6.6 Description of the Existing Environment

6.6.1 Habitats

The EIAR Site Boundary is accessed from the south-east of the site via an existing access gate. The site is an agricultural greenfield site separated into seven fields of variable size and form, separated by mature hedgerows and stone walls.

The fields are best categorised as ***Dry Calcareous and Neutral Grassland (GS1)/Improved agricultural grassland (GA1)*** (Plates 6-1, 6-2 & 6-3)**.** While these fields are primarily used for agricultural purposes, some areas of GS1 were more species rich. Dominant species recorded throughout this grassland included common knapweed (*Centaurea nigra*), red clover (*Trifolium pratense*), silverweed (*Potentilla anserina*), ribwort plantain (*Plantago lanceolata*), meadow buttercup (*Ranunculus acris*), meadow foxtail (Alopecurus pratensis), hawkbit spp. (*Leontodon* spp.) and sweet vernal grass (*Anthoxanthum odoratum*). Other species occasionally recorded throughout the sward included bracken (*Pteridium* spp.), hedge parsley (*Torilis japonica*), primrose (*Primula vulgaris*), selfheal (*Prunella vulgaris*), tormentil (*Potentilla erecta*), tufted vetch (*Vicia cracca*), enchanters' nightshade (*Circaea lutetiana*), oxeye daisy (*Leucanthemum vulgare*) and pignut (*Conopodium majus*). Some areas within these fields showed indications of recent scrub removal, within which there was greater diversity of the species listed above. However, these areas also supported high levels of immature blackthorn (*Prunus spinosa*) regrowth and bracken, indicating encroachment of the scrub which had been cleared in recent years.

The south-eastern most corner of the site contained a small area of calcicole species (2mx2m) including quaking grass (*Briza* sp.), devil's bit scabious (*Succisa pratensis*), lady's bedstraw (*Galium verum*) and eyebright (*Euphrasia sp.*). A small population of fragrant orchid (*Gymnadenia conopsea*) was also recorded here. Bracken had also started to encroach on this area of grassland (Plate 6-4)**.**

Existing field access points and gated entrances area were categorised as ***Buildings and artificial surfaces (BL3)*** with some poached areas evident from livestock categorised as ***Spoil and bare ground (ED2).***

The site is bounded by ***Stone walls (BL1)*** in association with a series of ***Hedgerows (WL1)*** dominated by hazel (*Corylus avellana*) along the eastern roadside boundary (Plates 6-5 & 6-6). Blackthorn (*Prunus spinosa*), hazel, and hawthorn (*Crataegus monogyna*) occur within the hedgerows surrounding the north, south and western boundaries with bracken and bramble ***Scrub (WS1)*** growing along the field boundaries in places. Occasional individual ash trees (Plate 6-6) occur throughout the dense hedgerow network. Mullein (*Verbascum* sp.) and burdock (*Arctium minus*) were recorded along the northern hedgerow boundary. A small stretch of ***Treelines (WL2)*** was recorded along the western boundary of the easternmost field.

A habitat map of the EIAR Site Boundary is provided in Figure 6-4.

Plate 6-1 Dry Calcareous and Neutral Grassland (GS1) recorded within the site.

Plate 6-2 Improved agricultural grassland (GA1) within the site.

Plate 6-3 Dry Calcareous and Neutral Grassland with bracken and scrub encroachment.

Plate 6-4 Dry Calcareous and Neutral Grassland (calcicole species) with bracken encroachment.

Plate 6-5 Hedgerow habitat with adjacent scrub was common throughout the site.

Plate 6-6 Stone walls were often recorded within hedgerow habitats.


Map Legend
Site boundary
Stockpile Area
Office, Weigh Bridge, Wheelwash
Stone walls and other stonework
Hedgerows
Treelines
Buildings and artificial surfaces
Dry calcareous and neutral grassland
Dry calcareous and neutral grassland/Scrub
Scrub
Dry Calcareous and Neutral Grassland/
Improved agricultural grassland
RECEIVED: 09/01/2024
N
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Drawing Title
Habitat Map
Project Title
Lomaunaghbaun Quarry,
Lomaunaghbaun, Tuam, Co. Galway
Drawn By
DM
Checked By
SC
Project No.
211034
Drawing No.
6-4
Scale
1:2,000
Date
30/11/2023
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6.6.2 Faunal Species

6.6.2.1 Badger

While some mammal trails and snuffle holes were recorded within the site, no indication of significant badger activity was recorded and no setts were identified within or adjacent to the EIAR Site Boundary. The EIAR Site Boundary does, however, provide suitable supporting habitat for this species and it is likely to occur within the site, at least on occasion.

6.6.2.2 Marsh Fritillary Surveys

As noted in section 6.6.1 above a small number of devil's-bit scabious plants were recorded in the south-eastern most corner of the site. This area was searched for larval webs during the surveys undertaken in August and no larval webs were recorded.

6.6.2.3 Birds

Bird that were recorded during the walkover surveys included species that are typical of rural agricultural lands such as chaffinch (*Fringilla coelebs*), wood pigeon (*Columba palumbus*), rook (*Corvus frugilegus*), blackcap (*Sylvia atricapilla),* wren (*Troglodytes troglodytes)* and blackbird (*Turdus merula*).

No species listed under Birds of Conservation Concern Irelands (BOCCI) Red List or under Annex I of the EU Birds Directive were identified during the site visits, and no significant supporting habitat for such species exists within the site.

6.6.2.4 Bats

6.6.2.4.1 *Bat Habitat Appraisal*

During the walkover survey features and habitats within the EIAR Site Boundary were assessed for their suitability to support bats. No man-made structures (buildings etc.) with the potential to support roosting bats were present within the site; however, trees within the site were assessed for the potential to support a roost.

Habitats within the site, in particular the hedgerows, were evaluated as having *Moderate* suitability for commuting and foraging bats i.e. continuous habitat connected to the wider landscape that could be used by bats for commuting/foraging such as lines of trees and scrub, water, grassland or linked back gardens (Collins, 2016). Areas of grassland and low stone walls were evaluated as having *Low* suitability for commuting and foraging bats i.e. habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream but isolated (Collins, 2016).

With regard to roosting bats, habitat features within the site, including trees and hedgerows, were assessed as having *Negligible* roosting potential i.e. *Negligible* habitat features likely to be used by roosting bats (Collins, 2016). Overall, trees within the site were composed of individual mature ash (*Fraxinus excelsior*) within hedgerow and stone wall habitats and lacked features that could support roosting bats, including cracks, hazard beams, cankers, rot holes, and fissures in the bark etc. Stone walls were assessed as having *Low* roosting potential i.e. a structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (Collins, 2016).

6.6.2.4.2 *Dusk Activity Survey*

A dusk activity survey which included a walked transect survey of the Site was carried out on the 9th of August 2022.

In total, 132 bat passes were recorded between the dusk activity and walked transect survey. Activity was dominated by common pipistrelle (*Pipistrellus pipistrellus*, n=73), followed by Soprano pipistrelle (*Pipistrellus pygmaeus*, n=53). Leisler's bat (*Nyctalus leisleri*, n=6) were also recorded. All three bat species are common and widespread across Ireland. Plate 6-7 shows the total bat species composition recorded at the site. The transect route and results are shown in Figure 6-5.

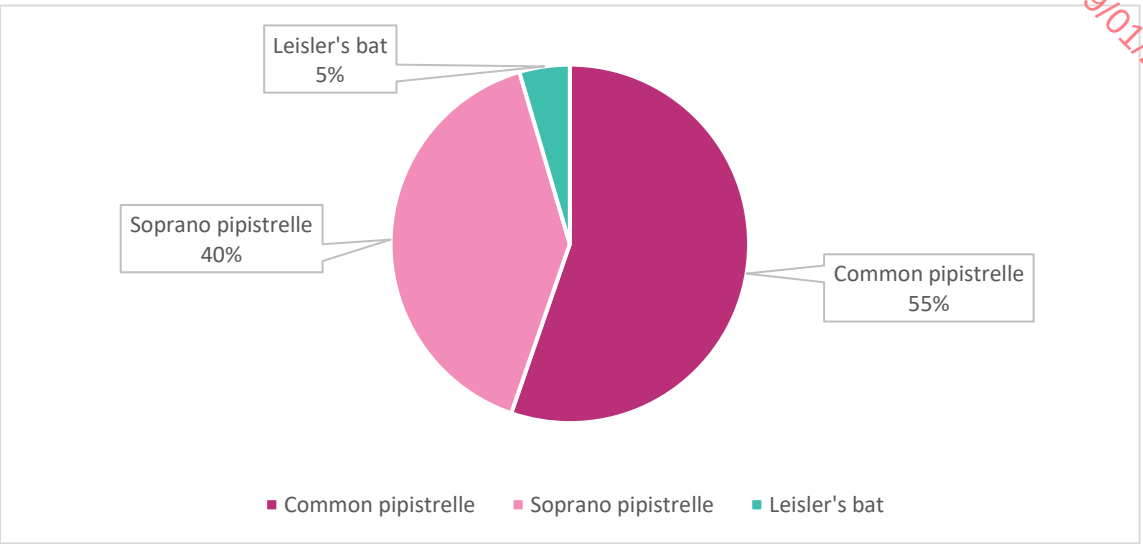

Plate 6-7 total bat species composition recorded at the site during transect.

6.6.2.4.3 Static Detector Survey

Static bat detectors were deployed on the site at two locations within hedgerow habitats (see Figure 6.5), based on likely areas of bat activity, for a total of 14 nights in August 2022. One detector was placed on the northwestern boundary, which was composed of mixed species hedgerow, while the second was placed in the southern section of the site, adjacent to hedgerow and scrub habitat.

These detectors allowed for a specified look into species composition, commuting and foraging activities within the site. All identified calls were also manually verified. In total 8,630 bat passes were recorded.

Analysis of the detector recordings positively identified five bats to species level with Myotis genus also present. Bat passes at the site were dominated by common pipistrelle (*Pipistrellus pipistrellus*) (n=4,808), followed by Soprano pipistrelle (*Pipistrellus pygmaeus*) (n=3,651). Leisler's bat (*Nyctalus leisleri*) (n=101), *Myotis spp.* (n=35) and Brown long-eared bat (*Plecotus auritus*) (n=34) were recorded less frequently, consisting of 1% of total passes recorded or less (Plate 6-7). One Lesser horseshoe bat (*Rhinolophus hipposideros*) pass was recorded at the site.

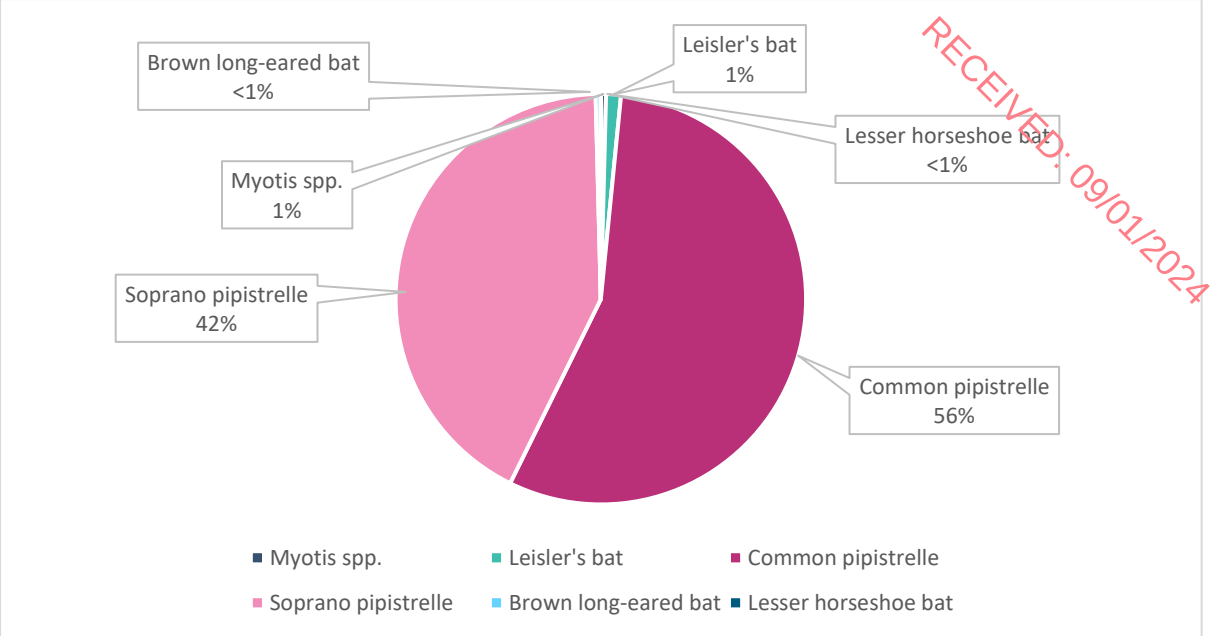

Plate 6-8 Bat species composition

Analysis of the detector recordings also highlighted the total bat passes per night. Species composition per night is shown in Plate 6-9. Activity varied between nights; however, species composition was similar throughout the deployment, with common and soprano pipistrelle predominant.

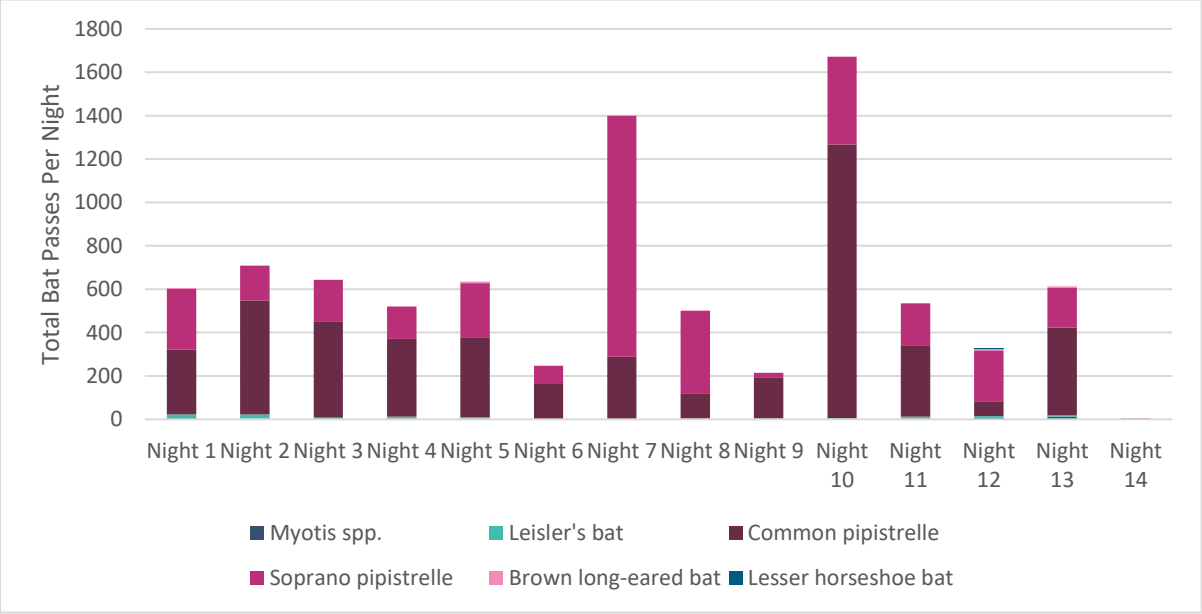

Plate 6-9 Total Bat Passes Per Night

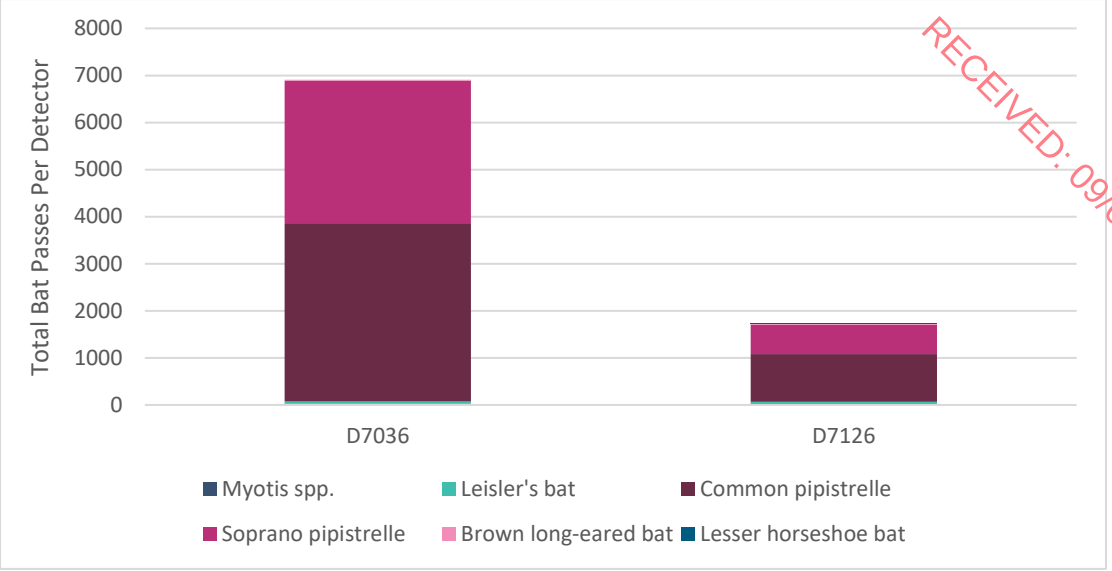

Plate 6-10 Total Bat Passes Per Detector

Detector D7126 was located in the northwestern boundary of the site, beyond which there are much fewer hedgerows or other linear features, which may act as commuting corridors for bats, than where detector D7036 was located. This may account for the difference in the activity indicated in Table 6-10.

Map Legend

- EIAR Site Boundary
- Static detectors
- Dusk Transect

Manual ID - Dusk

- Leisler's bat
- Common pipistrelle
- Soprano pipistrelle

N

Drawing Title

Bat Map

Project Title

Lomaunaghbaun Quarry

Drawn By	Checked By
NS	PD
Project No.	Drawing No.
211034	6-5
Scale	Date
1:2,000	2023-12-14

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6.6.3 Importance of Ecological Receptors

Table 6-10 lists all identified receptors and assigns them an ecological importance in accordance with the Guidelines for Assessment of Ecological Impacts of National Road Schemes (NRA, 2009). This table also provides the rationale for this determination and identifies Key Ecological Receptors (KERs).

Table 6-10 Evaluation of Ecological Receptors

Habitat and Geographic Importance	KER Y/N	Rationale
European and National Sites		
European Sites: › Levally Lough SAC (000295) › Lough Corrib SAC (000297) › Williamstown Turloughs SAC (002296) › Lough Corrib SPA (004042) *International Importance*	*Yes*	These designated sites have been assigned International Importance as they are sites designated as part of the Natura 2000 Network under the EU Habitats Directive. A potential pathway for indirect effects on these European Sites, via the deterioration of water quality resulting from the percolation of pollutants to groundwater during the construction and operational phases of the Proposed Development, was identified. **Therefore, these European Sites are included as KERs.**
National Sites › Drumbulcaun Bog pNHA [000263] › Levally Lough pNHA [000295] › Knockavanny Turlough pNHA [000289] › Kiltullagh Lough pNHA [001282] › Boyounagh Turlough pNHA [001237] › Kilkerrin Turlough pNHA [001279] *National Importance*	*Yes*	These pNHAs have been assigned National Importance as they are sites proposed to be designated as Natural Heritage Areas (NHAs). These pNHAs feature habitats which are dependent on groundwater quality such as turloughs and fens and they are located within the same groundwater catchment as the Proposed Development. A potential pathway for indirect effects on these sites, via the deterioration of water quality resulting from the percolation of pollutants to groundwater during the construction and operational phases of the Proposed Development, was identified. **Therefore, these pNHAs are included as a KERs.**
Habitats		
› Buildings and artificial surfaces (BL3) › Stone wall (BL1) › Spoil and bare ground (ED2) › Scrub (WS1) Local Importance (*lower value*)	*No*	These habitats, although some containing small areas of semi-natural habitat that are of some local importance for wildlife, are common and widespread in the local and wider landscape and are highly modified. Although there will be some loss of these habitats or indirect impacts, these habitats are **not** included as KERs.
› Dry calcareous and neutral grassland (GS1) *Local Importance (higher value)*	*Yes*	Dry calcareous and neutral grassland (GS1) was recorded throughout the site with species richness varying throughout as described in section 6.6.1 above. This habitat is considered to be relatively species rich, uncommon in the wider area and provides supporting habitat for local pollinator species. As such this habitat has been assigned Local Importance (higher value), as per NRA 2009.

Habitat and Geographic Importance	KER Y/N	Rationale
		To facilitate the Proposed Development, much this habitat will be lost. **Therefore, this habitat is included as a KER.**
› Hedgerow (WL1) Local Importance (*higher value*)	*Yes*	Hedgerow habitat has been assigned as of Local Importance (*higher value*) as it contains high biodiversity value and helps maintain links and ecological corridors between features of higher ecological value and are likely to be utilised by protected faunal species such as bats. To facilitate the Proposed Development, sections of this habitat will be lost. **Therefore, this habitat is included as a KER.**
› Treeline (WL1) Local Importance (*higher value*)	*No*	This habitat has been assigned as of Local Importance (*higher value*) as it contains high biodiversity value and helps maintain links and ecological corridors between features of higher ecological value and are likely to be utilised by protected faunal species. There will be no loss of this habitat as a result of the Proposed Development. Therefore, this habitat is **not** included as KERs.
› Aquatic receptors Local Importance (*higher value*) to International Importance.	*Yes*	While no watercourses or drainage ditches were identified within the EIAR Site Boundary, the site is located within the Clare-Corrib groundwater catchment and in an area of high vulnerability to contamination. Several European and National Sites are located within the same groundwater body (GWB), a catchment which has a high degree of interconnection between groundwater and surface water due to large areas of karst. There is, therefore, potential for indirect effects on surface and groundwater systems via deterioration of water quality arising from the construction and operation of the Proposed Development. The potential for significant effects on aquatic species, including otter, is restricted to indirect effects on their habitat resulting from water pollution (as noted above). **Therefore, Aquatic receptors are included as a KER.**
Fauna		
› Birds Local Importance (*higher value*)	*Yes*	Bird species recorded were common species that are typical of the habitats in the wider area of the site. The site does not provide significant supporting habitat for bird species listed on Annex I of the EU Birds Directive or on the BOCCI red list. However, hedgerow and scrub

Habitat and Geographic Importance	KER Y/N	Rationale
		habitats within the site provides suitable nesting and foraging habitat for populations of common bird species of Local Importance (*higher value*). As there will be loss of these habitats, **birds are included as a KER**.
› Badger Local Importance (*higher value*)	*No*	No indications of badger were identified within or adjacent to the EIAR Site Boundary, including setts. While scrub and hedgerow habitats provide potential suitable habitat and sections are to be removed to facilitate the Proposed Development, no indication of setts was identified, and these habitats are common in the wider landscape. Therefore, badger are **not** included as a KER.
› Marsh Fritillary Local Importance (*higher value*)	*No*	Whilst a very small area of Devils bit scabious, the food plant for larval marsh fritillary, was recorded in the southern eastern corner of the EIAR Site Boundary, no larval webs were identified. Considering the few recordings of Devils bit scabious, and the absents of larval webs, marsh fritillary are **not** included as a KER
› Other faunal species Local Importance (*higher value*)	*No*	No species of conservation concern or protected under Annexes of the EU Habitats Directive were recorded. Although other common species may occur within the site, at least on occasion, no potential for significant effect has been identified on any other faunal species associated with the Proposed Development and are thus **not** included as KERs.
› Bats Local Importance (*higher value*)	*Yes*	All bat species in Ireland are protected under the Bonn Convention (1992), Bern Convention (1982) and the EU Habitats Directive (92/43/EEC). Additionally, in Ireland, bat species are afforded further protection under the Birds and Natural Habitats Regulations (2011) and the Wildlife Acts 1976-2019. The site offers only negligible to low roosting or foraging habitat. However, hedgerow within the EIAR Site Boundary provides moderate commuting and foraging habitat for bats. As there will be loss of hedgerow as a result of the development, as well as potential disturbance activities, **bats are included as a KER**

6.7 Ecological Impact Assessment

6.7.1 Do-Nothing Effect

If the Proposed Development were not to go ahead, the site would likely continue to be used as marginal agricultural grassland and habitats would likely not change from their current state.

6.7.2 Impacts during Construction Phase

The Proposed Development will be complete through three phases, each of which requiring varying degrees of habitat loss and form both the construction and operational phases of the development.

Initial site enabling works (Phase 1) for the Proposed Development will be minimal and will primarily be removal of topsoil and overburden. It is estimated that the site enabling works for the Proposed Development will take approximately 1 month.

Site enabling works will include:

- Preparation of site.
- Installation of new site entrance along with road reprofiling works on the L2232.
- Pouring of concrete for refuelling area foundation and foundation for processing plant and associated components;
- Construction of new drainage network and fuel/oil interceptor at refuelling area;
- Internal roadway installation; and
- Installation of a weighbridge, wheelwash and site office.

Minor excavations will be required for the installation of drainage pipework. It is proposed that excavated soil material will be reused onsite for the construction of berms around the site boundary.

6.7.2.1 Loss of Habitats & Flora

6.7.2.1.1 *Habitats of Local Importance (lower value)*

The construction phase of the Proposed Development will result in the loss of sections of habitats of Local Importance (Lower value). Loss of these habitats are not considered to be significant at any geographic scale as they are common and widespread in the locality and are of low biodiversity value. Consequently, their loss does not constitute a significant effect on biodiversity, and they are not considered further in this assessment.

6.7.2.1.2 *Habitats of Local Importance (higher value)*

The construction phase of the Proposed Development will not result in any loss of sections of hedgerow (assessed under operational impacts, see section 6.7.3). However, it will result in the loss of dry calcareous and neutral grasslands. Therefore, this habitat has been identified as a KER. The assessment in Table 6.11 considers the potential impact on this receptor during the construction and operational phase of the Proposed Development, due to the phased nature of the Proposed Development.

6.7.2.1.3 *Assessment of Potential Effects on Dry calcareous and neutral grassland (GS1) during construction*

Table 6-11 Potential for impact on Dry calcareous and neutral grassland (GS1).

Description of Effect	The construction and operational phases of the Proposed Development will involve the removal of topsoil and vegetation to enable the extraction of sand and gravel from the EIAR Site Boundary. Dry calcareous and neutral grassland (GS1) within the site was

	considered to be relatively species rich, particularly in areas associated with recent scrub clearance. The Proposed Development will result in the phased loss of approximately 5.5 ha of Dry calcareous and neutral grassland to facilitate both the construction and operational phases of the quarry, as such, this table assess both the construction and operational impacts of the Proposed Development on this habitat, which has been assigned Local Importance (higher value).
Characterisation of unmitigated effect	In the absence of mitigation, the direct loss of Dry Calcareous Grassland to facilitate both the construction and operational phases of the Proposed Development has the potential to be a permanent, significant, irreversible impact on a habitat of local Importance.
Assessment of Significance prior to mitigation	In the absence of mitigation, the loss of dry calcareous and neutral grassland as a result of the Proposed Development would have a significant effect at the local geographic scale.
Mitigation	In December 2023 the client identified additional lands in their ownership (a receptor site) which will be managed to promote the establishment of dry calcareous and neutral grasslands and to negate the loss of approximately 5.5ha of this habitat associated with the Proposed Development. These lands are shown in Figure 1-1 indicated in the technical note in **Appendix 6-1** of this EIAR and total 5.5 ha. A grassland management plan will be developed prior to construction of the Proposed Development and will be informed by up-to-date botanical surveys at both the existing and receptor sites. At a high-level grassland management and establishment will include the following: › The application of fertiliser or chemicals (pesticides, fungicides etc.) will cease on the lands of the receptor site; › Hay from the existing Proposed Development site will be cut in August/September and spread in the receptor site to ensure that floral diversity is similar between the two sites. › Prior to the spreading of hay the lands within the receptor site will be prepared by ploughing the existing turf. › The sward in these lands will be removed at least once a year, either by grazing (preferably sheep) or hay harvest. This should be undertaken at the end of the flowering season i.e. August/September In addition, the reinstatement plan detailed in Section 6.7.4 of this Biodiversity Chapter details the timings of the phased removal of Dry calcareous grassland and methods to be used to reinstate the site back to the current habitat types. The phased approach will enable the development to reseed sections of this habitat prior to proceeding to the next phase of the development, ensuring there is no complete loss of this habitat at any one time. Site enabling works will include scraping of topsoil and storing it as berms on the perimeter of the EIAR Site Boundary. As extraction works cease in a phased area of the development, this topsoil will be thinly spread over this entire area as part of reinstatement works, prior to site enabling of the next phase. The reinstated area will then be subject to the same grassland management as above. Furthermore, hay from the grassland established at the receptor site could also be used to supplement grassland reinstatement at the Proposed Development site.
Residual Effect following Mitigation	Following the implementation of mitigation measures noted above in relation to grassland management and the reinstatement plan as detailed in Section 6.7.4 of this Biodiversity Chapter, over time, the phased loss of approximately 5.5 ha of dry calcareous and neutral grassland will be restored within the EIAR Site Boundary.

	In addition, ex-situ grassland management will promote 5.5 ha of dry calcareous and neutral grassland approximately 4.5 km from the EIAR Site Boundary, increasing the range and coverage of this habitat in the wider environment. However, in the short term, the phased loss of 5.5ha of this habitat, would result in a significant residual effect at a local scale until such a time that the ex-situ grassland has established.

6.7.2.2 Potential Impacts on Aquatic Receptors

A potential pathway for indirect effects on aquatic receptors has been identified via deterioration of water quality via the percolation of pollutants into ground waters during the construction and operational phases of the Proposed Development. Therefore, aquatic receptors have been identified as KERs. The assessment in Table 6.12 considers the potential impact on these receptors during the construction phase of the Proposed Development.

Table 6-12 Potential for impact on aquatic receptors within the Clare-Corrib ground water catchment.

Description of Effect	**This section assesses the potential for significant effects on aquatic habitats (i.e., groundwater and watercourses) and their associated aquatic receptors including otter.** The construction phase of the Proposed Development will involve site enabling works and will include earth moving and levelling operations to facilitate the erection of buildings and processing plant associated with the quarry. While no surface water features such as streams or drainage ditches were recorded within or adjacent to the EIAR Site Boundary, the site is located within the Clare-Corrib groundwater body (GWB) which has a high degree of interconnection between groundwater and surface water systems (Geological Survey, 2004). The EIAR Site Boundary is also located within an area where ground water is highly vulnerable to contamination. Several European and National Sites which are designated for water dependant features of interest are located within this GWB. Taking a precautionary approach and in the absence of best practice and mitigation, there is potential for impacts on groundwaters, surface waters, as well as European and National sites and their associated aquatic receptors, via the deterioration of water quality arising from the percolation of pollutants into ground waters during the construction phase of the Proposed Development. **Note: Whilst this impact assessment is in the habitats section, it also assesses the impact of the Proposed Development on aquatic species, including otter.**
Characterisation of unmitigated effect	In the absence of mitigation, the indirect effect on waterbodies and associated aquatic receptors during construction has the potential to be a short-term, moderate, reversible impact on aquatic habitats and the aquatic fauna they support, of local, National, and International importance.
Assessment of Significance prior to mitigation	In the absence of mitigation and following the precautionary principle, there is potential for the Proposed Development to result in significant indirect effects on aquatic habitats and associated aquatic species of Local (higher value) to International importance.
Mitigation	A detailed 'Schedule of Mitigations' for the Proposed Development is provided in Chapter 16 of this EIAR. This schedule provides details of how surface and ground water quality will be protected during the construction of the Proposed Development. In addition to this, specific mitigations are provided in relation to water quality in Chapter 8: 'Hydrology and Hydrogeology' of this EIAR. In addition, the Environmental Management Plan (EMP) that is provided as **Appendix 4.2** of the EIAR, provides the details of exactly how the measures will be implemented during construction.

Residual Effect following Mitigation	Following the implementation of the mitigation measures and best practice construction methods as detailed in the documents referenced above, there will be no significant residual effect on aquatic habitats or species as a result of the Proposed Development. The construction works associated with the Proposed Development will not cause any waterbodies to deteriorate, irrespective of their current condition, and will not in any way prevent any waterbodies from meeting the biological and chemical characteristics for good ecological status.

6.7.2.3 Impacts on Fauna

The construction phase of the Proposed Development has the potential to result in habitat loss/degradation and disturbance impacts on faunal species that are likely to be utilising the site but were not included as KERs, see Table 6-10. Given the extensive area of habitat that will remain undisturbed throughout the site during construction and the avoidance of the most significant areas of faunal habitat (hedgerows and treelines), no significant effects on non-KER faunal biodiversity is anticipated as a result of the Proposed Development. Therefore, these species were excluded from further assessment.

6.7.2.3.1 *Assessment of Potential Effects on Birds during construction*

Table 6-13 Assessment of Potential Impacts on Birds

Description of Effect	**Habitat Loss/ Degradation** The bird species recorded within the EIAR Site Boundary during the walkover surveys were common and widespread and the Proposed Development is unlikely to result in any significant loss or degradation of habitat for these species. There will be no loss hedgerow or treeline habitat during the construction phase of the Proposed Development.
	Disturbance/Mortality Activities associated with the construction phase of the Proposed Development include site enabling works which involve vegetation clearance and levelling, installation of offices and plant, and ancillary works. These activities all require the use of heavy machinery and increased anthropogenic activity. There is, therefore, potential for the Proposed Development to result in disturbance to breeding birds, potentially resulting in mortality to juvenile birds.
Characterisation of unmitigated effect	**Habitat Loss/ Degradation** There is no potential for significant habitat loss or deterioration for birds during the construction phase of the Proposed Development as there will be no loss of hedgerow or treeline, and the loss of scrub and grassland habitat is not considered to be significant for birds.
	Disturbance/Mortality Taking a precautionary approach, the potential for disturbance of birds as a result of construction activities is assessed as a slight short-term negative effect and the effect is reversible given the temporary nature of the works. The magnitude of this impact has the potential to be moderate if the works result in mortality of young birds in the nest.
Assessment of Significance prior to mitigation	**Habitat Loss/ Degradation** There is no potential for significant effects on bird species as a result of habitat loss from the construction works associated with the Proposed Development.
	Disturbance/Mortality There is potential for significant effects on bird species of local importance as a result of disturbance from the construction works associated with the Proposed Development.

Mitigation	**Habitat Loss/ Degradation** No mitigation required.
	Disturbance/Mortality Vegetation removal will be undertaken in line with the Wildlife Act 1972 (as amended). Disturbance limitation measures will be adhered to, which include the following: › All plant and equipment for use will comply with Statutory Instrument No 359 of 1996 "European Communities (Construction Plant and Equipment) (Permissible Noise Levels) Regulations 1996". › Plant machinery will be turned off when not in use. › Operating machinery will be restricted to the proposed works site area. › Vegetation removal will be done so in line with the Wildlife Act 1976 (as amended) and will not be undertaken between the bird nesting season (1st March – 31st August)
Residual Effect following Mitigation	Following the implementation of the mitigation measures as described above, there will be no significant residual effect on birds. The Proposed Development will not result in significant habitat loss for any bird species and provided mitigation measures outlined above are followed, there will be no significant impacts via disturbance/mortality

6.7.2.3.2 Assessment of the Potential Impacts on Bats during construction

Habitats within the site, in particular the hedgerows, were evaluated as having Moderate suitability for commuting and foraging bats.

The Proposed Development will be constructed during daylight hours only, and therefore, there is no potential for disturbance to foraging or commuting bats due to lighting. As no potential roosting habitat for bats was recorded within the EIAR Site Boundary, there is no potential for disturbance to roosting bats as a result of construction activities.

As there will be loss of grassland associated with the construction phase of the Proposed Development, there is potential for the loss of foraging habitat for bats of *Local Importance (higher value)* as a result of the Proposed Development, which is assessed below.

Table 6-14 Assessment of Potential Impacts on bats during construction as a result of loss of foraging habitat.

Description of Effect	Habitats within the site, in particular the hedgerows and grassland, were evaluated as having Moderate suitability for commuting and foraging bats. The construction phase of the Proposed Development will result in the loss of approximately 0.9 ha of grassland habitat. Therefore, the potential for loss of foraging habitat for bats during construction requires consideration.
Characterisation of unmitigated effect	The bat population utilising the site is considered of *Local Importance (Higher Value)* and are likely to be utilizing the grasslands for foraging. Taking a precautionary approach, the loss of approximately 0.9 ha of grassland habitat as a result of the construction phase of the Proposed Development is assessed as a short-term slight negative effect.
Assessment of Significance prior to mitigation	Due to the abundance of similar grassland habitat in the wider environment and the relatively small area of commuting habitat to be lost, there is no potential for the Proposed Development to result in significant effects on bat populations of *Local Importance (Higher value)* as a result of loss of foraging habitat.
Mitigation	No mitigation required.

	The reinstatement plan detailed in Section 6.7.4 of this Biodiversity Chapter details the timings of the phased removal of Dry Calcareous Grassland and methods to be used to reinstate the site back to the current habitat types will ensure that there is no long-term loss of foraging habitat as a result of loss of grassland habitat.
Residual Effect following Mitigation	No significant residual effects are predicted on bats as a result of loss of foraging habitat during construction.

6.7.3 Impacts during Operational Phase

The activities at the site during the operational phase will primarily be comprised of the excavation, washing, storage and distribution of sand. A sand processing plant, which will be installed in the south-east section of the site during the construction, will cater for the following operational activities associated with the Proposed Development:

- Feed Hopper,
- Screen Box,
- Conveyors,
- Sand Dewatering Unit,
- Settlement Tank
- Silt Buffer Tank,
- Recycled Water Holding Tank,
- Filter Press
- Crusher,
- Generators and Control Panels.

The proposed sand quarry will be excavated in three phases. These are detailed in detail in Section 4.4 of Chapter 4; Description.

Surface and storm water generated during the operational phase will be captured by the proposed drainage network within the confines of the site boundary, as detailed in Section 2.3.5 of Chapter 2 and Section 4.4.1.1 of Chapter 4 of this EIAR.

6.7.3.1 Loss of Habitats & Flora

6.7.3.1.1 *Habitats of Local Importance (lower value)*

The operational phase of the Proposed Development will be over a phased approach and will result in the loss of sections of habitats of Local Importance (Lower value). Loss of these habitats are not considered to be significant at any geographic scale as they are common and wide-spread in the locality and are of low biodiversity value. Consequently, their loss does not constitute a significant effect on biodiversity, and they are not considered further in this assessment.

6.7.3.1.2 *Habitats of Local Importance (higher value)*

The operational phase of the Proposed Development will result in the loss of sections of dry calcareous and neutral grassland and hedgerow, which have been assigned as KERs. A potential pathway for indirect effects on aquatic receptors has been identified via deterioration of water quality via the percolation of pollutants into ground waters during the construction and operational phases of the Proposed Development. Therefore, dry calcareous and neutral grassland, hedgerows and aquatic receptors have been identified as KERs.

The assessments of operational impacts and proposed mitigation in relation to dry calcareous and neutral grassland would be the same as those outlined in section 6.7.2.1.2 (dry calcareous and neutral grassland) above and therefore is not repeated below. Table 6-15 and Table 6-16 below considers the potential impacts on hedgerows and aquatic receptors during the operational phase of the Proposed Development.

6.7.3.2 Assessment of Potential Effects on aquatic receptors within the Clare-Corrib ground water catchment during operation.

Table 6-15 Potential for impact on aquatic receptors within the Clare-Corrib ground water catchment.

Description of Effect	**This section assesses the potential for likely significant effects on aquatic receptors including aquatic habitats (i.e., groundwater and watercourses), salmonids, lamprey, coarse fish, European eel, aquatic invertebrates, molluscs and other aquatic species**

	identified during the desk study and field surveys, and which are likely to occur in the wider environs of the Proposed Development. The operational phase of the Proposed Development will involve extraction and processing works typical of quarry operations. While no surface water features such as streams or drainage ditches were recorded within or adjacent to the EIAR Site Boundary, the site is located within the Clare-Corrib groundwater body (GWB) which has a high degree of interconnection between groundwater and surface water systems (Geological Survey, 2004). The EIAR Site Boundary is also located within an area where ground water is highly vulnerable to contamination. Several European and National Sites which are designated for water dependant features of interest are located within this GWB. As the proposed extraction works will be carried out above the groundwater table with no requirement for dewatering) no impacts on groundwater quantity (levels or flows) are expected. As such, potential for impacts as a result of the operational of phase of the Proposed Development is limited to groundwater quality arising from leaks and spillages from machinery and refuelling. Taking a precautionary approach and in the absence of best practice and mitigation, there is potential for impacts on groundwaters, surface waters, as well as protected sites and their associated aquatic receptors, via the deterioration of water quality arising from the percolation of pollutants into ground waters during the operational phase of the Proposed Development. **Note: Whilst this impact assessment is in the habitats section, it also assesses the impact of the Proposed Development on aquatic species associated with aquatic habitats.**
Characterisation of unmitigated effect	In the absence of mitigation, the indirect effect on waterbodies and associated aquatic receptors during operation has the potential to be a long-term, moderate, reversible impact on aquatic habitats and the aquatic fauna they support, of local, National, and International importance.
Assessment of Significance prior to mitigation	In the absence of mitigation and following the precautionary principle, there is potential for the Proposed Development to result in significant indirect effects on aquatic habitats and associated aquatic species.
Mitigation	It is proposed that the aggregate will not be extracted down to bare bedrock, thus leaving a protective layer over bedrock for the filtration of any surface water runoff that might be generated at the site during the extraction and following restoration phase. Water used in the extraction and processing associated with the Proposed Development will be contained in a closed loop system, as detailed in Chapter 4: Description of this EIAR. All water used for washing will be recycled back through the plant and reused on a continuous basis. As all water will be reused on a continuous basis within the material processing plant there will be no requirement for the installation of settlement ponds within the site and there will be no discharge of any water from processing to the wider environment. Water which will be used for dust suppression and at the wheel wash will be sourced from the proposed recycled water holding tank. Wastewater from the wheelwash will flow via new drainage infrastructure to a fuel /oil interceptor before flowing back to the recycled water holding tank. All site refuelling will be carried out in a designated refuelling area within the confines of the site boundary. The refuelling area will be located upon an area of hardstanding. Appropriate falls will be in the hardstanding area so as to direct any fugitive fuel spills to the fuel/oil interceptor which will be installed adjacent to the refuelling area. Sanitary wastewater generated during the site's operation will be contained within a storage receptacle which will be built within the staff welfare facility. This storage

	receptacle will be emptied on a regular basis or as needed by the appropriately licensed waste disposal company. Full details of mitigations measures to be implemented for the protection of water quality during the operational phase of the Proposed Development are provided in Section 8.5 of Chapter 8; Hydrology and Hydrogeology and in the EMP which is included as **Appendix 4.2** of the EIAR.
Residual Effect following Mitigation	Following the implementation of the mitigation measures and best practice construction methods as detailed in the documents referenced above, there will be no significant residual effect on aquatic habitats or species as a result of the Proposed Development. The Proposed Development will not cause any waterbodies to deteriorate, irrespective of their current condition, and will not in any way prevent any waterbodies from meeting the biological and chemical characteristics for good ecological status.

6.7.3.3 Assessment of Potential Effects on hedgerow habitat during operation.

Table 6-16 Potential for impact on hedgerows.

Description of Effect	To facilitate the operational phase of the Proposed Development, approximately 710m of hedgerow habitat dominated by hazel, blackthorn and hawthorn will be removed from within the site. Hedgerow habitat forming the boundary of the site will be retained. Reinstatement works will comprise hedgerow planting to replace loss of hedgerow during the extraction works along with site levelling and reseeding.
Characterisation of unmitigated effect	Hedgerow habitat is of a high biodiversity value in the local context and provides important connectivity to the wider landscape. Taking the abundance of this habitat in the wider environment, in the absence of mitigation, the loss of approximately 710m of hedgerow habitat has potential to result in a significant permanent negative effect at the local scale. This effect would be irreversible as these habitats are located within the Proposed Development footprint.
Assessment of Significance prior to mitigation	Hedgerow habitat is of a high biodiversity value in the local context and provides important connectivity to the wider landscape. Taking the abundance of this habitat in the wider environment, in the absence of mitigation, the loss of approximately 710m of hedgerow habitat has potential to result in a significant permanent negative effect on a receptor of Local Importance (higher value). This effect would be irreversible as these habitats are located within the Proposed Development footprint.
Mitigation	A phased restoration plan, as outlined in Section 6.7.4, has been prepared as part of this planning application and is fully detailed in Section 4.4.5 of Chapter 4; Description. The plan provides for the replanting of approximately 830m of hedgerow within the site and will replace the loss of approximately 710m.
Residual Effect following Mitigation	Following the implementation of the reinstatement plan as detailed in Section 6.7.4 of this Biodiversity Chapter, over time, the phased loss of approximately 710 m of dry hedgerow will be restored within the EIAR Site Boundary. However, in the short term, this phased loss of hedgerow, would result in a significant residual effect at a local scale until such a time that the site is fully restored post operation.

6.7.3.4 Impacts on Fauna

The operational phase of the Proposed Development has the potential to result in habitat loss/degradation and disturbance impacts on faunal species that are likely to be utilizing the site but were not included as KERs, see

Table 6-10. As supporting habitat for these species is common in the wider environment, any loss of habitat within the EIAR Site Boundary is not considered significant to non-KER species. Therefore, these species were excluded from further assessment.

The potential for significant effects on aquatic species, including otter, during operation is restricted to indirect effects on their habitat resulting from water pollution as no watercourses were recorded within the EIAR Site Boundary. This has been assessed in Table 6-13 above and is not repeated below.

6.7.3.4.1 Assessment of Potential Effects on Birds during operation

Table 6-17 Assessment of Potential Impacts on Birds during operation

Description of Effect	**Habitat Loss/ Degradation** The bird species recorded within the EIAR Site Boundary during the walkover surveys were common and widespread. During the operational phase of the Proposed Development there will be approximately 710m of hedgerow removed to facilitate the extraction works. Hedgerow habitat provides supporting foraging and roosting habitat for native bird species and thus, there will be a loss of bird habitat within the EIAR Site Boundary.
	Disturbance/mortality Activities associated with the operational phase of the Proposed Development include sand extraction and processing works. These activities all require the use of heavy machinery and increased anthropogenic activity. There is, therefore, potential for the Proposed Development to result in disturbance to breeding birds, potentially resulting in mortality to juvenile birds.
Characterisation of unmitigated effect	**Habitat Loss/ Degradation** Considering the abundance of hedgerow habitat in the wider environment, in the absence of mitigation, the loss of approx. 710m of bird nesting habitat constitutes a permanent significant negative effect at a local scale.
	Disturbance/mortality Taking a precautionary approach, the potential for disturbance of birds as a result of operational activities is assessed as a slight long-term negative effect and the effect is reversible given the limited life span of the development. The magnitude of this impact has the potential to be moderate if the works result in mortality of young birds in the nest.
Assessment of Significance prior to mitigation	**Habitat Loss/ Degradation** In the absence of mitigation, there is potential for significant impacts on birds of *Local Importance (higher value)* as a result of habitat loss.
	Disturbance/mortality There is potential for significant impacts on birds of *Local Importance (higher value)* as a result of disturbance/mortality from the operational works associated with the Proposed Development.
Mitigation	**Habitat Loss/ Degradation** A phased restoration plan, as detailed in Section 6.7.4, has been prepared as part of this planning application and is fully detailed in Section 4.4.5 of Chapter 4; Description. The plan provides for the replanting of approximately 830m of hedgerow within the site and will replace the loss of approximately 710m.
	Disturbance/mortality

	Disturbance limitation measures will be adhered to, which include the following: › All plant and equipment for use will comply with Statutory Instrument No 359 of 1996 "European Communities (Construction Plant and Equipment) (Permissible Noise Levels) Regulations 1996". › Plant machinery will be turned off when not in use. › Operating machinery will be restricted to the proposed works site area. › Vegetation removal will be done so in line with the Wildlife Act 1976 (as amended) and will not be undertaken between the bird nesting season (1st March – 31st August)
Residual Effect following Mitigation	Following the implementation of the mitigation measures as described above, there will be no significant residual effect on birds from habitat loss, disturbance and/or mortality.

6.7.3.4.2 *Assessment of the Potential Impacts on Bats during operation*

No bat roosts were identified within the Proposed Development site during the field surveys carried out in 2022.

The Proposed Development will be constructed during daylight hours only, and therefore, there is no potential for disturbance to foraging or commuting bats due to lighting. As no potential roosting habitat for bats was recorded within the EIAR Site Boundary, there is no potential for disturbance to roosting bats as a result of construction activities.

There will be approximately 710m of hedgerow habitat lost as a result of the operational phase of the Proposed Development, which offers suitable commuting and foraging habitat for bats. As there will be loss of this habitat during the operational phase of the Proposed Development, the potential for significant impacts on bats of *local importance (higher value)* due to habitat loss is assessed below.

Table 6-18 Potential impacts on commuting/foraging bats during the operational phase of the Proposed Development

Description of Effect	Hedgerows within and forming the boundary of the EIAR Site Boundary and grasslands within the site were assessed as having *Moder*ate suitability for foraging and commuting bats based on the results of the dedicated bat surveys undertaken. These habitats provide connectivity to the wider landscape and foraging habitat for bats. As there will be a loss of approximately 710m of hedgerow and 4.6 ha of grassland during the operational phase of the Proposed Development there is potential for impacts on bats as a result of habitat loss associated with the Proposed Development.
Characterisation of unmitigated effect	The bat population utilising the site is considered of *Local Importance (Higher Value)* and are likely to be utilizing the hedgerows and grasslands within the site for both foraging and commuting. Taking a precautionary approach and in the absence of mitigation, the loss of approximately 710m of hedgerow and 4.6 ha of grassland habitat as a result of the operational phase of the Proposed Development is assessed as a short-term moderate negative effect.
Assessment of Significance prior to mitigation	Due to the extent of foraging and commuting habitats to be lost as a result of the operational phase of the Proposed Development, there is potential for significant effects on bat species of *local importance (higher value).*

Mitigation	A phased reinstatement plan, as detailed in Section 6.7.4, has been prepared as part of this planning application and is fully detailed in Section 4.4.5 of Chapter 4: Description. The plan provides for the replanting of approximately 830m of hedgerow within the site and will replace the loss of approximately 710m. The plan also provides for the reinstatement of species rich grasslands throughout the site, ensuring there will be no long-term nett loss of this grasslands within the site.
Residual Effect following Mitigation	Following the implementation of the mitigation measures as described above, there will be no significant residual effect on bats. The Proposed Development will not result in significant long-term habitat loss for any bat species.

6.7.4 Site Reinstatement and Decommissioning Phase

Once quarry operations have ceased within the proposed extraction area, all site infrastructure including the processing plant, wheelwash, weighbridge and site office would be disassembled/demolished and removed off-site for disposal/recycling and /or sale.

All material intended for off-site disposal will be transported and disposed in accordance with the Waste Management Act 1996 and Environmental Protection Agency Act, 1992.

As the Proposed Development will be completed over three phases, there is opportunity for site reinstatement during the lifespan of the quarry. Phase 1 of the Proposed Development will include the erection of processing plant, wheel washes, and site offices, and will remain until the quarry is decommissioned. Phase 2 will include the first extraction activities within the site and will first require the scraping of topsoil and removal of hedgerows to expose the sands below. The scraped topsoil will be stored as berms on the permitter of the EIAR Site Boundary, as shown in the site restoration drawings in the planning pack of this application.

Excluding Phase 1 (site enabling), on completion of a phase and prior to the commencement of the next, the topsoil removed to facilitate extraction will be respread over the worked area. This will ensure that the same seed mix is used during reinstatement and is of local provenance. In addition, the proposed hedgerow planting proposed for a phased area will be undertaken prior to the commencement of the next phase.

The reseeded fields will then be subject to grassland management to ensure that the current habitat types are restored. This will involve annual removal of the sward, either by grazing (preferably by sheep) or hay harvest and ceasing any application of fertiliser or chemicals onto the fields.

Provided that the above is carried out and with time, this reinstatement of the site will result in the reestablishment of dry calcareous neutral grassland, in addition to the 5.5 ha managed off site during operation. In addition, as per the site reinstatement drawings, there will approximately 830m of hedgerow planted within the boundary of the site, negating the loss of this habitat with added compensation of approximately 17%.

6.7.5 Impacts on Designated Sites

6.7.5.1 Impacts on European Sites

In relation to European sites, an Appropriate Assessment Screening Report and Natura Impact Statement (NIS) have been prepared (and accompany this planning application) to provide the competent authorities with the information necessary to complete an Appropriate Assessment for the Proposed Development in compliance with Article 6(3) of the Habitats Directive. The Screening for Appropriate Assessment identified the following potential pathways for impact on European Sites:

- Indirect deterioration in water quality

The potential for likely significant effects from the Proposed Development were identified for the following European sites:

- Levally Lough SAC (000295)
- Lough Corrib SAC (000297)
- Williamstown Turloughs SAC (002296)
- Lough Corrib SPA (004042)

As a result, an Appropriate Assessment (AA) of the Proposed Development was required. Information to inform the AA is detailed in the NIS which is included as part of the planning application for the Proposed Development. The NIS concluded that:

'*Where the potential for any adverse effect on any European Site has been identified, the pathway by which any such effect may occur has been robustly blocked through the use of avoidance, appropriate design and mitigation measures as set out within this report and its appendices. The measures ensure that the construction, operation and decommissioning of the Proposed Development will not adversely affect the integrity of any European sites.*

'*Therefore, it can be objectively concluded that the Proposed Development, individually or in combination with other plans or projects, will not adversely affect the integrity of any European Site'.*

6.7.5.2 Impacts on Nationally Designated Sites

The following pNHAs were identified to be within the Likely Zone of Influence of the Proposed Development as they are located within the same groundwater catchment as the development site are designated for groundwater dependent habitats;

- Drumbulcaun Bog pNHA [000263]
- Levally Lough pNHA [000295]
- Knockavanny Turlough pNHA [000289]
- Kiltullagh Lough pNHA [001282]
- Boyounagh Turlough pNHA [001237]
- Summerville Lough pNHA [001319]
- Kilkerrin Turlough pNHA [001279]
- Belclare Turlough pNHA [000234]
- Killower Turlough pNHA [000282]

With the implementation of the mitigations and best practice procedures for both the construction and operational phases, as described in Table 6-11 and 6-13, respectively, which aim to negate potential impacts from deterioration of groundwater quality, as well as those in Section 8.5 of Chapter 8: Hydrology & Hydrogeology and in the EMP, no significant impacts on these National Sites are anticipated.

6.8 Cumulative Impact Assessment

The Proposed Development was considered in combination with other plans and projects in the area that could result in cumulative impacts on the Key Ecological Receptors (KERs) identified in Table 6.10 of this report, including European and Nationally Designated Sites. This included a review of online Planning Registers and served to identify past, present and future plans and projects, their activities and their predicted environmental effects. The projects considered are listed in Section 2.4.2 of Chapter 2 of this EIAR: Background.

6.8.1 Assessment of Plans

The following development plans have also been reviewed and taken into consideration as part of this assessment:

- Galway County Development Plan 2022 – 2028
- National Biodiversity Action Plan 2017-2021
- Draft National Biodiversity Action Plan 2023 - 2027

The review focused on policies and objectives that relate to designated sites for nature conservation, biodiversity and protected species. Policies and objectives relating to the conservation of peatlands and sustainable land use were also reviewed, particularly where the policies relate to the preservation of surface water quality. An overview of the search results with regard to plans is provided in Table 6-18.

Table 6-19 Assessment of plans

Plans	Key Policies and Objectives directly related to European Sites and Biodiversity in the Zone of Influence	Assessment of Potential Impact on European Sites
Galway County Development Plan 2022 – 2028	**NHB 1 Natural Heritage and Biodiversity of Designated Sites, Habitats and Species** Protect and where possible enhance the natural heritage sites designated under EU Legislation and National Legislation (Habitats Directive, Birds Directive, European Communities (Birds and Natural Habitats) Regulations 2011 and Wildlife Acts) and extend to any additions or alterations to sites that may occur during the lifetime of this plan. Protect and, where possible, enhance the plant and animal species and their habitats that have been identified under European legislation (Habitats and Birds Directive) and protected under national Legislation (European Communities (Birds and Natural Habitats) Regulations 2011 (SI 477 of 2011), Wildlife Acts 1976-2010 and the Flora Protection Order (SI 94 of 1999). Support the protection, conservation and enhancement of natural heritage and biodiversity, including the protection of the integrity of European sites, that form part of the Natura 2000 network, the protection of Natural Heritage Areas, proposed Natural Heritage Areas, Ramsar Sites, Nature Reserves, Wild Fowl Sanctuaries (and other designated sites including any future designations) and the promotion of the development of a green/ ecological network. **NHB 2 European Sites and Appropriate Assessment** To implement Article 6 of the Habitats Directive and to ensure that Appropriate Assessment is carried out in relation to works, plans and projects likely to impact on European sites (SACs and SPAs), whether directly or indirectly or in combination with any other plan(s) or project(s). All assessments must be in compliance with the European Communities (Birds and Natural Habitats) Regulations 2011. All such projects and plans will also be required to comply with statutory Environmental Impact Assessment requirements where relevant. **NHB 3 Protection of European Sites** No plans, programmes, or projects etc. giving rise to significant cumulative, direct, indirect or secondary impacts on European sites arising from their size or scale, land take, proximity, resource requirements, emissions (disposal to land, water or air), transportation requirements, duration of construction, operation, decommissioning or from any other effects shall be permitted on the basis of this Plan (either individually or in combination with other plans, programmes, etc. or projects. **NHB 4 Ecological Appraisal of Biodiversity** Ensure, where appropriate, the protection and conservation of areas, sites, species and ecological/networks of biodiversity value outside designated sites. Where appropriate require an ecological appraisal, for development	The development plan was comprehensively reviewed, with particular reference to Policies and Objectives that relate to the biodiversity, protected species and designated sites. The Proposed Development has been designed in order to avoid likely significant effect on biodiversity. Where the potential for adverse effect on biodiversity has been identified, mitigation will be implemented as prescribed within this chapter to ensure that there is no significant impact. Additionally, post reinstatement of the site after operation, there will be an overall net gain in hedgerow habitat within the site. Where pathways for effects on Designated Sites have been identified, mitigation shall also be implemented to ensure that there are no significant effects. No potential for negative cumulative impacts when considered in conjunction with the current proposal were identified.

Plans	Key Policies and Objectives directly related to European Sites and Biodiversity in the Zone of Influence	Assessment of Potential Impact on European Sites
	not directly connected with or necessary to the management of European Sites, or a proposed European Site and which are likely to have significant effects on that site either individually or cumulatively. **NHB 5 Ecological Connectivity and Corridors** Support the protection and enhancement of biodiversity and ecological connectivity in non-designated sites, including woodlands, trees, hedgerows, semi-natural grasslands, rivers, streams, natural springs, wetlands, stonewalls, geological and geo-morphological systems, other landscape features and associated wildlife areas where these form part of the ecological network and/or may be considered as ecological corridors in the context of Article 10 of the Habitats Directive.	
National Biodiversity Action Plan 2017-2021	**Objective 1 -** Mainstream biodiversity into decision-making across all sectors Developments in the area of Green Infrastructure are being initiated at the local and regional level. Green Infrastructure is a strategically planned network of natural and semi natural areas with other environmental features designed and managed to deliver a wide range of ecosystem services such as water purification, air quality, space for recreation and climate mitigation and adaptation. **Objective 4 -** Conserve and restore biodiversity and ecosystem services in the wider countryside **Target 6.2** - Sufficiency, coherence, connectivity, and resilience of the protected areas network substantially enhanced by 2020.	The action plans were comprehensively reviewed, with particular reference to Policies and Objectives that relate to the biodiversity, protected species and designated sites. The Proposed Development has been designed in order to avoid likely significant effect on biodiversity. Where the potential for adverse effect on biodiversity has been identified, mitigation will be implemented as prescribed within this chapter to ensure that there is no significant impact. Additionally, post reinstatement of the site after operation, there will be an overall net gain in hedgerow habitat within the site. Where pathways for effects on Designated Sites have been identified, mitigation shall also be implemented to ensure that there are no significant effects. No potential for negative cumulative impacts when considered in conjunction with the current proposal were identified.
Draft National Biodiversity Action Plan 2023 - 2027	Objective 2 - Meet Urgent Conservation and Restoration Needs Introduction to this Objective Outcome 2A: The protection of existing designated areas and species is strengthened and conservation and restoration within the existing protected are network are enhanced. Outcome 2B: Biodiversity and ecosystem services in the wider countryside are conserved	

6.8.2 Assessment of Projects

As described in Section 2.5.3 of the EIAR, relevant projects have been assessed in-combination with the Proposed Development and include planning applications in the vicinity of the site and within the zone of influence of all habitats and species considered in this report. These have been fully considered in this assessment, with Section 6.8.4 concluding on their potential for impact on biodiversity. Projects of particular relevance to this application included quarries in the vicinity of the Proposed Development site: These have been thoroughly reviewed and include:

- Application to develop a gravel and sand extraction operation together with ancillary site works and services including new site entrance and the future re-instatement of the site to farm land for grazing. **Planning Application 061788**. Granted (conditional)
- Application for development consisting of: The extraction, processing and sale of sand and gravel followed by restoration/rehabilitation of the land to agricultural use by the replacement of soils. The proposed extraction area is c. 4ha within the application area of 5.5ha. **Planning Application 191716**. Withdrawn
- Application for the change of extraction method of the quarry from digging to controlled blasting of the rock. **Planning Application 10848**. Refused.
- Application to retain a gravel and sand extractor operation and permission to complete extraction at the location and reinstate the lands to farm land for grazing. **Planning Application 043220**. Granted (conditional).
- Application of development consisting of; the extraction, processing and sale of sand and gravel followed by restoration / rehabilitation of the land to agricultural use by the replacement of soils. the application provides for the construction of a single track site access road from the proposed extraction area to the Shanvally to Lavally road, the L2222 and the installation of a wheel cleaner. The proposed extraction area is c.1.6ha within a total application area of 2.18ha. **Planning Application 201447**. Granted (conditional).
- Clonberne Windfarm. 11-turbine wind farm west of Clonberne village, Co Galway. **Not yet lodged.**

6.8.3 Existing Habitats and Land Uses

The potential for the Proposed Development to result in a cumulative loss or deterioration of habitats, or impact on protected species, was considered in relation to the existing land uses in the area. The dominant land uses in the wider area are agriculture, as well as turbary, forestry and quarries. These land uses have been considered in the cumulative assessment for the Proposed Development.

The proposed works are primarily located within marginal grasslands, which generally provide low value habitats for faunal species. Provided that construction best practice and mitigation measures are implemented, the potential for likely significant effect on biodiversity is not anticipated.

6.8.4 Conclusion of Cumulative Assessment

Following the thorough consideration of plans, projects and land uses, it is concluded that, the development will not result in any likely significant negative effects on biodiversity either within the site or outside it. Having considered other projects in the area including those listed above and in Section 2.5.3 of Chapter 2: Background, no potential for the development to contribute to any likely significant negative cumulative effects on biodiversity was identified when considered in-combination with other plans and projects.

In the review of the projects that was undertaken, no connection, that could potentially result in additional or negative cumulative impacts was identified. Neither was any potential for different (new)

impacts resulting from the combination of the various projects and plans in association with the development.

6.9 Conclusion

Following consideration of the residual effects (post mitigation) it is noted that the Proposed Development will not result in any long-term residual significant negative effects on of Biodiversity. Whilst the loss of dry calcareous grassland and hedgerow during both the construction and operational phases of development is assessed to be significant at a local scale, the reinstatement plan and proposed off-site grassland management plan detailed in this report ensures these habitats will be compensated for in-situ and ex-situ over time. No further significant effects on any other receptor is anticipated, at any geographic scale.

The potential for effects on the European Designated Sites are fully described in the Natura Impact Statement that accompanies this application.

Where potential for impacts on National Sites was identified above, robust mitigations and best practices have been incorporated into the design to prevent such pathways for effect. With the implementation of the mitigations detailed in this chapter as well as in Chapter 8: Hydrology & Hydrogeology and in the EMP, there is no potential for residual impacts on any National Site.

Provided that the Proposed Development is operated in accordance with the design, best practice and mitigation that is described within this application, significant individual or cumulative negative effects on Biodiversity are not anticipated at any geographic scale or on any of the identified KERs.