface water arising from these materials.
- Temporary hydrocarbon interceptor facilities will be installed and maintained where Site works involve the discharge of drainage waters to nearby drains.
- All containment and treatment facilities will be regularly inspected and maintained.
- All personnel working on site will be trained in pollution incident control response.
- If portaloos and/ or containerised toilets and welfare units will be used to provide facilities for site personnel, all associated waste will be removed from site by a licensed waste disposal contractor.

Under no circumstances will any untreated wastewater generated onsite (from equipment washing, road sweeping etc.) be released into nearby drains.

Control of Emissions to Soil and Groundwater

Measures set out in the previous section also serve to protect soil and groundwater. In addition, the following measures will also be undertaken:

- No direct untreated point discharge of construction runoff to groundwater will be permitted.
- Where a pollution incident is detected, construction works will be stopped until the source of the construction pollution has been identified and remedied.
- Groundwater may be encountered during the construction works. Where water must be pumped from the excavations, water will be managed in accordance with best practice standards (i.e., CIRIA – C750) and regulatory consents.
- Any excavated and potentially contaminated stockpiled soils will be constructed/ located/ sheeted in a manner that ensures water is contained within the Site boundary.

Mitigation 3: Reduction of dust related impacts

The following general dust control measures will be followed for the duration of the Construction Phase of the Proposed Development and will ensure no significant dust related impacts occur to nearby sensitive receptors such as the Royal Canal located north of the Site of the Proposed Development.

- Haulage vehicles transporting gravel and other similar materials to Site will be covered by a tarpaulin or similar.
- Access and exit of vehicles will be restricted to certain access/exit points.
- Vehicle speed restrictions of 20km/hr will be in place.
- Bowsers will be available during periods of dry weather throughout the Construction period.
- During dry and windy periods, and when there is a likelihood of dust nuisance, a bowser will operate to ensure moisture content is high enough to increase the stability of the soil thereby reducing the amount of dust.
- Stockpiling of imported materials will be avoided where possible with imported materials ideally placed on Site in their proposed location upon receipt with double handling avoided.
- Stockpiles will be stored in sheltered areas of the Site, covered, and watered regularly or as needed if exposed during dry weather.
- Gravel should be used at Site exit points to remove caked-on dirt from tyre tracks.
- Hard surfaced roads will be wet swept to remove any deposited materials.
- Unsurfaced roads will be restricted to essential traffic only.
- If required to control dust nuisance wheel-washing facilities will be located at the exit from the construction area.
- Dust production as a result of Site activity will be minimised by regular cleaning of the access roads using vacuum road sweepers and washers. Access roads should be cleaned at least 0.5km on either side of the approach roads to the access points.
- Public roads outside the Site shall be regularly inspected for cleanliness, as a minimum daily, and cleaned as necessary. A road sweeper will be made available to ensure that public roads are kept free of debris.
- The frequency of cleaning will be determined by the Site agent and is weather and activity dependent.
- The height of stockpiles will be kept to a minimum and slopes should be gentle to avoid windblown soil dust.
- The following will be dampened during dry weather:
  - Unpaved areas subject to traffic and wind.
  - Stockpiles.
  - Areas where there will be loading and unloading of dust-generating materials.
- Under no circumstances will wastewater from equipment, wheel or surface cleaning enter the drainage ditches along the boundaries of the Site.

Mitigation 4: Invasive Species Removal (specific to Plot 2 (St. Mochta's LRD)

It is recommended that non-native/invasive flora species recorded at the Site are controlled/removed as per the appropriate best-practice guidelines. Removal and disposal should be carried out in accordance with appropriate guidelines such as TII (formerly NRA) *The Management of Invasive Alien Plant Species on National Roads* (2020), with consideration given to the prevention of spread of these plants.

Recommended Management: Physical removal and off-site disposal of butterfly-bush is recommended where it occurs within the survey area.

Protection of Fauna

Mitigation 5: Reduction of Noise Related Impacts

Noise generated during the Construction Phase of the Proposed Development could cause temporary disturbance to a number of faunal species in the vicinity of the Site. To mitigate this disturbance, the following measures will be implemented:

- Selection of plant with low inherent potential for generating noise.
- Siting of plant as far away from sensitive receptors as permitted by site constraints.
- Avoidance of unnecessary revving of engines and switch off plant items when not required.
- Keep plant machinery and vehicles adequately maintained and serviced.
- Proper balancing of plant items with rotating parts.
- Keep internal routes well maintained and avoid steep gradients.
- Minimise drop heights for materials or ensure a resilient material underlies.
- Use of alternative reversing alarm systems on plant machinery.
- Where noise originates from resonating body panels and cover plates, additional stiffening ribs or materials should be safely applied where appropriate.
- Limiting the hours during which Site activities likely to create high levels of noise are permitted.
- Appointing a site representative responsible for matters relating to noise.
- Monitoring typical levels of noise during critical periods and at sensitive locations.

These measures will ensure that any noise disturbance to nesting birds or any other fauna species in the vicinity of the Site will be reduced to a minimum.

Mitigation 6: Construction Phase Lighting

The full suite of bat surveys for both plots of the Site are not yet complete, therefore a precautionary approach will be taken. The following mitigation measures are more general and not specific to the bat activity present at the Site and may change following completion of the bat transect surveys.

As a precautionary measure, no overnight lighting will be directed to the natural habitats bounding the Site. Where overnight lighting cannot be avoided in these areas due to health and safety concerns, the lighting within the Proposed Development will be designed and installed to minimise the impact on local wildlife as agreed with the Ecologist and in accordance with the Bat Conservation Trust guidelines on artificial lighting and bats (Collins, 2023)

- There will be no light spill to the boundary habitats.
- All luminaires used will lack UV/IR elements to reduce impact.
- LED luminaires will be used due to the fact that they are highly directional, lower intensity, good colour rendition and dimming capability.
- A warm white spectrum (3000 Kelvins will be used to reduce the blue light component of the LED spectrum).
- Luminaires will feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats.
- Column heights should be carefully considered to minimise light spill. The shortest column height allowed should be used where possible.
- Only luminaires with an upward light ratio of 0% and with good optical control will be used.
- Luminaires will be mounted on the horizontal, i.e., with no upward tilt.
- Any external security lighting will be set on motion-sensors and short (1min) timers.
- As a last resort, accessories such as baffles, hoods or louvres will be used to reduce light spill and direct it only to where it is needed.

Mitigation 7: Vegetation Clerance

Vegetation clearance of the hedgerows interlaced with trees, and grassland habitats for Plot 1 (Luttrellstown Gate Phase 2), and hedgerow, treeline, grassland and woodland habitats for Plot 2 (St. Mochta's LRD) will need to be cognisant of any potentially present fauna. Table provides guidance for when vegetation clearance is permissible in relation to wintering, hibernating and breeding fauna. Information sources include British Hedgehog Preservation Society's *Hedgehogs and Development* and *The Wildlife (Amendment) Act, 2000*. The preferred period for vegetation clearance is within the months of September and October to avoid the main breeding bird season and bat maternity and roosting season as well as mammal hibernation.

Where this seasonal restriction cannot be observed, a check for active nests, will be carried out immediately prior to any Site clearance by an Ecological Clerk of Works (ECoW) and repeated as required to ensure compliance with legislative requirements. Where a breeding bird and an active nest is found, the nest will be protected, and no further works will take place in the vicinity of the nest until the young have fledged.

Table 19.1: Seasonal restriction on vegetation removal. Red boxes indicate periods when clearance/works are not advised

Ecological Features	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Breeding birds	Vegetation clearance permissible		Nesting bird season No clearance of vegetation or works to relevant structures permitted unless confirmed to be devoid of nesting birds by an ecologist						Vegetation clearance permissible			
Hibernating mammals (namely hedgehog)	Mammal hibernation season No clearance of vegetation or works to relevant structures permitted unless confirmed to be devoid of hibernating mammals by an ecologist			Vegetatio clearance permissible							season No clearance of vegetation or works to relevant structures permitted unless confirmed to be devoid of hibernating mammals by an ecologist	
Common lizard	Lizard hibernation season No habitat clearance permissible			Active period Habitat (scrub, tall sward grass) clearance permissible							Lizard hibernation season No habitat clearance permissible	

Additionally, all vegetation clearance will be carried out in sections working in a consistent direction to prevent entrapment of protected fauna potentially present (e.g., hedgehog, pygmy shrew). Logs and branches from this vegetation will be utilised for the creation of hibernacula on Site, see section 0 below. A phased cutting approach under the supervision of a suitably qualified ECoW will be used to allow wildlife (small mammals, reptiles and amphibians) to move away from any suitable habitat that will be removed:

- Phase 1 – Cutting vegetation to 150-200 mm and removing the arisings;
- Phase 2 – After a minimum of one hour, hand-searching the cut areas (conducted by an ECoW) and removing any sheltering habitat (e.g. logs or debris) then cutting vegetation to ground level and removing the arisings; and
- Phase 3 – Soil scrape.

Should any suitable refugia or day nesting habitats need to be removed, this will be carried out outside the most vulnerable breeding periods for hedgehogs wherever practicable (main hedgehog birthing months June and July) and will be supervised by the ECoW.

Mitigation 8: Waste Management
As best-practice, all construction-related rubbish on-site e.g., plastic sheeting, netting etc. should be kept in a designated area on-site and kept off ground level so as to protect small fauna (such as small mammals, amphibians and reptiles) from entrapment and death**.**

Mitigation 9: Avoidance of accidental trapping of fauna
In order to avoid accidental harm/injury or mortality to mammals during construction all excavations shall have a wooden plank, sloping edge or other means of escape to avoid accidental trapping of mammals. All pipes shall be covered at night.

Operational Stage

Habitats and Flora

Mitigation 10: Invasive Species Management
Certain plant species and their hybrids are listed as Invasive Alien Plant Species in Part 1 of the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011 (SI 477 of 2011, as amended). In addition, soils and other material containing such invasive plant material, are classified in Part 3 of the Third Schedule as vector materials and are subject to the same strict legal controls.

As such, it is recommended that any newly landscaped areas, particularly where infill materials and soils have been imported for soft landscaping, are assessed during the Operational Phase within the next botanical season for the presence of any inadvertently introduced invasive species, with particular focus on those listed on Schedule III of SI 477 of 2011. If invasive species are detected, an Invasive Species Management Plan will be prepared, agreed with the Local Authority and implemented at the earliest possibility to limit the potential for further spread.

Mitigation 11: Bats
In accordance with the best practise bat-friendly lighting guidelines (ILP, 2023), the below measures will be incorporated as part of the Lighting Design of the Proposed Development:

- All luminaires should lack UV elements when manufactured. Metal halide, compact fluorescent sources should not be used.
- LED luminaires should be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability.
- A warm white light source (3000 Kelvin or lower) should be adopted to reduce blue light component.
- Light sources should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats.
- Internal luminaires can be recessed where installed in proximity to windows to reduce glare and light spill.
- Column heights should be carefully considered to minimise light spill and glare visibility. This should be balanced with the potential for increased numbers of columns and upward light reflectance as with bollards.

- Only luminaires with a negligible or zero Upward Light Ratio, and with good optical control, should be considered.
- Luminaires should always be mounted horizontally, with no light output above 90° and/or no upward tilt.
- Where appropriate, external security lighting should be set on motion sensors and set to as short a possible a timer as the risk assessment will allow. For most general residential purposes, a 1 or 2 minute timer is likely to be appropriate.
- Only if all other options have been explored, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed. However, due to the lensing and fine cut-off control of the beam inherent in modern LED luminaires, the effect of cowls and baffles is often far less than anticipated and so should not be relied upon solely.

Biodiversity Enhancement Measures

Biodiversity enhancement measures for both plots have been included in this section.

Biodiversity Enhancement by Design

The Landscape Plans for the respective plots of the Site of the Proposed Development incorporates native planting throughout the open green spaces of the Proposed Development. This will take the form of street tree planting, mixed woodland planting, hedgerows, scrub beds, and wildflower grass meadows. The planting schedule will be informed prior to the commencement of the construction phase and will be agreed with inputs by a qualified ecologist. A more general planting plan have been included in the Landscape Plans for the respective plots, which detail the specifications for plant material, the requirements of the Landscape contractor, and proposals for monitoring establishment of green spaces across both plots. The proposed Landscape Plan for both plots of the Site have been designed to enhance biodiversity by introducing a greater variety of habitats than those that are currently present on Site.

Enhancement 1: Hedgehog Highways

By creating a number of separate private dwellings and gardens at a Site, the land becomes fragmented and largely inaccessible to species such as hedgehog, which like to roam each night in search of food (garden pests e.g., slugs). This can easily be fixed by ensuring that the boundaries and barriers within and surrounding the Site i.e., garden fencing, railings and gates, are permeable for hedgehogs, as seen in Figure 19.2. This can be achieved by:

- The use of fence panels with 13 x 13 cm holes at ground level (Hedgehog holes);
- Leaving a sufficient gap beneath gates, and;
- Leaving brick spaces at the base of brick walls.

Figure 19.1 Examples of Hedgehog highways' that can maintain habitat connectivity for hedgehogs in residential developments

The inclusion of hedgehog highways is recommended as part of the landscape design of both plots of the Site, specifically along the public open spaces proposed along the boundaries of each of the two plots. A variety of fence suppliers' stock specific hedgehog-friendly fencing options, which can be easily incorporated at little or no additional cost. These simple measures will provide habitat connectivity at the Site for hedgehogs and reduce the impact of the land-use change on this species.

Including details of hedgehog-friendly features in the new homeowner's welcome pack will raise awareness and prevent homeowners from reversing these features, for instance blocking fence holes.

Enhancement 2: Pollinator Habitat

Pollinator/'insect habitat, as seen in Figure 19.3, will be created on both plots of the Site by:

- Creating an earth bank.
- Scraping back some bare earth.
- Leaving some areas to grow wild, and/or
- By drilling holes 10cm deep in unvarnished wood for solitary bees.

Figure 19.2: Example of solitary bee habitat. Extracted from How-To-Guide: Creating Wild Pollinator Nesting Habitat (NBDC, 2016)

Large bee or insect hotels will not be installed. Guidance from the All -Ireland Pollinator Plan states "*Don't install a large bee or insect hotel. Large bee hotels are attractive to humans, but not great for pollinators. They can encourage the spread of disease and attract predators. Avoid anything bigger than an average-sized bird box. There are many other ways to provide nesting habitats for pollinators, such as providing wild areas of undisturbed long grass, and scraping back some bare earth. If you want to make a bee hotel, make sure it is small, and position it away from bird feeders so the insects aren't easy targets*." A link to a "How-to-guide Creating wild pollinator nesting habitat" is provided for the development management company to put these habitats in place: Pollinator-Nesting-How-to-Guide-2022-WEB.pdf (pollinators.ie). An appointed ecologist will oversee the creation of these habitats.

Enchantment 3: Bat Boxes

Four summer bat boxes (e.g., Woodcrete 1FF design) will be erected on each of the two plots on the Site of the Proposed Development. The number of boxes may increase should the activity surveys find evidence of roosting on Site to mitigate any loss of roost habitat. The boxes will be installed as part of the landscaping works, so as to not delay their deployment and potential positive impacts.

Bat boxes will be sited carefully, and this will be undertaken by a bat specialist. The bat ecologist will denote the locations, orientation and height of the bat boxes to be erected with assistance from the contractor. Some general points that will be followed include:

- Bat boxes will be erected on trees (or telegraph poles) with no crowding branches or other obstructions for at least 1 metre above and below the bat box.
- The diameter of the tree should be wide and strong enough to hold the required number of boxes.
- Locate bat boxes in areas where bats are known to forage or adjacent to suitable foraging areas. Locations will be sheltered from prevailing winds.
- Bat boxes will be erected at a height of 4-5 metres to reduce the potential for vandalism and predation of roosting bats.
- The recommended Woodcrete 1FF design is open at the bottom, allowing the droppings to fall out, and so does not need cleaning.

Enhancement 4: Hibernacula

It is recommended to enhance the landscaped areas for small mammals, amphibians and reptiles by providing hibernacula in the form of log and brush piles within both plots of the Site of the Proposed Development. It is recommended that 2-3 areas of hibernacula are provided at areas furthest removed from likely human activity.

In the case of plot 1 (Luttrellstown Gate Phase 2), the northeast corner and southwest corner of the Site will be suitable areas for the installation of the hibernacula, whereas for plot 2 (St. Mochta's LRD), the public open spaces along the eastern boundary, but away from the pedestrian and cycle lane, will be suitable areas.

Hibernacula for hedgehogs, amphibians and reptiles is relatively easy to create from logs and soil, all of which can likely be sourced from the Site during works. Wood in various sizes should be piled either in a shallow depression or on the slope of the attenuation pond in a disorganised way to create nooks and crevices. Larger tree trunks or rocks should be placed so that they will protrude through the final mound to provide open entrances to the mound. This pile should then be covered in soil to allow the inner crevices to maintain a stable temperature through the winter and allow for hibernation.

Enhancement 5: Swift Boxes/Bricks

The installation of swift bricks/boxes is recommended for both plots of the Site of the Proposed Development. Swifts (*Apus apus)* are an endangered species of bird that migrate to Ireland from South Africa each summer and traditionally nest in crevices or the eaves of buildings. The swift bricks in particular are discrete hollow bricks designed to building regulation standards that can be matched to the design of the façade.

Swifts are a "clean" bird species which remove their own wastes from their nests periodically. As such, Swift bricks do not require any cleaning by the management company.

The incorporation of Swift Boxes or Bricks will help recover the declining swift population, which are now Red Listed in Ireland (Gilbert et al., 2021). The following recommendations are extracted from "Saving Swifts" by Birdwatch Ireland (BirdWatch Ireland, 2023).

Swift Bricks/boxes:

- should be constructed of long-lasting material and securely fixed in position.
- should be erected at least five metres above ground level.
- should be erected in sheltered cool areas out of the sun, or under an overhang and /or under the eaves. Bricks can be placed at any aspect, however, as they tend not to overheat the way that externally fitted boxes can.
- should have a clear airspace in front for access.
- should be grouped (side by side in rows) as swifts are colony nesters.

- should avoid sites which can be accessed by predators- cats, squirrels, magpies, rats.
- should avoid sites near plate glass windows because they are a known collision hazard for birds.
- should not be placed directly above ledges or other obstructions. Swifts drop before taking flight and can collide with obstacles below the nest entrance.
- should not be one above the other.
- should not be near spotlights or later fit spotlights near them

Enhancement 6: Long Term Management of Hedgerows

For the long term management of hedgerows during the Operational Phase at both plots (Plot 1 - Luttrellstown Gate Phase 2, and Plot 2 - St. Mochta's LRD) of the Proposed Development, relevant guidance has been sourced from Hedgerows Ireland (HE, 2025), and (LAHO, 2016), to inform best practice and optimal enhancement of hedgerows at Plot 1 and plot 2 of the Site.

As per the guidance provided in Hedgerows Ireland (HE,2025), it is recommended that cutting/flailing of hedgerows is not undertaken annually. This is because annual cutting has been associated with reducing local biodiversity benefits that the hedgerows may offer to flowering species within the hedgerow itself, as well as the pollinators that rely on these floral species. Furthermore, the annual cutting of hedgerows can also diminish food resources in the form of berries or fruits for birds thereby depleting resources that the bird species may rely on. Cutting can also directly impact the nesting behaviour of birds in the locality, therefore, all cutting mush take place outside of the breeding bird season (March to August).

Additionally, as per (LAHO, 2016), it is recommended that proper maintenance of hedgerows should be established to encourage flowering, fruiting and growth to boost wildlife potential in hedgerows. This is to be accomplished by ensuring that mature hedgerows are in good condition and must be allowed to grow naturally, and maintenance is confided to essential practices such as stockproofing, inplanting, and the control of invasive species. Weak hedgerows, which have lost their vigour, will require more intervention such as laying or coppicing. Any established hedgerows will need cutting every two to three years, and the maintenance is to be done on a rotational basis around the Site to ensure that there is growth at all stages.

19.4 Land, Soils, Geology & Hydrogeology (Chapter 7)

The mitigation measures as outlined below, will ensure that there will be no significant impact on the receiving land, soil and geology.

19.4.1 Proposed Development - Plot 1 (Luttrellstown Gate Phase 2)

Construction Stage

During the construction stage, all works will be undertaken in accordance with the Construction Environmental Management Plan (CEMP) (Enviroguide Consulting, 2025a) and Resource and Waste Management Plan (RWMP) (Enviroguide Consulting, 2025b) submitted with the planning application under separate cover. Following appointment, the contractor will be required to further develop the CEMP and RWMP to provide detailed construction phasing and methods to manage and prevent any potential emissions to ground with regard to the relevant industry standards (e.g., Guidance for Consultants and Contractors, CIRIA-C532', CIRIA, 2001). The CEMP and RWMP will be implemented for the duration of the construction stage, covering construction and waste management activities that will take place during the construction stage of the Proposed Development. Mitigation works will be adopted as part of the construction works for the Proposed Development.

Import of Aggregates and Materials

Contract and procurement procedures will ensure that all imported aggregates and materials required for the construction of the Proposed Development will be sourced from reputable suppliers operating in a sustainable manner and in accordance with industry conformity/compliance standards and statutory obligations. The importation of aggregates and materials will be subject to management and control procedures which will include testing for contaminants, invasive species and other anthropogenic inclusions and assessment of the suitability for use in accordance with engineering and environmental specifications for the Proposed Development. Therefore, any unsuitable material will be identified prior to unloading / placement onsite.

Airborne Dust Generation

Excavated soils will be carefully managed and maintained in order to minimise potential impact on soil quality and soil structure. Handling of soils will be undertaken in accordance with documented procures outlined in the CEMP (Enviroguide Consulting, 2025a) that will be set out in order to protect ground and minimise airborne dust. The normal measures required to prevent airborne dust emissions and associated nuisance arising from site work will be in place including measures to prevent uncovered soil drying out leading to wind pick up of dust and mud being spread onto the local road network and adjoining properties. This may require additional wetting at the point of dust release, dampening down during dry weather and wheel cleaning for any vehicles leaving the site. Potential impacts and avoidance and mitigation measures associated with generation of dust are addressed in Chapter 9 of this EIAR.

Reuse of Soil

Soil and subsoil materials to be reused within the Proposed Development (i.e., for engineering fill and landscaping) will be subject assessment of the suitability for use in accordance with engineering and environmental specification for the Proposed Development. This will include:

- Define the criteria by which the suitability of the soils for reuse will be assessed (e.g., analytical parameters and limits), the engineering requirements such as geotechnical parameters for the material to be used within the works.
- Delineation of areas where excavated soil is intended for disposal off-site as waste, and where it is intended for reuse on site.
- Identification and recording of the location from where the soil will be excavated and its proposed reuse location and function.
- Engineering assessment to confirm its suitability for reuse.
- Any proposed treatment or processing required to enable its reuse, as well as any associated treatment permits, or licences required.

Management and Control of Soils and Stockpiles

Segregation and storage of soils for re-use onsite or removal offsite and waste for disposal offsite will be segregated and temporary stored onsite pending removal or reuse onsite in accordance with the measures outlined in the CEMP (Enviroguide Consulting, 2025a).

Specific routes for construction vehicles will be identified in advance of construction works commencing to minimise soil compaction and disturbance.

Where possible, stockpiling of soils and subsoils onsite will be avoided. However, in the event that stockpiling is required, stockpiled materials, pending reuse onsite, will be located away from the location of any sensitive receptors (watercourses and drains).

As mentioned above, the re-use of suitable cut material onsite for the Proposed Development (i.e., landscaping, raising levels or engineering fill) will be undertaken in accordance with the engineered design of the Proposed Development. Where required, organic matter or soil conditioners to improve soil structure and fertility before re-use.

Surplus material, not suitable for reuse onsite, will be segregated, and stockpiled appropriately for removal offsite. For any excavated material identified for removal offsite, while assessment and approval of acceptance at a destination re-use, recovery site or waste facility is pending, excavated soil for recovery/disposal shall be stockpiled as follows:

- A suitable temporary storage area will be identified and designated.
- In order to minimise potential impact on soil quality, the handling of the stockpiled soil and stone will be minimised and will not be disturbed once formed.
- Stockpiles will not be positioned adjacent to ditches, watercourses or existing or future excavations. Stockpiles will be a minimum of 30m from existing drains and ditches.
- Material identified for reuse on site, off site and waste materials will be individually segregated and all segregation, storage and stockpiling locations will be clearly delineated on the site drawings.
- Soil stockpiles will be covered to prevent run-off from the stockpiled material, the generation of dust and/or minimise infiltration or accumulations of rainwater.
- Material identified for reuse on site, off site and waste materials will be individually segregated. When a stockpile has been sampled for classification purposes, it shall be considered to be complete, and no more soil shall be added to that stockpile prior to disposal.
- Any waste that will be temporarily stored / stockpiled will be stored on impermeable surface high-grade polythene sheeting, hardstand areas or skips to prevent cross-contamination of the soil below or cross contamination with soil.
- Regular watering will take place to ensure the moisture content is high enough to increase the stability of the soil and thus suppress dust.

An excavation/ stockpile register will be maintained on site showing at least the following information:

- Stockpile number.
- Origin (i.e., location and depth of excavation).
- Approximate volume of stockpile.
- Date of creation.
- Description and Classification of material.
- Date sampled.
- Date removed from site.
- Disposal/recovery destination.
- Photograph

Export of Resource (Soil and Subsoil) and Waste

Any waste generated from construction activities, including concrete, asphalt and soil stockpiles, will be managed in accordance with the procedures outlined in the CEMP (Enviroguide Consulting, 2025a) and RWMP (Enviroguide Consulting, 2025b) and will be stored onsite in such a manner as to:

- Prevent environmental pollution (bunded and/or covered storage, minimise noise generation and implement dust/odour control measures, as may be required).

- Maximise waste segregation to minimise potential cross contamination of waste streams and facilitate subsequent re-use, recycling and recovery.
- Prevent hazards to site workers and the general public during Construction stage (largely noise, vibration and dust).

All surplus materials and any waste will be removed offsite in accordance with the requirements outlined in the CEMP (Enviroguide Consulting, 2025a) and RWMP (Enviroguide Consulting, 2025b) and will be managed in accordance with all legal obligations. It will be the contractor's responsibility to either; obtain a waste collection permit or, to engage specialist waste service contractors who will possess the requisite authorisations, for the collection and movement of waste offsite.

As documented in the RWMP (Enviroguide Consulting, 2025b), where appropriate, excavated soil and material intended for recovery or disposal offsite will require appropriate waste classification in order to select an appropriate receiving facility. Assessment of the excavated material will be carried out with due regard to the following guidance and legislation:

- Environmental Protection Agency document entitled Waste Classification; List of waste and determining if waste is Hazardous or Non-Hazardous.
- EU Council Decision 2003/33/EC establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 and Annex II of Directive 1999/31/EC (2002).
- Environmental Protection Agency documented entitled Guidance on Waste Acceptance Criteria at Authorised Soil Recovery Facilities.
- Environment Agency, 2018. Technical Guidance WM3: Guidance on the classification and assessment of waste.
- Any other guidance or legislation that might be applicable or relevant at the time of disposal.

The re-use of soil and subsoil offsite will be undertaken in accordance with all statutory requirements and obligations including where appropriate re-use as by-product in accordance with Article 27 of the European Communities (Waste Directive) Regulations 2011 (SI No. 126 of 2011) as amended.

Any surplus material not suitable for re-use as a by-product and other waste materials arising from the construction stage will be removed offsite by an authorised contractor and sent to the appropriately authorised (licensed/permitted) receiving waste facilities. As only authorised facilities will be used, the potential impacts at any authorised receiving facility sites will have been adequately assessed and mitigated as part of the statutory consent procedures.

Any waste soils will be transported under a valid waste collection permit issued under the Waste Management (Collection Permit) Regulations 2007, as amended and will be delivered to an appropriately authorised waste management facility.

Materials and waste will be documented prior to leaving the site. All information will be entered into a waste management register kept on the site.

Vehicles transporting material with potential for dust emissions to an offsite location shall be enclosed or covered with a tarpaulin at all times to restrict the escape of dust.

Public roads outside the site will be regularly inspected for cleanliness and cleaned as necessary. The main contractor will carry out road sweeping operations, employing a suction sweeper or similar appropriate method, to remove any project related dirt and/or material deposited on the road by construction/ delivery vehicles. All vehicles exiting the site will make use of a wheel wash facility where appropriate, prior to exiting onto public roads.

Concrete Works

Pre-cast concrete will be used where technically feasible to meet the design requirements for the Proposed Development. Where cast-in-place concrete is required, all work will be carried out to

avoid any contamination of the receiving geological environment through the use of appropriate design and methods implemented by the appointed Contractor and in accordance with the CEMP (Enviroguide, 2025a) and relevant industry standards.

All ready-mixed concrete will be delivered to the site by truck. The following measures will be implemented where poured concrete is being used on site:

- The production, transport and placement of all cementitious materials will be strictly planned and supervised. Site batching/production of concrete will not be carried out on site.
- Shutters will be designed to prevent failure. Grout loss will be prevented from shuttered pours by ensuring that all joints between panels achieve a close fit or that they are sealed.
- Where concrete is to be placed by means of a skip, the opening gate of the delivery chute will be securely fastened to prevent accidental opening.
- Where possible, concrete skips, pumps and machine buckets will be prevented from slewing over water when placing concrete.
- Concrete mixer trucks will not be permitted to wash out on-site with the exception of cleaning the chute into a container which will then be emptied into a skip for appropriate compliant removal offsite.
- Surplus concrete will be returned to batch plant after completion of a pour.

Handling of Fuels, Chemicals and Materials

Fuelling and lubrication of equipment will be carried out in accordance with the procedures outlined in the CEMP (Enviroguide, 2025), in a designated area of the site away from any watercourses and drains (where not possible to carry out such activities onsite.

Any diesel, fuel or hydraulic oils stored on-site will be sealed, secured and stored in a dedicated internally bunded chemical storage cabinet unit or inside concrete bunded areas to prevent any seepage to ground. There will be clear labelling of containers so that appropriate remedial measures can be taken in the event of a spillage.

- Bunds will have regard to Environmental Protection Agency (EPA) guidelines 'Storage and Transfer of Materials for Scheduled Activities' (EPA, 2013) and Enterprise Ireland's Best Practice Guide (BPGCS005 Oil Storage Guidelines). All tank and drum storage areas will, as a minimum, be bunded to a volume not less than the greater of the following:
    - 110% of the capacity of the largest tank or drum within the bunded area; or
    - 25% of the total volume of substance that could be stored within the bunded area.
- Vehicle or equipment maintenance work will take place in a designated impermeable area within the site.
- Portable generators or similar fuel containing equipment will also be placed on suitable drip trays or bunds.

Refuelling of plant and vehicles during the construction stage will only be permitted at designated refuelling station locations onsite and will be from a road tanker brought to site as required. Each station will be fully contained and equipped for spill response and a specially trained and dedicated Environmental and Emergency Spill Response team will be appointed by the Contractor before the commencement of works onsite.

A procedure will be drawn up by the contractor which will be adhered to during refuelling of onsite vehicles. This will include the following:

- Fuel will be delivered to plant onsite by dedicated tanker.
- All deliveries to onsite vehicles will be supervised and records will be kept of delivery dates and volumes.

- The driver will be issued with, and will carry at all times, absorbent sheets and granules to collect any spillages that may accidentally occur.
- Where the nozzle of a fuel pump cannot be placed into the tank of a machine then a funnel will be used.
- All re-fuelling will take place in a designated impermeable area. In addition, oil absorbent materials will be kept onsite in close proximity to the re-fuelling area.

Emergency Procedures

Emergency procedures will be developed by the appointed Contractor in advance of works commencing and spillage kits will be available on-site including in vehicles operating on-site. Construction staff will be familiar with emergency procedures in the event of accidental fuel spillages. Remedial action will be immediately implemented to address any potential impacts in accordance with industry standards and legislative requirements.

- Any required emergency vehicle or equipment maintenance work will take place in a designated impermeable area within the Proposed Development site.
- Emergency response procedures will be put in place, in the unlikely event of spillages of fuels or lubricants.
- Spill kits including oil absorbent material will be provided so that any spillage of fuels, lubricants or hydraulic oils will be immediately contained.
- In the event of a leak or spill from equipment in the instance of a mechanical breakdown during operation, any contaminated soil will be removed from the Proposed Development site and compliantly disposed offsite. Residual soil will be tested to validate that all potentially contaminated material has been removed. This procedure will be undertaken in accordance with industry best practice procedures and standards.
- All construction works staff will be familiar with emergency procedures in the event of accidental fuel spillages.
- All construction works staff onsite will be fully trained on the use of equipment.

This procedure will be undertaken in accordance with industry best practice procedures and standards. These measures will ensure that there is minimal risk to the receiving land, soil and geology associated with the construction stage of the Proposed Development.

Welfare Facilities

Welfare facilities have the potential, if not managed appropriately, to release organic and other contaminants to ground or surface water courses. Foul drainage from temporary welfare facilities during the construction stage of the Proposed Development will be discharged to temporary holding tank(s) the contents of which will periodically be tankered offsite to a licensed facility. All waste from welfare facilities will be managed in accordance with the relevant statutory obligations by an appropriately authorised contractor.

Any connection to the public foul drainage network during the construction stage of the Proposed Development will be undertaken in accordance with the necessary temporary discharge licences issued by UE.

Operational Stage

During the operational stage of the Proposed Development there is no likely potential for any direct adverse impact on the receiving land, soil and geological environment at the site taking account of the design for the Proposed Development. Therefore, there is no requirement for mitigation measures for the operational stage.

19.4.2 Proposed Development- Plot 2 (LRD Scheme)

Construction Stage

Mitigation measures during the construction stage of the Proposed Development (i.e., the - Plot 2 (LRD Scheme) are the same as the mitigation measures stated above for the construction stage of Plot 1 (Luttrellstown Gate Phase 2) development

Operational Stage

Mitigation measures during the Operational stage of the Proposed Development (i.e., the Plot 2 (LRD Scheme) are the same as the mitigation measures stated above for the operational stage of Plot 1 (Luttrellstown Gate Phase 2) development.

19.5 Water (Chapter 8)

The measures outlined in this section of the report will ensure that there will be no significant impact on the receiving groundwater and surface water environment and associated receptors (e.g., Natura 2000 sites). Therefore, the Proposed Development will not have any impact on compliance with the EU Water Framework Directive, European Communities (Environmental Objectives) Surface Water Regulations (S.I. 272 of 2009 and as amended) and the European Communities Environmental Objectives (Groundwater) Regulations (S.I. No. 9 of 2010 and as amended) individually or in combination.

19.5.1 Proposed Development - Plot 1 (Luttrellstown Gate Phase 2)

Construction Stage

During the construction stage, all works will be undertaken in accordance with the Construction Environmental Management Plan (CEMP) (Enviroguide Consulting, 2025). Following appointment, the contractor will be required to further develop the CEMP to provide detailed construction phasing and methods to manage and prevent any potential emissions to ground with regard to the relevant industry standards (e.g., Guidance for Consultants and Contractors, CIRIA-C532', CIRIA, 2001). The CEMP will be implemented for the duration of the construction stage, covering construction and waste management activities that will take place during the construction stage of the Proposed Development. Mitigation works will be adopted as part of the construction works for the Proposed Development. These measures will address the main activities of potential impact which include:

- Control and Management of surface water runoff.
- Control and management of shallow groundwater during excavation and dewatering (if required).
- Management and control of soil and materials.
- Appropriate fuel and chemical handling, transport and storage.
- Management of accidental release of contaminants at the site

The construction works will be managed in accordance with all statutory obligations and regulations and with standard international best practice. Good construction management practices will minimise the risk of pollution from construction activities at the site including but not limited to:

- Construction Industry Research and Information Association (CIRIA), 2001. Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors.
- CIRIA, 2015. Environmental Good Practice on Site (C741).
- Enterprise Ireland Oil Storage Guidelines (BPGCS005).

- Environmental Protection Agency (EPA), 2013. IPC Guidance Note on Storage and Transfer of Materials for Scheduled Activities.
- CIRIA, 2007. The SuDS Manual (C697).
- UK Environment Agency, 2004. UK Pollution Prevention Guidelines (PPG).
- CIRIA, 2006. Control of Water Pollution from Linear Construction Projects: Technical Guidance (C648).

Control and Management of Water and Surface Water Runoff

There will be no direct discharge to groundwater or surface water during the construction stage of the Proposed Development.

All run-off from the site or any areas of exposed soil will be managed as required with temporary pumping and following appropriate treatment as required. Surface water runoff from areas stripped of topsoil and surface water collected in excavations will be directed to onsite settlement ponds where measures will be implemented to capture and treat sediment laden runoff prior to discharge at a controlled rate. It is noted that, where required, surface water runoff will be prevented from entering open excavations with sandbags or other approved methods proposed by the Contractor.

Where dewatering of shallow groundwater is required or where surface water runoff must be pumped from the excavations, water will be managed in accordance with best practice standards (i.e., CIRIA C750), the CEMP (Enviroguide Consulting, 2025) and regulatory consents to minimise the potential impact on the local groundwater flow regime of the underlying aquifer.

All water leaving the site during the construction stage will be desilted in onsite settlement ponds including geotextile liners and riprapped inlets and outlets to prevent scour and erosion. The location of the settlement ponds will be reviewed and moved regularly as required. Additional measures will be implemented as required to capture and treat sediment laden surface water runoff (e.g., sediment retention ponds / tanks, surface water inlet protection, fencing and signage around specific exclusion zones and earth bunding adjacent to open drainage ditches). Where required, the water will also be directed through a hydrocarbon interceptor prior to discharge from the site.

Unauthorised discharge of water (groundwater / surface water runoff) to ground, drains or watercourses will not be permitted. The appointed Contractor will ensure that the discharge of water to ground, drains or watercourses will be in accordance with the necessary discharge licences issued by UE under Section 16 of the Local Government (Water Pollution) Acts and Regulations for any water discharges to sewer or from Fingal County Council under Section 4 of the Local Government (Water Pollution) Act 1977, as amended in 1990 for discharges to surface water.

Where required, stockpiles of loose materials pending re-use onsite will be protected for the duration of the works and not located in areas where sediment laden runoff may enter existing surface water drains. To help shed rainwater and prevent ponding and infiltration, the sides and top of the stockpiles will be regraded to form a smooth gradient with compacted sides reducing infiltration and silt runoff. Where required, silt fences will be erected at the toe of stockpiles to prevent run-off. The silt fences will be monitored daily by the appointed contractor and silt will be removed as required.

A regular review of weather forecast will take place, insofar as possible, ground excavation works will be scheduled during period of dry weather to minimise potential for silt laden runoff.

Importation of Materials

Contract and procurement procedures will ensure that all imported aggregates, soil and other construction materials required for the Proposed Development will be sourced from reputable suppliers operating in a sustainable manner and in accordance with industry conformity/compliance standards and statutory obligations. The importation of aggregates will be subject to management and control procedures to ensure the suitability for use in accordance with engineering and

environmental specifications for the Proposed Development. Therefore, any unsuitable material will be identified prior to unloading / placement onsite.

Concrete Works

Pre-cast concrete will be used where technically feasible to meet the design requirements for the Proposed Development. Where cast-in-place concrete is required, all work will be carried out to avoid any contamination of the receiving geological environment through the use of appropriate design and methods implemented by the appointed Contractor and in accordance with the CEMP (Enviroguide, 2025) and relevant industry standards.

All ready-mixed concrete will be delivered to the site by truck. The following measures will be implemented where poured concrete is being used on site:

- The production, transport and placement of all cementitious materials will be strictly planned and supervised. Site batching/production of concrete will not be carried out on site.
- Shutters will be designed to prevent failure. Grout loss will be prevented from shuttered pours by ensuring that all joints between panels achieve a close fit or that they are sealed.
- Where concrete is to be placed by means of a skip, the opening gate of the delivery chute will be securely fastened to prevent accidental opening.
- Where possible, concrete skips, pumps and machine buckets will be prevented from slewing over water when placing concrete.
- Concrete mixer trucks will not be permitted to wash out on-site with the exception of cleaning the chute into a container which will then be emptied into a skip for appropriate compliant removal offsite.
- Surplus concrete will be returned to batch plant after completion of a pour.

Handling of Fuels and hazardous Materials

Fuelling and lubrication of equipment will be carried out in accordance with the procedures outlined in the CEMP (Enviroguide, 2025), in a designated area of the site away from any watercourses and drains (where not possible to carry out such activities onsite.

Any diesel, fuel or hydraulic oils stored on-site will be sealed, secured and stored in a dedicated internally bunded chemical storage cabinet unit or inside concrete bunded areas to prevent any seepage to ground. There will be clear labelling of containers so that appropriate remedial measures can be taken in the event of a spillage.

- Bunds will have regard to Environmental Protection Agency (EPA) guidelines ‘Storage and Transfer of Materials for Scheduled Activities’ (EPA, 2013) and Enterprise Ireland’s Best Practice Guide (BPGCS005 Oil Storage Guidelines). All tank and drum storage areas will, as a minimum, be bunded to a volume not less than the greater of the following:
    - 110% of the capacity of the largest tank or drum within the bunded area; or
    - 25% of the total volume of substance that could be stored within the bunded area.
- Vehicle or equipment maintenance work will take place in a designated impermeable area within the site.
- Portable generators or similar fuel containing equipment will also be placed on suitable drip trays or bunds.

Refuelling of plant and vehicles during the construction stage will only be permitted at designated refuelling station locations onsite and will be from a road tanker brought to site as required. Each station will be fully contained and equipped for spill response and a specially trained and dedicated

Environmental and Emergency Spill Response team will be appointed by the Contractor before the commencement of works onsite.

A procedure will be drawn up by the contractor which will be adhered to during refuelling of onsite vehicles. This will include the following:

- Fuel will be delivered to plant onsite by dedicated tanker.
- All deliveries to onsite vehicles will be supervised and records will be kept of delivery dates and volumes.
- The driver will be issued with, and will carry at all times, absorbent sheets and granules to collect any spillages that may accidentally occur.
- Where the nozzle of a fuel pump cannot be placed into the tank of a machine then a funnel will be used.
- All re-fuelling will take place in a designated impermeable area. In addition, oil absorbent materials will be kept onsite in close proximity to the re-fuelling area.

Emergency Procedures

Emergency procedures will be developed by the appointed Contractor in advance of works commencing and spillage kits will be available on-site including in vehicles operating on-site. Construction staff will be familiar with emergency procedures in the event of accidental fuel spillages. Remedial action will be immediately implemented to address any potential impacts in accordance with industry standards and legislative requirements.

- Any required emergency vehicle or equipment maintenance work will take place in a designated impermeable area within the Proposed Development site.
- Emergency response procedures will be put in place, in the unlikely event of spillages of fuels or lubricants.
- Spill kits including oil absorbent material will be provided so that any spillage of fuels, lubricants or hydraulic oils will be immediately contained.
- In the event of a leak or spill from equipment in the instance of a mechanical breakdown during operation, any contaminated soil will be removed from the Proposed Development site and compliantly disposed offsite. Residual soil will be tested to validate that all potentially contaminated material has been removed. This procedure will be undertaken in accordance with industry best practice procedures and standards.
- All construction works staff will be familiar with emergency procedures in the event of accidental fuel spillages.
- All construction works staff onsite will be fully trained on the use of equipment.

This procedure will be undertaken in accordance with industry best practice procedures and standards. These measures will ensure that there is minimal risk to the receiving hydrological and hydrogeological environment associated with the construction stage of the Proposed Development.

Welfare Facilities

Welfare facilities have the potential, if not managed appropriately, to release organic and other contaminants to ground or surface water courses. Foul drainage from temporary welfare facilities during the Construction stage of the Proposed Development will be discharged to temporary holding tank(s) the contents of which will periodically be tankered offsite to a licensed facility. All waste from welfare facilities will be managed in accordance with the relevant statutory obligations by tankering of waste offsite by an appropriately authorised contractor.

Any connection to the public foul drainage network during the Construction stage of the Proposed Development will be undertaken in accordance with the necessary temporary discharge licences issued by UE.

Operational Stage

There will be no risk to water quality including groundwater and surface water associated with the operational stage of the Proposed Development. It is considered that the design of the Proposed Development is in line with the objectives of the Water Framework Directive (2000/60/EC), as amended (WFD) to prevent or limit any potential impact on water quality.

There will be no petroleum hydrocarbon-based fuels used during the operational stage and the main operating system for heating will be air source heat pumps, thereby removing any potential contaminant sources associated with fuels.

There will be no direct discharges to ground from drainage and only rainfall in public open spaces will infiltrate to ground. There will also be some limited infiltration to ground via SuDS solutions.

All drainage from paved areas along roads and impermeable roads will be collected and managed within the surface water drainage and SuDS solutions as outlined in the Engineering Assessment Report (WM, 2025a and WM, 2025c).

The surface water management strategy includes a number of measures that will capture any potentially contaminating compounds (petroleum hydrocarbons, metals, and suspended sediments) in surface water runoff from the higher risk areas including roads and the impermeable areas that could potentially otherwise discharge to groundwater or receiving water courses in the vicinity the site. The measures incorporated in the SuDS design include filter drains, permeable paving, tree pits, green roofing, attenuation storage and class1 petrol interceptor within the drainage and SuDS system. These drainage design measures will be effective in the treatment and removal of any contaminants (metals, polycyclic aromatic hydrocarbons (PAHs) and suspended solids) entrained in surface water runoff. The effectiveness of these SuDS measures is documented in TII guidance (TII, 2014). Furthermore, prior to discharging from the site will pass through a class 1 petrol interceptor that will be effective in removal of hydrocarbons that may enter the drainage system in particular in the event of worst-case scenario spill incident (e.g., collision on the roadway resulting in the loss of fuel form a vehicle).

Ongoing regular operational monitoring and maintenance of drainage and the SuDS measures will be incorporated into the overall management strategy for the Proposed Development. This will ensure that there are no impacts on water quality and quantity (flow regime) during the Operational stage of the Proposed Development.

Accordingly, any potential impact on receiving surface water and groundwater beneath the Proposed Development site will be avoided taking account of the design proposals. Therefore, it is considered that the water quality protection criteria and objectives of the GDSDS and Water Framework Directive will be achieved.

There is no other requirement for mitigation measures for the Operational stage of the Proposed Development.

19.5.2 Proposed Development- Plot 2 (LRD Scheme)

Construction Stage

Mitigation measures during the construction stage of the Proposed Development (i.e., the - Plot 2 (LRD Scheme) are the same as the mitigation measures stated above for the construction stage of Plot 1 (Luttrellstown Gate Phase 2).

Operational Stage

Mitigation measures during the Operational stage of the Proposed Development (i.e., the Plot 2 (LRD Scheme) are the same as the mitigation measures stated above for the operational stage of Plot 1 (Luttrellstown Gate Phase 2).

19.6 Climate (Air Quality) (Chapter 9)

The mitigation measures discussed below are applicable to Plot 1 and Plot 2.

Construction Phase

Communications

- Display he name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager;
- Display the head or regional office contact information; and
- Develop and implement a Dust Management Plan (DMP), the final dust management plan will form part of the overall construction management plan which will formally be prepared and submitted to Fingal County Council post grant of planning permission.

Site Management

- Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken;
- Make the complaints log available to the local authority when asked;
- Record any exceptional incidents that cause dust and/or air emissions, either on- or off-site, and the action taken to resolve the situation in the log book; and
- Hold regular liaison meetings with other high risk construction sites within 250m of the site boundary, to ensure plans are co-ordinated and dust and particulate matter emissions are minimised. It is important to understand the interactions of the off-site transport/deliveries which might be using the same strategic road network routes.

Monitoring

- Undertake daily on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the Fingal County Council when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars and windowsills within 100 m of site boundary, with cleaning to be provided if necessary;
- Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the Fingal County Council when asked; and
- Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.

Preparing and Maintaining the site

- Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible;
- Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site;

- Fully enclose site or specific operations where there is a high potential for dust production and the site is actives for an extensive period;
- Avoid site runoff of water or mud;
- Keep site fencing, barriers and scaffolding clean using wet methods;
- Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below; and
- Cover, seed or fence stockpiles to prevent wind whipping.

Operating Vehicle/Machinery and Sustainable Travel

- Ensure all vehicles switch off engines when stationary – no idling vehicles;
- Avoid the use of diesel- or petrol-powered generators and use mains electricity or battery powered equipment where practicable; and
- A speed restriction of 20 km/hr will be applied as an effective control measure for dust for on-site vehicles using unpaved haul roads.

Operations

- Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems;
- Ensure an adequate water supply on the site for effective dust/particulate matter suppression/ mitigation, using non-potable water where possible and appropriate;
- Use enclosed chutes and conveyors and covered skips;
- Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate; and
- Ensure equipment is readily available on site to clean any dry spillages and clean up spillages as soon as reasonably practicable.

Waste Management

- Avoid bonfires and burning of waste materials.

Measures Specific to Demolition (Applicable to Plot 2 only)

- Soft strip inside buildings before demolition (retaining walls and windows in the rest of the building where possible, to provide a screen against dust);
- Ensure effective water suppression is used during demolition operations. Handheld sprays are more effective than hoses attached to equipment as the water can be directed to where it is needed. In addition, high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground;
- Avoid explosive blasting, using appropriate manual or mechanical alternatives; and
- Bag and remove any biological debris or damp down such material before demolition.

Measures Specific to Construction

- Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable;
- Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable; and
- Only remove the cover in small areas during work and not all at once.

Measures Specific to Trackout

- Use water-assisted dust sweeper(s) on the access and and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use;
- Avoid dry sweeping of large areas;
- Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport;
- Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable;
- Record all inspections of haul routes and any subsequent action in a site log book;
- Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned;
- Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable);
- Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits; and
- Access gates to be located at least 10 m from receptors, where possible.

Operational Phase

It has been determined that the operational phase air quality impact is negligible for Plot 1 and Plot 2 and therefore, no site-specific mitigation measures are proposed.

19.7 Climate (Climate Change) (Chapter 10)

19.7.1 Proposed Development

Construction Stage

Embodied carbon of materials and construction activities will be the primary source of climate impacts during the construction phase. During the construction phase the following best practice measures shall be implemented on site to prevent significant GHG emissions and reduce impacts to climate:

- Prevention of on-site or delivery vehicles from leaving engines idling, even over short periods.
- Ensure all plant and machinery are well maintained and inspected regularly.
- Minimising waste of materials due to poor timing or over ordering on site will aid to minimise the embodied carbon footprint of the site. A construction waste management plan will be implemented to minimise construction waste sent to landfills. Recycling of materials will be promoted to and reduce the environmental footprint of the site.
- Sourcing materials locally will be prioritised. This will help to reduce transport related CO_2 emissions and helps support local suppliers, further promoting economic sustainability.

- Material choices and quantities will be reviewed during detailed design, to identify and implement any lower embodied carbon options, where feasible. For example a 30% minimum clinker replacement in cement may be utilised in line with the requirements for public bodies.
- The housing units will be built of timber frame. Timber is not as carbon intensive as other materials and is a preferable structural material to traditional concrete blocks. Both the Climate Change Advisory Council (CCAC) and National Climate Action Plan advise for the use of timber framed buildings as a construction method. Timber frames have the additional benefit of having absorbed carbon from the atmosphere during their growth and providing a long-term carbon sink during their lifetime in the building.

In terms of impact on the proposed development due to climate change, during construction the Contractor will be required to mitigate against the effects of extreme rainfall/flooding through site risk assessments and method statements. The Contractor will also be required to mitigate against the effects of extreme wind/storms, temperature extremes through site risk assessments and method statements. All materials used during construction will be accompanied by certified datasheets which will set out the limiting operating temperatures. Temperatures can affect the performance of some materials, and this will require consideration during construction. During construction, the Contractor will be required to mitigate against the effects of fog, lighting and hail through site risk assessments and method statements.

Operational Stage

A number of mitigation measures have been incorporated into the design of the development to reduce the impact on climate wherever possible. An Energy Statement was prepared by Waterman Moylan Consulting Engineers in relation to the proposed development.

Plot 1 (Luttrellstown Gate Phase 2)

The Energy Statement in relation to Plot 1 states that the development will be a Nearly Zero Energy Building (NZEB) in accordance with the 2021 Part L requirements. The development has been designed to reduce operational energy demand where possible. The following outlines the primary elements included in the development for the residential dwellings based on the Energy Statement prepared by Waterman Moylan.

Residential Dwellings:

- The residential units will aim to achieve a Building Energy Ratio (BER) in line with the NZEB and Part L requirements
- Exceed minimum U-Value standards by 20% to 30%
- Achieve air tightness standards of 3 $m^3/m^2/hr$
- Ensure thermal bridging details are design to achieve thermal bridging factors of between 0.04 – 0.15 W/m^2K
- Install centralised mechanical ventilation systems to ensure adequate ventilation rates are achieved in the dwelling which maximising the benefits of the airtight construction
- Install Air Source Heat Pumps to meet NZEB requirement
- Install PV panels for apartments ensuring landlord areas meet renewable contribution requirements

Plot 2 (St. Mocthas LRD)

As per the Energy Statement, the development will be a Nearly Zero Energy Building (NZEB) in accordance with the 2021 Part L requirements. The development has been designed to reduce operational energy demand where possible. The following outlines the primary elements included

in the development for both the residential dwellings and communal area based on the Energy Statement prepared by Waterman Moylan.

Residential Dwellings:

- The residential units will aim to achieve a Building Energy Ratio (BER) in line with the NZEB and Part L requirements
- Exceed minimum U-Value standards by 20% to 30%
- Achieve air tightness standards of 3 $m^3/m^2/hr$
- Ensure thermal bridging details are design to achieve thermal bridging factors of between 0.04 – 0.15 W/m^2K
- Install centralised mechanical ventilation systems to ensure adequate ventilation rates are achieved in the dwelling which maximising the benefits of the airtight construction
- Install Air Source Heat Pumps to meet NZEB requirement
- Install PV panels for apartments ensuring landlord areas meet renewable contribution requirements

Communal Area

- Exceed minimum U-Value standards by 20% to 30%,
- Achieve air tightness standards of 5 $m^3/m^2/hr$
- Analyse the proposed glazing proportions and orientations and select appropriate solar control glazing and/or shading devices to reduce the solar gain to the spaces to an appropriate level.
- Provide a full central ventilation system with heat recovery devices
- Provide a heat pump to meet Part L renewable contribution requirements

The above measures for Plot 1 and Plot 2 will assist in optimising the energy consumed by the development and will also have the benefit of reducing the impact to climate during the operational phase of the development.

Some measures have been incorporated into the design of the development to mitigate the impacts of future climate change. For example, adequate attenuation and drainage have been incorporated to avoid potential flooding impacts due to increased rainfall events in future years. These measures have been considered when assessing the vulnerability of the proposed development to climate change (see Section **Error! Reference source not found.**).

19.7.2 Cumulative

No specific mitigation is proposed for the cumulative assessment.

19.8 Climate (Sunlight & Daylight) (Chapter 11)

19.8.1 Proposed Development - Plot 1 (Luttrellstown Gate Phase 2)

Construction Stage

The potential impact to both daylight and sunlight during the construction stage is likely to be less than that of the completed development. As construction progresses the impact on the receiving environment will increase until it reaches that of the completed development (Operational Stage).

Temporary structures and machinery (cranes, hoarding, scaffolding, etc.) would have an impact, but this is expected to be minor and temporary. Thus, no mitigations measures will be required.

Note: the mitigation measures during the construction stage will be similar for both applications.

Operational Stage

Given the rural nature of the site and the distance the proposed buildings are from existing dwelling, or the scheme currently under construction to the east and south, the impact to daylight and sunlight on any neighbouring dwellings would be imperceptible. Therefore, no mitigation measures are required.

19.8.2 Proposed Development- Plot 2 (Mochta's LRD)

Construction Stage

The mitigation measures will be similar to Plot 1 above.

Operational Stage

There is a very limited impact by the proposed scheme on existing or planned scheme in the receiving environment. The dwellings that were assessed for potential effects to daylight and sunlight were predicted to experience only Slight or Not Significant impacts and therefore, no mitigation measures are required.

19.8.3 Cumulative

Construction Stage

The mitigation measures will be similar to Plot 1, above.

Operational Stage

There is no additional cumulative impact when both Plot 1 and 2 are completed, therefore no mitigation measures are required.

19.9 Air (Noise & Vibration) (Chapter 12)

Mitigation measures outlined below are applicable to both Plot 1 (Luttrellstown Gate Phase 2) and Plot 2 (St. Mochta's LRD).

Construction Stage

Noise Mitigation Recommendations

Best practice control measures for noise from construction sites are found within BS 5228 (2009 +A1 2014) part 1. Construction noise impacts are expected to vary during the construction phase of the project, this impact will depend on the distance between the construction activities and noise sensitive receptor. The contractor will ensure that all best practice noise and control methods will be used, to ensure any negative noise impacts at off-site noise sensitive locations are minimised.

The best practice measures set out in BS 5228 (2009) Part 1 includes guidance on several aspects of construction site mitigation measures, this includes the following;

- selection of quiet plant and equipment;
- noise control at source of the noise;

- screening, and;
- public liaison.

General Recommendations

This section of the report sets out noise mitigation options and detailed comment on each one specifically for this site.

Selection of Plant and Equipment

The noise impact of all plant and equipment should be assessed by an appropriately qualified acoustic consultant prior to selection of the plant for the project. Where an item of plant is identified as noisy with the potential to cause a negative noise impact it should be reviewed to check if there is an alternative quieter version of the same plant to undertake the same construction task.

Noise Control at Source

Where replacing a noisy item of plant is not viable or practical, consideration should be given to control that noise at source. This includes modifying the piece of plant or equipment to generate less noise, using dampening to control vibration induced noise or rattling. Example best practice mitigation measures to be considered are as follows:

- All plant and equipment to be switched off when idling.
- The use of white noise reversing alarms.
- Restriction on the dropping and loading of materials to less sensitive hours.
- The use of local screening for noisy activities or works with hand tools
- Not dropping materials onto hard surfaces and using rubber mats etc for the dropping of materials.
- Ensure all plant and equipment is well maintained and cleaned, all lubrication should be in line with manufacturers guidelines.

Screening

Screening when used correctly can be an effective method of reducing the construction noise impact on the NSL's. The use of site hoarding and careful selection of areas for noise works, using buildings on the site, site offices and the building being constructed to screen noise from the works.

Local screening of noisy works with the use of temporary acoustic barriers, examples are provided below:

https://ventac.com/acoustic-products/noisebreak-acoustic-barrier/

https://echobarrier.com/

Figure 19.3: Temporary Construction Noise Barrier © Ventac

Public Engagement

It is recommended that a public liaison officer should be put forward by the contractor to liaise with the local residents on matters relating to noise. Residents should be informed of any noise works scheduled where there is the potential to generate high levels of construction noise or if specialist works etc need to be conducted out of the working hours. This person should also be the point of contact for all complaints and be responsible for reviewing the noise monitoring results and exceedances.

Site Specific Recommendations

Table 19.2 below outlines the recommended site-specific noise mitigation measures based on the attenuation for each construction phase.

Construction Stage	Recommended Noise Mitigation Measures
Site Setup	Erect a minimum 2.4m high site hoarding that blocks the line of sight between noise source and receiver. Example construction for the site hording would be as follows: A 2.4m high and 9mm plywood (4.5 kg/m2). Barrier must be solid and not contain gaps at the bottom or between adjacent panels Local screening using the examples provided in General Recommendations Section 12.8.1.2 are required around hand tools in addition to hoarding. An absorptive lining should be considered for screening around hand tools will need to have an absorptive lining to avoid reflections increasing noise at other receivers.

Construction Stage	Recommended Noise Mitigation Measures
	On this project 8 NSL's have been identified it is recommended that a noise monitor should be placed on the boundary of the nearest noise sensitive locations closest to the works i.e. NSL4 and NSL5 in this case.
Substructure	Site hoarding to block line of sight. Local screening around noisy plant and equipment.
Superstructure	Local screening around saws/hammers where possible. Use external new building to screen noise from works where possible.
External Finishes	Local screening around hand tools.

Table 19.2: Mitigation Required Based on the Construction Noise Predictions

Operational Stage

Based on the results from the noise impact assessment, the predicted results show compliance with all relevant standards for noise impact at the surrounding noise sensitive receptors. Therefore, no mitigation measures are required for the operational phase of the development.

Summary of Post-mitigation Effects

The following table summarises the identified likely significant residual effects during the construction phase of the proposed development following the application of mitigation measures.

Quality	Significance	Duration	Type
Neutral	Imperceptible	Short-Term	Noise
Neutral	Imperceptible	Short-Term	Vibration

Table 19.3- Summary of Construction Phase Effects Post Mitigation

The following table summarises the identified likely residual significant effects during the operational phase of the proposed development post mitigation.

Quality	Significance	Duration	Type
Neutral	Imperceptible	Long-Term	Noise
Neutral	Imperceptible	Long-Term	Vibration

Table19.4 - : Summary of Operational Phase Effects Post Mitigation

19.10 Landscape & Visual Impact Assessment (Chapter 13)

There are a number of measures that have and can be taken to ensure that the impacts of the proposed development are minimised during construction and subsequent occupation.

Design Stage

Consideration of the impact on landscape and visual aspects has been integral in the design and layout of the scheme as the design proceeded. The layout and design of the building's vis a vis the existing adjoining buildings and the inclusion of a significant amount of mature tree planting at the boundaries of the site and within the site are the main considerations in the landscape design process to minimise negative visual impacts.

A number of mitigation measures have been addressed including:

- The Fingal Co. Co. Green Infrastructure Policies and Objectives for development sites close to Green Corridors and adjoining canals are recognised by maintaining the integrity of the existing landscape elements and the inclusion of significant planting within the scheme.
- Provision of 2 storey development close to the canal and listed building and features.
- Provision of new public open spaces for future interaction of the said and adjoining developments
- The use of high quality hard and soft landscape materials a significant planting of semi mature trees (See Doyle O'Troithigh Landscape Plans & Planting Plans) befitting of a new residential scheme and suitable to the existing landscape
- Integrating the landscape elements of this extensive development into the surrounding built environment and connecting pathways and cycleways for future development to the west.
- Provision of a landscape design compatible with the proposed Royal Canal Greenway Project.

Construction Phase

Appropriate measures will be taken to mitigate' any potentially adverse construction-related effects on immediately adjoining neighbours. Similarly, the schools and offices to the south and east of the site will be impacted by the development works. Operation of a well-managed organised and planned construction site, with adequate control of construction traffic and working activity, is key to avoiding or minimising impact. A preliminary Construction Management Plan (CMP) is being submitted with the planning application, which details construction management measures during the construction phase. Other measures shall include:

- Adequate measures to protect existing adjoining hedgerow / street trees including the provision of hoarding / tree protection fencing where there could be damage from delivery vehicles or site vehicles.
- Use of hoarding for screening works and higher-level webbing on scaffolding to prevent materials falling from a height endangering road and footpath users close to the site.
- Directing site lighting away from surrounding properties
- Phasing development to reduce impacts on adjoining residential properties.

Operational Phase

Consistent and effective maintenance of hard and soft landscape areas, (in particular entrance areas, open space area and boulevards) together with quality site and building management are

key to avoiding or minimising negative landscape and visual impacts arising from the operation of the proposed development.

The design and layout of the proposed open space is considered appropriate in terms of its character, zoning and context. The proposed scheme (Refer to Figure 13-10 & 13-11) includes for a series of measures that will ensure a long-term positive impact, as follows: -

- **Public Open Space**

  The linear park to the Eastern boundary of the site development lands has been designed as the primary area of public open space. The park design has been informed by surface SUDS measures, connections with adjoining developments and the continuation of the pedestrian and cycle way from the Block A development. The designed park is a series of pockets of four open space lawn areas which provide potential for passive and active recreation for the residents. These pockets are framed by small areas of woodland planting into which social seating spaces have been developed. These social spaces provide direct supervision to each lawn pocket with the surrounding pathway network and residential units providing passive supervision to each lawn pocket.

- **Dr Troy Bridge Underpass**

  The use of the dead space beneath the Dr Troy bridge overpass is important to the development of the site lands and to the enhancement of a space which if not developed as part of this scheme could remain unemployed and vacant.

  The use of this vacant ground as an amenity area will provide an area of active recreation which is protected from the elements yet open to passive supervision. The proposal is for the development of the underpass ground plane into three distinct areas.

- **Communal Open Space**

  The communal open spaces provided as part of the Apartment Blocks have been designed as garden spaces with the focus on passive recreation and the development of areas of landscape which reflect private garden design and use.

- **Streetscape**

  All streets across the development have been designed to include islands of planting and tree planting set regularly across the street carparking. With larger pools of pollinator planting to create area of biodiversity across the site to encourage and develop a green infrastructure network, connecting the site internally and to the wider environment.

19.11 Material Assets (Transportation) (Chapter 14)

19.11.1 Proposed Development - Plot 1 (Luttrellstown Gate Phase 2)

Construction Stage

A detailed Construction Traffic Management Plan will be prepared and agreed with Fingal County Council before commencing works on site, which must describe the following (but not limited to):

- Dedicated construction transport routes, which will be identified and agreed upon with Fingal County Council before the commencement of construction activities on site.
- A dedicated “construction site”’ access/egress system to be implemented during the construction phases.
- Manage the entry and exit of heavy vehicles to and from the site, with a detailed description of operations during this time, including the assignment of staff to assist pedestrians and traffic flow during heavy vehicle movements on the roads.
- Define schedules for the entry and exit of materials and machinery to limit the generation of noise on the network to specific time slots.

- Conduct regular inspections of public roads affected by development activities to ensure that any disruption to public mobility is minimised and managed effectively.
- Due to the proximity of the proposed site along well-serviced bus routes and being well served by cycle lanes, it is intended to limit construction staff parking and to encourage the use of public transport. A limited number of car parking spaces may be provided for senior construction managers within the development site. Suitable locations in the surrounding area may be identified where staff can park and link to public transportation.
- For those wishing to cycle to and from the site, dedicated cycle parking will be provided for the duration of the works within the site. Shower facilities and lockers will also be provided.
- A shuttle service to/from the parking will be provided if required.

The coordinator responsible for the implementation of a Construction Mobility Management Plan will carry out the following (but not limited to):

- Encourage staff to avoid using of their cars and use alternative modes of transport in order to reduce the number of cars on the road and the need of car parking spaces.
- Provide an extensive information service for public transport options and routes at a public location(s) within the development for construction workers.
- Update the public transport information adjacent to the development on an ongoing basis.
- Advise company staff of tax incentives for public transport and bicycles. For those wishing to cycle to and from the site, dedicated cycle parking will be provided for the duration of the works within the site. Shower facilities and lockers will also be provided.

The following must be noted and implemented during the construction stage:

Measures to Minimise Nuisance

The measures, which are proposed to be operational at this site will include:

- Use of a properly designed access and egress to minimise impact on both external traffic and local amenity.
- Check on each arriving and departing vehicle at the site entrance from the public street.
- Use of banksman, where necessary, to control exit of construction vehicles onto public road.
- Issue of instructions and maps clearly setting out the construction traffic route to the site to each sub-Contractor to ensure that all contractors are clearly briefed on the route to/from the site.
- Ongoing assessment of the route for construction traffic to and from the site and prompt action when issues are identified.
- Working hours of 07h00-18h00 Monday – Friday and 08h00-14h00 Saturday or as otherwise may be agreed with Fingal County Council.

Site Control Measures

The designated and operational on-site control measures, which will be established and maintained at this site, will include:

- Designated hard routes and appropriate signage will be provided throughout the site to ensure the safety of all road users and construction workers.
- Each departing vehicle to be checked by banksman.
- All heavy vehicles spilling solid material on the road must cover the material to prevent dust being thrown onto the road.

- All vehicles should wash their wheels, as necessary, at egress point.
- Hoarding will be set up around the perimeter to prevent pedestrian access.
- A material storage zone will also be provided in the Construction Compound area. This storage zone will include material recycling areas and facilities.
- Facility to clean local roads if mud or spillage occurs.
- The contractor will be obliged to ensure that any sub-contractors engaged on the site are made fully aware of the required mitigation measures and that they are properly implemented as part of any works that they undertake.

Control of Noise

Site deliveries will be confined to working hours and an allocated offloading location will be utilized for all deliveries. Measures for the control and monitoring of noise and vibration during construction, including measures to mitigate noise are indicated below:

- Ensure all vehicle movement (on site) occur within normal working hours. (Other than where extension of work requiring such movements has been granted in cases of required road closures or for health and safety reasons).
- Plan deliveries and vehicle movements so that vehicles are not waiting or queuing on the public highway, if unavoidable engines should be turned off.
- Plan the site layout to ensure that reversing is kept to a minimum.
- Where reversing is required use broadband reverse sirens or where it is safe to do so disengage all sirens and use banksmen.
- Rubber/neoprene or similar non-metal lining material matting to line the inside of material transportation vehicles to avoid first drop high noise levels.
- Wheel washing of vehicles prior to exiting the site shall take place to ensure that adjoining roads are kept clean of dirt and debris. Regular washing of adjoining streets should also take place as required by road sweepers.

Operational Stage

A Mobility Management Plan will be implemented and developed on an ongoing basis with the triple objectives of promoting sustainability, enhancing public transport, and reducing dependency on the use of the private car.

This Mobility Management Plan focuses primarily on intangible measures such as promotion, marketing and events. A significant proportion of the measures included in this section are low cost but highly visible and contribute to creating a culture of sustainability within the organisation.

Consequently, the proposed Mobility Management Plan comprises a series of measures designed to encourage more sustainable travel habits among residents and visitors. In addition, the plan is designed to address the typical day-to-day operational requirements at the site. The implementation and management of the plan will be overseen by a Coordinator.

The developer will appoint a Mobility Management Plan coordinator or management company to oversee the development of the plan. The latter will appoint a senior member of staff as Mobility Management Plan Coordinator.

The Mobility Management Plan Coordinator will represent the philosophy of the plan and act as a coordinator for the proper functioning of the plan. The coordinator shall be appointed within two months of the site being occupied. The Mobility Management Plan Coordinator's responsibilities shall include:

- Implementing and maintaining the plan.

- Monitoring the progress of the plan.
- Liaise with internal stakeholders, and external public transport operators, planning and government authorities.
- Producing information reports for the developer, employees, visitors, clients and government authorities.
- Ongoing evaluation of the Plan's objectives.

The Mobility Management Plan Coordinator will be responsible for the creation and maintenance of up-to-date travel information boards for residents/students and/or Mobility Plan's mobile app and/or a website. The travel information boards will be installed in strategic location, where residents will have access to a variety of resources, including travel information, timetables, internet access, and notice boards.

In addition to the above responsibilities, the Mobility Management Plan Coordinator must also undertake the following activities:

- Local Policies Review with the aim of understanding their impact on the daily resident travel patterns
- Site Audit considering the following guidance:
    - Public Transport service: considering the location of the bus stops and the train stations, the route which is served and the frequency of services passing through the bus stop or train station.
    - Pedestrian and cycle accessibility: this should include an assessment of the local cycling and walking environment from the subject development to the various public transport stops. This assessment must consider the current conditions and the need, where necessary, identify areas for improvement.
    - Road condition: considering the traffic condition and if there is congestion near the site.
    - Car parking spaces near to the site: A survey of the car parking facilities in the vicinity of the site will provide an indication of the potential parking areas, if employees and visitors do not have sufficient space within the site's car park. The survey must consider the volume and usage of the parking spaces, their location, quality and quantity, and the relationship between these factors and the demand for parking spaces. It must also consider any management issues that may arise.
    - Facilities' location: it is important for employees and visitors to be aware of the location of the primary shops, as well as the relative distance to the site. The distance should be provided in metres and in travel time, either walking or cycling.
- Residents Travel Survey: This can be achieved by means of self-completion questionnaires, which will help to identify travel requirements and set targets and needs. The information requested in the questionnaire should include:
    - Basic Personal information (age, household size, car ownership, occupation)
    - Primary mode of transport.
    - Current travel patterns including the time taken to/from the subject site to/from their destination.
    - It is also necessary to find out the views of workers and visitors on alternative modes of transport to the car, in order to identify the factors that would encourage them to switch to other modes. Furthermore, it is important to encourage the use of car-sharing schemes.
- Promoting the Mobility Management Plan the Mobility Management Coordinator to provide all new resident with a Mobility Pack (or Travel Pack). The mobility pack should include:

- The Mobility Management Plan.
- Public transport information, including bus and rail routes and frequencies.
- The benefits of the Mobility Management Plan for residents and visitors.
- Details of tax incentives available, such as the Bike to Work Scheme, the Tax Saver Scheme for public transport tickets, etc.
- A travel survey form.
- Details of pedestrian and cycle facilities.

Action Plan

Walking

It is well documented that there are numerous benefits to walking to and from their destination on a daily basis. The Subject Development is situated within an area characterised by a wider range of land uses that are accessible by walking. The surrounding area is characterised by a variety of land uses, food discount store, a primary school, and a secondary school.

It is proposed that residents be encouraged to reduce the use of the car for short journeys and indeed choose to walk to the nearest bus stops, grocery store, and to commute to their place of work, school, or college. For that, the connection of footpaths within the Subject Development with the existing will allow people to establish connections beyond the development itself.

The Mobility Management Coordinator will provide maps of the local area, which will show walking routes, local facilities, and distances with health information. This information will be displayed on the information board and/or the Mobility Plan mobile app and/or via a specific website; in order to assist residents and visitors understand the importance of choosing this mode of transportation over the automobile.

This communication tool will be developed to encourage residents to meet and walk together, fostering a sense of community between them. Furthermore, children enrolled in local schools will be encouraged to walk to school on a daily basis, thus reducing the number of private vehicles on the road.

Cycling and cycle parking

Cycling is an effective mode of transport, promoting independence and sustainable travel and allowing for shorter distances to various facilities.

The Subject Development is located in close proximity to a variety of amenities and employment areas, grocery stores, health care centres and shopping centres.

In order to facilitate the storage and maintenance of bicycles in the area, the subject development included cycle parking in line with the local guidelines and standards. The house units, those are provided with access to their rear garden with the possibility of storage the cycle and it is not considered necessary to provide any external bicycle store.

The Mobility Management Coordinator will provide maps of the local area, indicating cycle routes, local facilities, and distances with health information. This information will be displayed on the information board and/or the Mobility Plan mobile app and/or via a specific website; in order to assist residents and visitors in order to assist residents and visitors understand the importance of choosing this mode of transportation over the automobile.

Furthermore, the Mobility Management Coordinator will inform residents of future development of cycle infrastructure.

If there is a genuine interest in bicycle maintenance, public courses on the use, maintenance, repair, and improvement of bicycles may be proposed.

Additionally, residents are encouraged to avail themselves of the government's Cycle to Work scheme, which may be available through the local authority. Moreover, a fleet of hire bikes may be provided, which can be used to attend meetings or to test cycling to and from work before making a purchase.

Private and shared cars

Every day, thousands of commuters drive to work on the same routes to the same destinations at the same time as their colleagues. If every driver carried another driver, there would be 50% fewer cars on the road at peak times. There are numerous advantages to utilising sharing services for commuting purposes, including a reduction in carbon emissions, fuel costs and parking fees, as well as a reduction in congestion and journey times due to a reduction in the number of vehicles on the road. Additionally, the experience of the journey is enhanced due to a reduction in congestion and the presence of company.

Car sharing is a particularly attractive travel option for those living in areas with long distances or poor public transport connections. The Mobility Management Coordinator will encourage communication between different drivers by promoting the use of the information board and/or the Mobility Plan mobile app and/or a dedicated website, to facilitate the establishment of these car-sharing schemes. Furthermore, if the number of drivers is important, it may be beneficial to designate specific parking spaces in prime locations for carsharers only.

Car Park Management Plan

- Location and Allocation

All the car parking spaces at the subject development are controlled by the Mobility Management Plan Coordinator. They are all numbered and allocated.

The locations, numbers and allocation of the spaces are shown on the architectural drawings included with the planning application. The subject development included car parking spaces in line with the local guidelines and standards.

- Residents

Cars spaces are leased to residents by the Mobility Management Plan Coordinator. The duration of leases is for a minimum of 1 month and a maximum of 12 months, after which the lease can be renewed at the discretion of the Mobility Management Plan Coordinator, and subject to availability and demand, and strictly in accordance with the rules of the Car Park Management Plan in force at that time.

When a resident is allocated the use of a car space, the car space must be linked to a single vehicle only and the resident must be the owner, lessee or primary beneficial user of that vehicle.

Residents cannot park multiple vehicles in their designated parking space. Residents are not permitted to allow any other vehicles (whether owned by residents or not) to use their parking space.

- Visitors

Access to the space must be granted to the visitor by the resident and the allocated space must be free for the incoming visitor’s car.

- Accessible Spaces

Accessible car spaces are leased to residents with disabilities, upon presentation of a valid disabled parking permit, as issued by the Disabled Drivers Association on behalf of Department of Transport.

The spaces reserved for disabled badge holders cannot be used by non-badge holders.

- Electric Charging

The development will provide 20% of the total number of proposed parking spaces for electric vehicles. The remaining spaces have been designed to facilitate the relevant infrastructure to accommodate future electric charging.

- Inappropriate Parking

All vehicles must be properly parked within their designated bay. Consistent failure to do so, may result in the suspension or termination of the parking lease, at the discretion of the Mobility Management Plan Coordinator.

All car park users will be advised by signage that clamping of inappropriately parked cars will be in operation at the development. The fee for release of a clamp will be €40.00 - €80.00. This fee will be subject to annual review by the Mobility Management Plan Coordinator.

Inappropriate parking is defined as parking in restricted areas and locations such as:

- Access roads, ramps and aisles
- Disabled bays (if no window badge is displayed).
- Parking by unregistered drivers at spaces reserved for registered users.
- The Mobility Management Plan Coordinator will arrange for clamping to be in place to prevent parking in authorised spaces or areas.

- Parking Control Measures

The following measures are in place in the car park at the subject development.

- Numbering of car parking spaces, so as to permit their allocation to specific uses / users.
- Frequent 'on-the-beat' parking surveys conducted by site security and/or by parking management contractors, to monitor compliance with all parking restrictions.
- Enforcement of parking restrictions by means such as clamping and fines.
- Information on the use of alternative modes of transport, provided to development occupants and visitors by means of travel information via the travel information board and/or the Mobility Plan mobile app and/or a dedicated website.

If deemed necessary by the Mobility Management Plan Coordinator, folding parking barriers or hinged bollards may also be installed within individual parking spaces.

- Car Maintenance

Major repairs or servicing of vehicles is prohibited within the car park spaces or grounds at the subject development. However, where a vehicle is immobile due to breakdown, temporary access will be permitted for recovery vehicles for the purpose of undertaking minor repair and/or recovery.

<u>Strategy for public transport use</u>

- Promote Tax Saver Commuter tickets

The TaxSaver Commuter Ticket Scheme is a cost-reduction initiative for public transport. It offers employers the opportunity to make PRSI savings of up to 10.75%. Residents can also benefit from savings on their travel costs, with savings of between 28.5% and 52% possible due to tax, PRSI and USC savings. The ticket covers bus, rail, and the Luas tram system.

The scheme is open to residents who wish to participate. They can discuss the matter with their employer, who will then apply and purchase the ticket on their behalf.

The TaxSaver scheme is managed in conjunction with the Revenue Commissioners by the following transport providers:

- Dublin Bus
- Bus Éireann
- Luas
- Irish Rail
- Approved transport providers

Residents may obtain tickets as part of their salary package (salary sacrifice) in lieu of an annual cash bonus or as a benefit-in-kind. TaxSaver tickets are not subject to tax, PRSI or USC. It is important to note that residents are only liable to pay tax, PRSI, and USC on the portion of their salary that represents the actual remuneration. In addition, the employer is also responsible for calculating PRSI on the same basis.

The Mobility Management Plan Coordinator will be responsible for disseminating this information to the residents of the subject development, thereby affording them the opportunity to request this benefit at their place of employment.

- Update travel information

The Mobility Management Plan Coordinator will provide maps of the local area, indicating the nearest bus stop and train stations and the distance between the Subject Development and these points. Additionally, the Mobility Management Plan Coordinator will provide updated local train and bus maps and timetables.

This information will be displayed in strategic locations to facilitate understanding of the importance of choosing this mode of transport over the car. Furthermore, the Mobility Management Plan Coordinator will inform residents of future plans for the development of public transport routes in the area.

Residents of the area will be informed about online public transportation information systems, their use and the advantages that this entails.

- Monitoring of the Public Transport service

It is the responsibility of the Mobility Management Plan Coordinator to conduct regular assessments of the public transport service in order to ascertain the quality of the service provided. In order to ensure the provision of high-quality public transport services, the coordinator must consider a number of factors, including fare, travel time, vehicle conditions, and frequency.

The Mobility Management Plan Coordinator may also engage in lobbying activities with the public transport operators in order to ensure the continued provision of a high level of service on the public transport routes serving the development.

19.11.2 Proposed Development- Plot 2 (St. Mochta's LRD)

Construction Stage

Refer to **Section 19.11.1** above.

Operational Stage

Refer to **Section 19.11.1** above.

19.11.3 Cumulative

Construction Stage

Refer to **Section 19.11.1** above.

Operational Stage

Refer to **Section 19.11.1** above.

19.12 Material Assets (Waste) (Chapter 15)

The mitigation measures discussed are applicable to Plot 1 and Plot 2.

Incorporated Design Mitigation

The following measures have been incorporated into the design:

- Buildings have been designed with material efficiency in mind. This involves reducing the amount of materials used in the building fabric and minimising the waste during construction;
- Opportunities to achieve on-site and off-site reuse and recycling of waste have been identified; and
- Dedicated, secure waste segregation areas have been selected for the duration of the enabling works. The dedicated waste storage areas within the waste segregation points will house all bins and skips for the storage of segregated construction waste generated. All containers will be marked with clear signage which will identify which waste types are to be placed into each container.

Construction Phase Mitigation

The waste management objective will be to prevent waste arising in the first place, and to re-use, recycle or recover waste materials where possible. The following mitigation measures are recommended for the construction phase of the Proposed Development regarding waste management:

- Waste materials will be separated at source and will follow the Resource and Waste Management Plan (RWMP) and Contractor(s) Construction Environmental Management Plan (CEMP);
- Prior to the commencement of the construction phase detailed calculations of the quantities of topsoil, subsoil and green waste will be prepared, and soils will be tested to confirm they are clean, inert or non-hazardous;
- A policy of 'as needed' ordering and strict purchasing procedures will be implemented to prevent waste arisings as far as possible;
- The Contractor will vet the source of aggregate, fill material and topsoil imported to the site in order to ensure that it is of a reputable origin and that it is "clean" (i.e., it will not contaminate the environment).
- The Contractor and/or Council will implement procurement procedures to ensure that aggregate, fill material and topsoil are acquired from reputable sources with suitable environmental management systems as well as regulatory and legal compliance;
- The waste materials generated during the construction phase will be stored in suitably size receptables and transferred offsite for appropriate processing, recycling and recovery;
- Waste materials generated from the construction phase that are unsuitable for reuse or recovery will be separately collected;
- Disposal of construction generated wastes will be considered a last resort and only after recycling or recovery options have been ruled out;
- A suitably competent and fully permitted waste management company will be employed to manage waste arising for the construction phase. The appointed waste contractor must have the relevant authorisations for the collection and transport of waste materials, issued by the National Waste Collection Permit Office (NWCPO);
- All waste materials will be transported to an appropriately authorised facility, which must have the relevant authorisations for the acceptance and treatment of the specific waste streams, i.e., a Certificate of Registration (COR) or a Waste Facility Permit (WFP) as granted by a Local Authority, or a Waste/Industrial Emission Licence as granted by the Environmental Protection Agency;

- It is not envisaged that there will be any hazardous waste generated throughout the construction works however, in the event that hazardous soil, or historically deposited waste is encountered during the site bulk excavation phase, the contractor will notify Fingal County Council and provide a Hazardous / Contaminated Soil Management Plan, to include estimated tonnages, description of location, any relevant mitigation, destination for disposal/treatment, in addition to information on the authorised waste collector(s). Only authorised facilities will be used and as a result of this, the potential impacts at any authorised receiving facility sites will have been adequately assessed and mitigated as part of the statutory consent procedures;
- Waste generated by construction workers will be stored in wheelie bins on site and it will be collected by an appropriately authorised waste collector. All wastes generated on site will be sent for recycling, recovery, or disposal to a suitably licensed or permitted waste facility; and
- All waste quantities and types will be recorded and quantified, and records will be retained onsite for the duration of the construction phase.

These mitigation measures will ensure that the waste arising from the construction phase of the Proposed Development is dealt with in compliance with provisions of the Waste Management Act 1996, as amended, associated Regulations and Litter Pollution Act 1997, and The National Waste Management Plan for a Circular Economy 2024-2030. The mitigation measures will also ensure optimum levels of waste reduction, reuse, recycling and recover are achieved and will promote more sustainable consumption of resources.

The Contractor will have the responsibility to record resource and waste management at the site in line with the Resource and Waste Management Plan (RWMP). Some of the principal duties and responsibilities of this role include:

- Report to Project Manager on the management of resources and waste at the site;
- Identify all destinations for resources taken off-site;
- Address end-of-waste and by-product notifications with the EPA, where applicable;
- Maintain full records of all resources (both wastes and other resources) for the duration of the project;
- Delegate responsibility to sub-contractors, where necessary;
- Coordinate with suppliers, service providers and sub-contractors; and
- Prioritise waste prevention and resource salvage.

Operational Phase

As previously stated, an Operational Waste Management Plan (OWMP) has been prepared by Enviroguide (2025) for the Proposed Development. A waste strategy is presented in the OWMP which considers legal requirements, policies, and best management guidelines. This plan also demonstrates that the Waste Storage Area (WSA) has been incorporated within the design of the Proposed Development.

Implementation of the OWMP will ensure that a high level of recycling, reuse, and recover at the Proposed Development during the operational phase. All materials that are considered recyclable will be segregated and separated at source to reduce costs from the waste collector and ensure maximum diversion of material from landfill. The waste strategy presented in the OWMP will provide sufficient storage capacity for the estimated quantity of segregated waste. The designated WSA will provide sufficient room for the required receptacles in accordance with the details of this strategy.

As outlined in the OWMP, it is intended to ensure that the highest possible levels of waste reduction, waste reuse and waste recycling are achieved for the Proposed Development. Specifically, the

OWMP will aim to achieve waste prevention, maximum recycling and recovery of waste with a focus on diversion of waste from landfill wherever possible.

It will be a condition of any management contract at the development that adequate budgets are in place for the provision of all required waste management services including a four-bin system for the collection of separate Organic (food) Waste, Dry Mixed Recyclables (DMR), Mixed Municipal Waste (MMW) / General Waste and Glass from the apartments and duplexes.

The Management Company appointed will be required to continually monitor the performance of the waste management system. This will include routine visual checks of the WSAs to ensure that all bins collected are returned to the WSAs and to ensure this area is maintained so as not to cause any environmental nuisance to residents. These checks will also assess if the bins are in good condition or need to be replaced where damage is identified.

Provision for bin cleaning will be included in the contract with the waste management contractor appointed to ensure the provision of bin cleaning services or replacement of clean bins by the waste contractor.

The Management Company will review all annual waste reports from the Waste Collection Company appointed to ensure that the waste collected is in line with the European recycling targets. Where poor recycling rates are noted information leaflets will be recirculated to all residents which will include information on what materials can be recycled and the waste streams that can be placed in bins. Residents will also be reminded of legal obligations where applicable. Further communication strategy to engage tenants and owner occupiers in good waste management practices will be adopted if deemed necessary.

Each appointed Waste Contractor must hold a valid waste collection permit to transport waste which is issued by the National Waste Collection Permit Office (NWCPO). Waste treatment facilities must also be appropriately permitted (Waste Facility Permit or Certificate of Registration) or licensed by the Local Authority or Environmental Protection Agency to accept the waste. The Management Company appointed will be responsible for ensuring that all Waste Contractors hold the appropriate authorisations.

The OWMP has reviewed policy alongside best practice guidance and recommendations for sustainable waste and recycling management arrangements for the Proposed Development and ensures a high level of recycling, reuse and recovery at the development and also ensures that waste management is carried out in accordance with the requirements of the Fingal Development Plan 2023-2029 and Ireland's National Waste Policy.

19.13 Material Assets (Utilities) (Chapter 16)

19.13.1 Proposed Development - Plot 1 (Luttrellstown Gate Phase 2)

Construction Stage

All possible precautions shall be taken to avoid unplanned disruptions to any services or utilities during the construction phase of the Proposed Development. It should be noted that a number of mitigation measures proposed in other EIAR chapters are also of relevance to Material Assets and should be referred to when reading this EIAR.

The construction phase mitigation measures include avoidance, reduction and remedy measures as set out within the Development Management Guidelines document. The design and construction of the necessary service infrastructure will be in accordance with relevant codes of practice and guidelines. This is likely to mitigate any potential impacts during the operational phase of the Proposed Development. However, routine maintenance of the site services will be required from time to time. As such, any mitigation measures will be advised by the relevant service provider.

A detailed Construction, Demolition and Waste Management Plan will be developed by the Main Contractor post planning stage.

Operational Stage

Operational waste will be managed by a designated management company on site and the appointed licenced waste contractor which will ensure the sustainable management of domestic and commercial waste arising from the development in accordance with legislative requirements and best practice standards.

19.13.2 Proposed Development- Plot 2 (St. Mochta's LRD)

The mitigation measures are as per Plot 1 above.

19.13.3 Cumulative

The mitigation measures are as per Plots 1 and 2 above.

19.14 Cultural Heritage (Archaeological and Architectural) (Chapter 17)

19.14.1 Proposed Development - Plot 1 (Luttrellstown Gate Phase 2))

Construction Stage

Given the fragile nature of the surviving archaeological deposits, anticipated changes to the water table from construction and its potential negative impact on the remaining archaeological deposits, the two areas of archaeological interest, AA1 and AA2, will be preserved by record, i.e. subject to full archaeological excavation. The figure below shows the proposed excavation cuttings (hatched in purple) to resolve the areas of archaeological interest, including a 5m exclusion zone from the edge of the identified archaeology.

The full archaeological excavation will be carried out in advance of construction, under licence to the National Monuments Service (NMS) (Department of Housing, Local Government and Heritage (DHLGH)), subject to their approval of a licence application and method statement. Licences can take up to 4 weeks to procure.

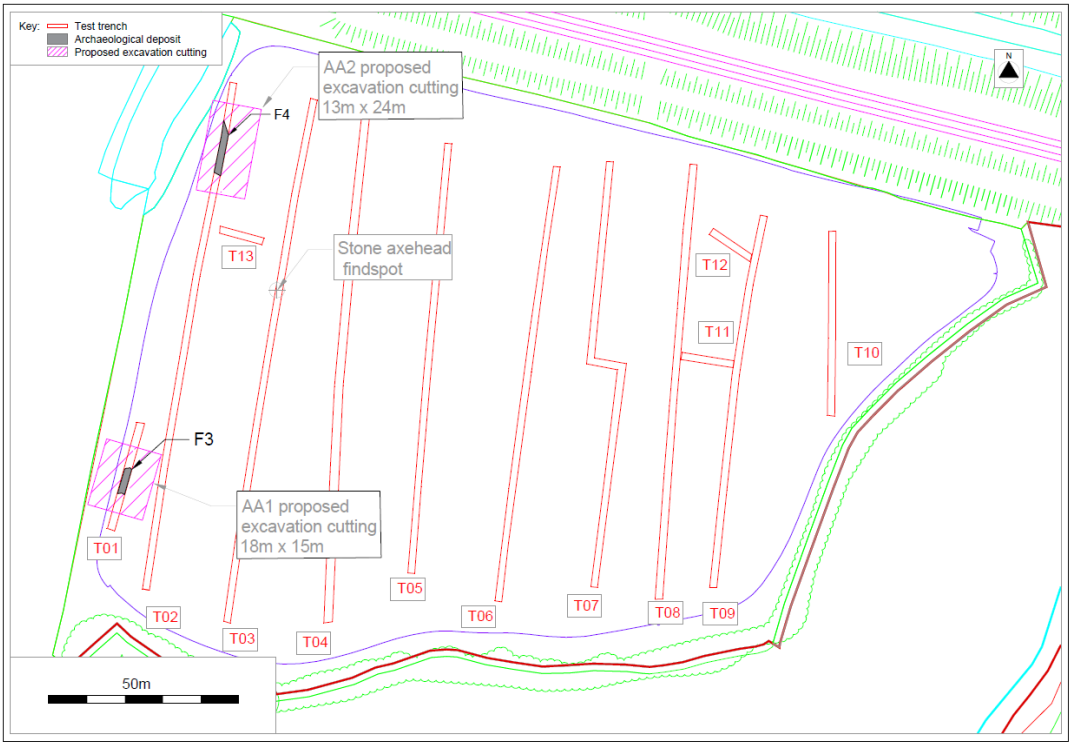

Figure 19.4 Archaeological Areas (AAs) 1 and 2 that will be fully excavated

Operational Stage

All cultural heritage issues will be resolved by mitigation during the pre-construction phase or construction phase, in advance of the operational phase. No operational phase impacts were identified for the proposed development.

19.14.2 Proposed Development- Plot 2 (LRD Scheme)

Construction Stage

Given the size of the existing playing pitches and the negligible to low potential for the survival of below-ground archaeological remains, Plot 2 will be further assessed prior to construction in form of additional test excavation. This will be carried out under licence to the National Monuments Service (NMS) (Department of Housing, Local Government and Heritage (DHLGH)), subject to their approval of a licence application and method statement. Licences can take up to 4 weeks to procure.

Operational Stage

All archaeological issues will be resolved by mitigation during the pre-construction phase or construction phase, in advance of the operational phase.

19.14.3 Risk Management (Major Accidents & Disasters) (Chapter 18)

Construction Phase

The mitigation measures relevant to each environmental factor outlined in Chapters 5 – 17 of the EIAR, as well as the CEMP, will be implemented during the Construction Phase of the development and will collectively mitigate the risk of major accidents and disasters during this time.

The Construction Phase of the Proposed Development will be carried out in accordance with best practice site management measures relating to health and safety and emergency response. These measures are described in the CEMP

Operational Phase

No mitigation or monitoring measures are proposed specific to reducing the risk of major accident / disaster during operation.