14. Material Assets – Agriculture

14.1 Introduction

As set out in Chapter 1 of this updated EIAR, this is an update to Chapter 14 of the EIAR submitted to An Bord Pleanála in October 2018 as part of the application for approval of the proposed N6 GCRR pursuant to Section 51 of the Roads Act 1993 (as amended) (the "Section 51 Application"). It forms part of the response to the request by ABP for further information in December 2023 where they (in addition to a number of other requests) requested GCC to "*Update the Environmental Impact Assessment Report*". It provides an appraisal of the Project under the heading of material assets - agriculture. Where there have been changes to the assessment and / or updates since the 2018 EIAR these have been set out in this updated chapter.

This chapter initially sets out the methodology followed (Section 14.2), describes the receiving environment (Section 14.3), and summarises the main characteristics of the Project which are of relevance for material assets – agriculture (Section 14.4). The evaluation of impacts of the Project on material assets-agriculture are described (Section 14.5). Measures are proposed to mitigate these impacts (Section 14.6) and residual impacts are described (Section 14.7). The cumulative assessment is included in (Section 14.8) and the chapter concludes with a summary (Section 14.9) and reference section (Section 14.10).

This chapter has utilised the information gathered during the constraints and route selections studies for the proposed N6 GCRR, the studies to inform the 2018 EIAR, for the 2019 Response to Request for Further Information and for the oral hearing in 2020 plus data gathered during site visits undertaken in 2023/2024 to inform the material assets-agriculture impact appraisal. Sections 4.12, 6.5.7 and 7.6.7 of the Route Selection Report considered the material assets agriculture constraints within the scheme study area and compared the potential material assets - agriculture impacts of the proposed route options respectively. These sections of the Route Selection Report contributed to the design of the proposed N6 GCRR which forms a major part of the Project which this chapter appraises.

The key changes to the chapter since the 2018 EIAR involve updating:

- the description of the receiving environment and impact assessments to take account of minor changes in the baseline due to housing developments located on eight agricultural land parcels
- to take account of changes to the EPA guidance for the preparation of an EIAR, changes in CSO agricultural statistics information relevant to the study area and a new Common Agricultural Policy that has been introduced for the period 2023 to 2027. The methodology in the 2018 assessment aligns closely with the updated EPA guidelines (2022) and therefore there is no change in the methodology used in this updated EIAR. The most recent agricultural census results in 2020 are used in this updated EIAR. Compared to the 2010 Agricultural Census results used in the 2018 EIAR this updated CSO information does not indicate significant changes in farm types or sizes which are relevant to the study area. The new Common Agricultural Policy rules do not require a revised methodology of assessment because, similar to the previous Common Agricultural Policy, impacts relate mainly to land use and land area reduction
- Appendix A.14.1 and Figures 14.1.1 to 14.1.15 to take account of changes to land ownership
- to take account of points raised from the Brief of Evidence presented to An Bord Pleanála (ABP) at the oral hearing in 2020 and from the ABP Inspector's Report dated June 2021

14.2 Methodology

14.2.1 Introduction

This updated chapter is prepared having regard to the standard guidelines for environmental assessment published by the EPA in 2022 and also uses the guidelines for arriving at significance of impact as discussed in the UK Highway Agency Design Manual for Roads and Bridges. The information sources referred to in Section 14.2.3 below are standard for agricultural impact assessment for new road developments.

14.2.2 Legislation and Guidelines

The following guidelines were referred to while preparing and writing this updated chapter:

- European Union (2018) (Planning and Development) (Environmental Impact Assessment) Regulations. (the Roads Act 1993 (as amended)
- Guidelines on the Information to be contained in Environmental Impact Assessment Reports (EPA, final May 2022)

14.2.3 Data Sources and Consultations

The information sources which support this impact appraisal are described in Table 14.1 below and have been reviewed and updated where necessary for this updated EIAR. The 2020 Agricultural Census data is used instead of the 2010 Census which was used to inform the assessment presented in the 2018 EIAR.

Table 14.1 Data sources used for the Agricultural Assessment

Information	Data Source
Agricultural statistics	• Census of Agriculture 2020[1] from the Central Statistics Office (CSO) – used to provide background data on the average size and enterprise mix of farms in County Galway • CSO, Average crop yields from 2008 – 2023[2], Teagasc data for grass production at Ballyhaise Agricultural College (2008 – 2021)[3], UCD Lyons grass growth data from 2016 – 2022[4].
Soils	• Teagasc Soils Information System[5] • The 'General Soil Map of Ireland' (1980) • Windshield survey, orthophotography, and on-farm surveys
Land use & farm details	• Land registry mapping data • Farmer interviews • Windshield surveys • Orthophotography - used as an aid in examining farm layout and land quality

A consultation letter was sent to the Department of Agriculture, Food and the Marine November 2016.

14.2.3.1 Technical Limitations

The agricultural impact assessments presented in the 2018 EIAR were carried out from January 2016 to December 2017 during the Common Agricultural Policy period 2015 – 2019. This Policy was extended to 2022 before agreement was reached between EU States on the funding of the current Policy period 2023 – 2027. While the fundamental management practices involved in livestock and crops production has remained the same, there have been many changes in farmer area based support payment schemes since 2022. For example, the new ACRES environmental scheme was introduced and there are additional conditions in relation to the Protection of Water legislation. There are new rules in relation to the eligibility of scrub for area based payments.

The author has re assessed each of the individual impact assessments to take into account how the proposed N6 GCRR may potentially affect compliance with the new agri-schemes and prevailing agricultural

[1] The Census of Agriculture 2020 is the most up to date survey providing data on farm and enterprise types and size on a per County basis available at https://www.cso.ie/en/statistics/agriculture/censusofagriculture/ accessed in 2025.

[2] CSO (2023), Available at https://www.cso.ie/en/statistics/agriculture/areayieldandproductionofcrops/; Accessed in 2025

[3] Teagasc (2022) Available at Ballyhaise Dairy Research Farm 'https://www.teagasc.ie/media/website/publications/2022/Ballyhaise-Dairy-Research-Farm.pdf - grass yield 2011 – 2020, Accessed in 2025

[4] UCD, 2022, Table 4, Lyons Systems Herd Annual Report 2022 https://www.ucd.ie/agfood/t4media/UCD%20Systems%20Herd%20Annual%20Report%202022%20Final%20Published%20.pdf

[5] Teagasc, 2024 available at http://gis.teagasc.ie/soils/soilguide.php; Accessed in 2025

environment and there are no changes in the results of the assessments for this updated EIAR due to these changes.

In 2016 – 2017 the author was able to engage directly with landowners in relation to 145 land parcels[6] (74%) of a total of 195 agricultural land holdings directly affected by the Project. The landowner land parcels were visually reinspected in 2024 to verify the land use. Three of the agricultural land holdings changed to residential developments since the 2018 EIAR reducing the number of agricultural land holdings to 192.

Where landowners could not be contacted directly the following information sources used were:

- Roadside vantage point surveys
- Examination of aerial photography
- Reference to other desk information sources such as Land Registry Mapping, CSO statistics for County Galway and Digital Soil Data

The available data was sufficient for the agricultural impact appraisal along the entire Project.

14.2.4 Study Area and Baseline Data Collection

The study area comprises of 192 (reduced from 195 in the 2018 EIAR) agricultural land parcels that are directly affected by the Project, a total area of approximately 1,078 hectares, a reduction from the 1096 hectares in the 2018 EIAR due to changes in land use from agricultural lands to residential development. The location of these land parcels is shown in Figures 14.1.1 to 14.1.15, which have been updated since the 2018 EIAR, and extends from Na Foraí Maola in the west of the study area to Coolagh in the east. Proximity to an expanding city has resulted in many smaller, fragmented holdings and this combined with poor land quality (particularly west of the River Corrib) means that the sensitivity of agriculture across the Project is low (48% of land parcels are low or very low sensitivity). Landowner interviews and on-site surveys were conducted by the author in January 2016 – December 2017. Where possible landowners were interviewed and asked to describe their farming enterprise, how the land is being used, how access is provided and to identify sensitive features on their farms such as farm yards, wells/springs and access tracks and gates. As noted previously, lands were visually reinspected in 2024 to verify the land use.

14.2.5 Impact Assessment Methodology

The assessment methodology used to inform this updated chapter is the same as that used to inform the 2018 EIAR. The assessment of agricultural impacts involves:

1. Evaluation of the baseline environment, the types of farms and the sensitivity of the individual farms across the Project
2. Evaluation of the nature and magnitude of the effects on each farm and the effects on farming collectively across the Project and within County Galway
3. Having considered the sensitivity of the baseline agricultural environment and the magnitude of effects, the impact significance is predicted for:
    a. each land parcel affected across the Project
    b. agriculture collectively across the Project (i.e. locally within the study area)
    c. agriculture within County Galway (i.e. regionally)

These three elements of the methodology are described in Sections 14.2.5.1, 14.2.5.2 and 14.2.5.3. It is important to note that this agricultural appraisal assesses the changes that will occur to the physical agricultural environment and assumes that, because landowners are compensated for attributable financial losses, their financial status will not change.

[6] Where landowners could not be contacted directly the agricultural consultant wrote to the landowner.

14.2.5.1 Evaluation of sensitivity of farms

The methodology for evaluating sensitivity of farms and the criteria in Table 14.2 is as per the 2018 EIAR. Each land parcel is evaluated to determine its sensitivity based mainly on the criteria shown in Table 14.2 below. These criteria are derived from the author's own experience in agri-environmental assessment and are as per the 2018 EIAR and remain the view of the author based on his experience as of the date of this updated EIAR.

Table 14.2 Criteria for categorisation of sensitivity of farms

Farm Enterprise Type	Sensitivity
Stud farm, Equestrian centre	High - Very High
Dairy farm, Intensive equine enterprises	High
Non-dairy grazing livestock enterprises (including beef, sheep and non-intensive equine) and grass cropping enterprise	Medium
Tillage	Medium
Rough Grazing, Bog, Forestry, Woodland (where poor land quality restricts farming practices)	Low - Very low

Each appraisal of sensitivity is subject to professional judgement and evaluation of other site specific factors such as the land quality and importance of the enterprise.

14.2.5.2 Evaluation of impact magnitude

The methodology for assessing magnitude of impact and the criteria for the evaluation of magnitude of impact (Table 14.3) are as per the 2018 EIAR. The magnitude of the potential impact is assessed by predicting the change on the affected farm or on agriculture along the route of the Project. For example, if the Project takes 10% of an affected grassland farm, it is possible to predict that the yield of grass from the farm will be affected by approximately 10%. In order to quantify the magnitude of the impact, typical baseline trends (see Table 14.1 for data sources) in the agricultural environment are examined and interpreted using the author's professional judgement. Between 2014 and 2023[7], the average variation from the ten-year yield average for spring barley and winter wheat was 7.9% and 8.6% respectively. That is to say, a farmer can expect a yield variation of approximately 8% based on baseline yield trends. Between 2018 and 2022 the variation in grass yield is approximately 6.5% per annum[8]. Therefore, impacts (such as landtake) which result in a 2.5% to 5% variation in yield are considered to create a low magnitude impact on the farm and are similar to natural baseline trends in yield and is considered low magnitude. Between 5% and 10% the magnitude of yield loss is starting to exceed the natural baseline trends and is considered medium. Yield effects which exceed 10% are considered to be high magnitude. Other factors affect the magnitude of impact such as, severance or separation of land, the duration of impact, the quality of land affected and impact on farm yards and other facilities on the farm. Table 14.3 shows the criteria which are used to indicate the magnitude of impact and each assessment is subjected to professional judgement.

[7] CSO data actual national yields

[8] Teagasc Ballyhaise 2008-2021 data, UCD 2016 -2022

Table 14.3 Indicative criteria for assessment of impact magnitude

Indicative Criteria	Impact Magnitude
• A high proportion of the land permanently taken (e.g. >10%) • A high proportion of farm permanently separated (e.g. > 15 %) • Farm buildings or water sources may be affected permanently	High – Very High
• A medium proportion of the farm permanently taken (e.g. 5% - 10%) • A medium proportion of farm permanently separated (e.g. 7 % - 15%) • Farm buildings or water sources may be affected but can be replaced • Temporary (construction) impacts which have long term effects	Medium
• A small proportion of the farm permanently taken (e.g. 2.5% - 5%) • A small proportion of farm separated or no separation (e.g. 2.5% - 7%) • Farm buildings or water sources generally not affected but if affected can be replaced • Temporary (construction) impacts which have short – medium term effects	Low
• A very small proportion of the farm taken (e.g. <2.5%) • A very small proportion of farm separated or no separation (e.g. <2.5% of the farm) • Temporary (construction) impacts which do not have residual effects	Negligible – Very Low

Impacts that occur during the construction phase will generally have low or very low magnitude because of the short duration (e.g. construction noise and vibration). Medium magnitude impacts may arise during construction where for example there is a long term impact on land drainage as a result of the construction activity.

14.2.5.3 Evaluation of significance of impact

The EPA published updated guidance on the preparation of an EIAR in 2022. However, the criteria in Table 14.4 of this updated chapter aligns closely with Section 3.7.3 and Table 3.4 of the 2022 EPA guidelines. The methodology used in this assessment and the criteria in Table 14.4 of this updated chapter are as per the 2018 EIAR. The significance of the impact is determined by evaluating both the magnitude of the impact and the sensitivity of the affected farm. Therefore, an impact which affects a farm with a low sensitivity will not be as significant as a similar magnitude of impact which affects a farm with a high sensitivity.

Table 3.4 of Section 3.7.3 of the 2022 EPA Guidelines contains guidelines for describing the significance of impacts. There are seven generalised degrees of effect significance as set out in Table 3.4 and Figure 3.4 of the 2022 EPA Guidelines. These degrees of effect have been adopted with minor adjustments that are appropriate for agricultural impact assessment. In general the impacts on agriculture are adverse in nature. The comparisons between the 2022 EPA guidelines and the criteria used in this appraisal are shown in Table 14.4.

Table 14.4 Comparison of significance of impact criteria used in this assessment with the EPA 2022 Guidance

Significance of impacts as per EPA 2022 Guidance	Significance of impacts used in this appraisal
Imperceptible Impact An effect capable of measurement but without significant consequences	**Not Significant Impact** An impact which may result in measurable effects and / or noticeable changes but the consequences are not significant.
Not Significant An effect which causes noticeable changes in the character of the environment without significant consequences	
Slight Impact An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.	**Slight Adverse Impact** An impact which causes noticeable changes in the character and management of a farm in a minor way. The farm enterprise experiences inconvenience as a result of the Project.

Significance of impacts as per EPA 2022 Guidance	Significance of impacts used in this appraisal
Moderate Impact An effect that alters the character of the environment in a manner that is consistent with existing emerging trends.	**Moderate Adverse Impact** An impact which alters the character of a farm in a manner that requires moderate changes in the management and operation of the farm. The farm enterprise can be continued as before but with increased management or operational difficulties.
Significant Impact An effect which by its character, magnitude, duration or intensity alters a sensitive aspect of the environment.	**Significant and Very Significant Adverse Impact** An impact which by its character, magnitude, duration or intensity alters a sensitive aspect of the farm. The farm enterprise can be continued but will require major changes in management and operation of the farm. This would typically occur where the farm was split in two due to separation but where access between the separated portions and the farm buildings could still be achieved effectively. Assuming the enterprise can continue the degree of change in the management and operation of the farm will determine whether the impact is Significant or Very Significant.
Very Significant Impact An effect which by its character, magnitude, duration or intensity alters the majority of a sensitive aspect of the environment.	
Profound Impact An effect which obliterates sensitive characteristics.	**Profound Adverse Impact** An impact which obliterates sensitive characteristics of the farm. The farm enterprise cannot be continued as a result of the Project. This would occur where landtake was of such a scale that the remaining land would not form a viable unit or where separation was of such a nature to make the holding unworkable or where important farm buildings and facilities were removed and could not be replaced. In some situations, the farm enterprise may continue but will require dramatic changes in the future management and operation of the farm, such that the scale and operation of the enterprise is changed dramatically.

Significance of impact is determined by evaluating the magnitude of impacts and sensitivity of the farm. This assessment is subject to variation due to professional judgement on a case-by-case basis.

14.3 Receiving Environment

14.3.1 Agricultural Enterprise Types

Since the 2018 EIAR three land parcels have been excluded from the material assets agricultural study area due to the change in land use to housing developments (Ref. No. 242, 482 and 483) and the area of five land parcels has been reduced due to housing developments (Ref. No. 464, 486, 501 and 627). In this updated chapter the study area is now comprised of 192 land parcels which are directly affected by the Project compared to 195 land parcels in the 2018 EIAR. The locations of these land parcels are shown on Figures 14.1.1 to 14.1.15.

Table 14.5 below compares land use across the Project to the statistics for County Galway. Since the 2018 EIAR there has been a census of agriculture in 2020. Similar to the 2010 census, the 2020 Census of Agriculture categorises land use into eight agricultural groups: specialist tillage, specialist dairy, specialist beef, specialist sheep, mixed grazing livestock, mixed crops and livestock, mixed field crops (mainly hay & silage) and other. As in the appraisal presented in the 2018 EIAR, the number of groups is reduced to five for comparison purposes as follows:

- Mainly Dairy - entirely a dairy farm or the dairy enterprise is the most significant target of the impact). Generally high sensitivity
- Non-dairy grazing livestock and mixed field crops– includes specialist beef cattle, specialist sheep, and mixed farms with cattle, sheep and horses. Generally medium sensitivity
- Mainly tillage - tillage cropping. Generally medium sensitivity

- Mixed crops and livestock - various crops and livestock. Medium sensitivity
- Other (e.g. pigs, poultry, horticultural cropping and equine as the main enterprises). Medium – very high sensitivity

The Census of Agriculture 2020 statistics show that the average size of farms in County Galway is 26.5 hectares which is slightly higher than that of the 2018 EIAR which was 25.8 hectares. This compares to a national average size of 33.4 hectares, up from the average of 32.7 hectares in the 2018 EIAR. The average size of land parcels across the Project is approximately 6.0 hectares, unchanged from the 2018 EIAR. The small size of land parcels across the Project is a result of the close proximity to Galway City. Many holdings have been subdivided among family members and land has been sold for development. Approximately 21% of land parcels are less than 1 hectare in size and therefore have limited agricultural use. The 2010 statistics for farm types within County Galway is similar to the 2020 census – 95% of farms within County Galway are beef farmers (unchanged since 2010). Within the study area beef farming is the main enterprise across the Project. Compared to the national average the number of small equine enterprises across the Project is high; these horses are mainly kept for leisure purposes.

Table 14.5 Land Use Statistics across the Project compared to National and Regional Statistics

Farm/Enterprise Category	Total Nos. of affected land parcels within each category	% of farms within each category		
		Land parcels across Project	Farms in Co. Galway (2020 Agri Census)	Farms nationally (2020 Agri Census)
Mainly Dairy	6	3	3	11
Beef and/or sheep and hay/silage	122 (4 with sheep)	63.5	95	82.5
Mainly Tillage	0	0	0.5	3.5
Mixed Crops & Livestock	0	0	0.5	1.5
Other (Equine)	34 (31 equine)	17.5	1	1.5
Not Farmed	30	16	0	0
Total	192	100	100	**100**

Since the 2018 EIAR the number of beef land parcels is reduced to 122 (from 123) and number of 'not farmed' land parcels is reduced to 30 (from 32). Table 14.5 shows that the main farm enterprise across the Project is beef (and sheep). The sensitivity of these land parcels range from very low to medium. There is no change in the number of high and very high sensitivity land parcels since the 2018 EIAR. There is one high sensitivity beef enterprise (cattle trader – PRO[9] 701) and two high[10] sensitivity dairy enterprises (PRO 239 & PRO 241). Four of the six dairy land parcels are medium sensitivity because they are rented by dairy farmers. The Galway Racecourse (MO[11]691) is classified as very high sensitivity due to the equine enterprise and regional importance. There are two very high sensitivity equine land parcels (MO 751 & MO 760) and the remaining equine enterprises are medium, low or very low sensitivity enterprises where horses and donkeys are kept mainly for leisure purposes. See Appendix A.14.1 for details of each individual land parcel.

[9] N6 Galway City Ring Road Protected Road Scheme 2018 Reference Number

[10] There are six dairy land parcels. Two dairy farmers rent four adjoining land parcels which are classified as medium sensitivity.

[11] N6 Galway City Ring Road Motorway Scheme 2018 Reference Number

14.3.2 Soil Types

Soil types across the Project are described in detail in Chapter 9, Soils and Geology of this updated EIAR and this assessment also refers to the Teagasc Soils Information System (See Table 14.1 for source of data). The description of soils is unchanged since the 2018 EIAR. In general, the soil quality is poorer west of the River Corrib. From the townland of An Baile Nua to Na hAille the dominant soil type is a peaty soil with rock out crops and interspersed with blanket bog. The drainage is poor and the land is wet. From Na hAille to the River Corrib the dominant soil type is a poorly drained brown earth mineral soil. East of the River Corrib the quality of land improves from an agricultural perspective; although the quality is variable. Adjoining the River Corrib there is low lying alluvium soils that are subject to flooding. Further east in Menlough and Ballindooley the topography is undulating and the dominant soil type is a mineral brown earth interspersed with limestone out crop. From Ballindooley to Doughiska the dominant soil is a shallow free draining brown earth mineral soil. The topography is flat or gently undulating. This land is good quality grazing land and some of it is suitable for tillage. In general the soil types across the Project are suited to non-intensive grazing by beef cattle.

14.4 Characteristics of the Proposed Development

A detailed description of the Project and construction activities are provided in Chapter 5, Project Description and Chapter 7, Construction Activities of this updated EIAR. This section outlines the characteristics and activities of the Project of relevance to material assets agriculture.

The Project will consist of a road carriageway, embankments, cut slopes, accommodation works, drainage features and planted/landscaped areas, temporary and permanent stables and their associated infrastructure which will traverse agricultural lands. Approximately 214.5 hectares of land will be permanently acquired from 192 affected land parcels and, in addition, approximately 5.5 hectares of land will be temporarily acquired from eight of these land parcels for the Project.

The Project comprises of 5 phases as detailed in Chapter 5 and 7as set out below. The inclusion of the temporary stables as relocated infield at Galway Racecourse and ancillary works in the assessment of the Project for this updated EIAR has resulted in the increased area of the Assessment Boundary in the vicinity of Galway Racecourse. The main characteristics of the Project of relevance to the material assets agriculture assessment are outlined under construction and operation phases in Sections 14.5.3 and 14.5.4 respectively. Phase 2 comprises the most significant characteristic of the Project.

14.4.1 Phase 1

Phase 1 of the Project will take 12 months to complete. During this time the works required for the construction of temporary stables, machinery shed and new parade ring will remove lands currently used by the racecourse for parking during race day. At the beginning of the construction of Phase 1, the construction site will be fenced with restricted access. Construction of the proposals at this phase will require activities such as excavation, rock breaking, digging of a well and movement of materials within the Assessment Boundary. This will generate noise, dust and the movement of machinery which will potentially impact on adjoining lands. The direct impacts will be confined mainly to the racecourse land parcel (MO 691) with potential effects from noise dust and traffic affecting Ref. MO No. 701.

14.4.2 Phase 2

Works undertaken as part of Phase 2, the proposed N6 GCRR (which will take 36 months to complete) will include the following:

- The provision of the proposed N6 GCRR in two stages which will take place concurrently:
  - Stage A - N6 Coolagh Junction to N59 Letteragh Junction
  - Stage B - N59 Letteragh Junction to R336 west of Bearna
- Existing stableyard to be demolished, including existing machinery shed.
- Existing commercial building to the north of the Galway Racecourse to be demolished and the site cleared.

- Existing horse box parking off Racecourse Avenue to be demolished, including removal of existing access arrangement to the Ballybrit graveyard, to accommodate the Galway Racecourse Tunnel as part of the proposed N6 GCRR.

This will generate noise, dust and the movement of machinery which will potentially impact on adjoining lands. The direct impacts will be confined mainly to the racecourse land parcel (MO No. 691) with potential effects from noise dust and traffic affecting MO No. 701 (which is an adjoining land parcel).

The boundary of proposed N6 GCRR will be fenced off in Phase 2 and this will directly impact on land parcels MO No. 691, 701, 714, 716 and 718.

Water and power supplies will be disrupted requiring alternative sources and ducting under the Project. Watercourses will be diverted, and the carriageway will be lower and higher than the adjoining farmland at different locations. This will disrupt land drainage requiring the construction of culverts and maintenance of the land drainage along the edge of the earthworks for the Project.

14.4.3 Phase 3

During this phase, which will take 9 months, the permanent stables will be constructed. This will generate noise, dust and the movement of machinery which will potentially impact on adjoining lands. The direct impacts will be confined mainly to the racecourse land parcel (MO No. 691) with potential effects from noise dust and traffic affecting MO No. 701.

14.4.4 Phase 4

The proposed temporary stables will be demolished during a 3-month period once Phase 3 is complete. All demolition activities will be carried out within the Assessment Boundary.

14.4.5 Phase 5

At Phase 5, the Project will be operational.

When the construction phase is complete, and the mitigation measures implemented, the residual effects of the Project will be permanent. These effects will result in a change in the structure and layout of farms across the Project reducing the size and separating part of farms. A low level of disturbance will be experienced due to traffic. Landowners will be compensated to ensure they are not at a financial loss.

14.5 Evaluation of Effects

14.5.1 Introduction

The impact assessments for each land parcel across the Project are presented in Appendix A.14.1 Summary of Individual Land Parcel Impact Assessments. The potential pre mitigation impacts of the Project are evaluated in Sections 14.5.3 and 14.5.4 and are summarised in Section 14.5.5 and in Table 14.6. The assessment results are unchanged since the 2018 EIAR except that there are three fewer land parcels in the study area.

14.5.2 Do Nothing Effects

Farmers as members of the local community regularly use the existing road network to access schools and shops and to purchase goods and sell produce. Tractors travel on the existing road network to access farms and herds of cattle. Lorries and goods vehicles deliver and collect goods from farms. In the “Do Nothing” scenario the existing traffic congestion will continue to have a small adverse impact on agriculture which is assessed as not significant.

14.5.3 Potential Construction Effects

General construction noise and vibration and the generation of dust resulting from the construction of the Project will have no significant or slight adverse impacts. Rock breaking/blasting and piling activities may result in a flight response in livestock but rarely causes a significant impact and will have no significant or slight adverse impacts. The landtake will result in the acquisition of farm buildings (mostly small sheds and

outhouses) on 17 land parcels (including Galway Racecourse)[12], which will result in temporary impacts because these facilities can be replaced with new buildings on the retained lands. There will be temporary disruption to power and water supplies but with mitigation the impact is not significant or slight adverse. Land drainage will be affected during the construction period where drainage outfalls from agricultural land is intercepted or blocked by the Project. The proposed drainage design ensures that all drainage outfalls are maintained or redirected to a suitable outfall the impacts are generally not significant.

Once the fencing for the proposed N6 GCRR is erected the land inside it is no longer available to the landowner. The reduction in land area is a permanent impact and the range of impact due to loss of land ranges from not significant to profound. Temporary landtake will occur in seven land parcels. This land is required for the construction period only and will be used for construction compounds, traffic diversions and construction sites. The land on these eight[13] land parcels will be subject to top soil stripping, compaction and potential impacts on land drainage. Although the landtake at these sites is temporary (during the construction period only) it is assumed that the damage caused to land will be permanent. The Project will cross 61 land parcels (62 land parcels in the 2018 EIAR, as one of those parcels is now residential development) causing separation of part of the farm, separating approximately 163 hectares of land and creating 87 new land parcels. During construction temporary crossing points for livestock and machinery will be allowed until accommodation roads are constructed. Land separation is a permanent impact, and the range of impact is not significant to significant adverse.

14.5.4 Potential Operational Effects

The mitigation measures set out in Section 14.7 will be constructed and implemented during the construction phase. Maintenance of the Project will continue during the operational phase and in a very small number of cases remedial works may have to be carried out during the operational phase (e.g. maintenance of the fenceline along the mainline of the Project). The land loss impact which commences with the fencing off of the acquired land during the construction period is a permanent residual impact that continues in the operational phase. The reduction in size will result in a reduction in farm output and the range of impact is not significant to profound. This impact cannot be mitigated except through compensation. In the longer-term landowners may be able to replace the area of acquired land, but generally the replacement land will be separated from the original holding. The temporarily acquired land on eight land parcels will not result in a permanent reduction in the area farmed, however, it is assumed that there will be permanent damage to land at these sites. The separation of parts of farms (often referred to a severance) is a permanent impact that can be mitigated by providing access roads to the separated land parcel. This will result in additional travel distances and additional fixed costs on a farm and the range of impact is not significant to significant adverse. Impacts on drainage are generally not significant or slight adverse. Stone wall boundaries will be removed within the fenceline for the proposed N6 GCRR. The fenceline along the proposed N6 GCRR will be mainly timber post with chain linked fence. This fence will be maintained by the local authority along the mainline of the proposed N6 GCRR and by landowners along side roads connected to the mainline. Stud type fencing will be provided where required (or landowners will be compensated to instal their own stud fencing). Where maintained in good working order the proposed fence type will restrain livestock as effectively as a well-maintained stone wall. The loss of shelter will not have a significant effect on livestock performance. Therefore, the loss of stone walls will not significantly affect the retained land parcels. The permanent disturbance impact caused by traffic, noise, air emissions and lighting is not significant.

14.5.5 Summary of Potential Effects

The potential (pre-mitigation) impacts on land parcels across the Project are summarised in Table 14.6.

[12] Ref Nos PRO/MO 117, 154, 229, 243, 259, 289, 495, 498, 572, 583, 625, 626, 632, 691, 689, 701 & 754

[13] Ref Nos PRO/MO 103, 147, 468, 486, 501, 583, 651 and 691

Table 14.6 Summary of Potential (Pre-Mitigation) Impacts

	Numbers of Land parcels				
Significance of Impact	**Mainly Dairy**	**Beef / sheep and hay / silage**	**Other (incl. Equine)**	**Not farmed**	**Totals**
Not significant	2	32	8	14	56
Slight	1	22	6	8	37
Moderate	-	19	6	6	31
Significant	-	35	11	2	48
Very Significant	1	6	0	-	7
Profound	2	8	3	-	13
Total No.'s. of Farms	6	122	34	30	192
68 land parcels are predicted to have impacts which are significant adverse and greater (35.5% of all affected land parcels)					

The pre-mitigation impacts arising from construction disturbance will be mainly not significant because of the short duration of effect. The impacts in Table 14.6 arise mainly from land loss and impact of access before mitigation (e.g. accommodation roads) is provided. There will be 32 not significant impacts in Beef / sheep and hay / silage land parcels compared to 33 in the 2018 assessment and 14 not significant impacts in not farmed land parcels compared to 16 in the 2018 EIAR. Therefore, in this updated chapter, 56 of the 192 land parcels will have not significant impacts compared to 59 of the 195 land parcels in the 2018 EIAR.

The agricultural study area consists of 192 land parcels and 1,078 hectares of land (compared to 1,096 hectares and 195 land parcels in the 2018 EIAR) of which approximately 220 hectares is within the Assessment Boundary. This includes approximately 5.5 hectares of temporary landtake in eight of the one hundred and ninety two land parcels. The agricultural landtake for the Project is similar to that presented in the 2018 EIAR. Before mitigation, the potential impact on the study area due to the Project is moderate adverse where approximately 214.5 hectares of agricultural land is permanently acquired (landtake), permanent damage is caused to soil structure on approximately 5.5 hectares of 0.75% of the study area and 166 hectares of land is separated without effective access (15% of the total agricultural area). The pre mitigation impact presented in the 2018 EIAR was also moderate adverse due to a landtake of 219 hectares and separation of 172 hectares of land without effective access (16% of the total agricultural area).

In An Bord Pleanála's Inspector's Report dated 22 June 2021, ABP's Inspector agreed with the above impact assessment on retained agricultural lands and farm viability:

" The PRD will result in the permanent loss of a substantial amount of farmland and the severance of numerous farm enterprises. Approximately 219 ha will be acquired (slightly reduced on foot of modifications to the CPO), representing c. 20% of the study area. Land separation will affect 62 land parcels and 172 ha of land will be separated/severed. The overall residual impact on agriculture along the PRD is considered by the applicant to be moderate adverse. In terms of the study area, I would agree with this assessment."

14.6 Mitigation Measures

14.6.1 Introduction

Construction phase mitigation measures are presented in Section 14.6.2 and operational phase mitigation measures are presented in Section 14.6.3. There are no changes in the mitigation measures proposed in this updated chapter compared to the 2018 EIAR. However, in the operational phase mitigation measure No. 7 is included to address concerns of landowners as expressed during the oral hearing in 2020 and to reflect the existing commitment of the local authority to maintenance of boundary fencing along the mainline of the proposed N6 GCRR during the operational phase.

Mitigation of potential impacts takes place under two headings:

- General mitigation measures – described in Sections 14.6.2 Construction Phase and 14.6.3 Operational Phase below
- Compensation under the Compulsory Purchase System – compensation to farmers for residual damage is part of the statutory process for compensation

14.6.2 Construction Phase

1. The landowner will be provided with access to all separated land parcels during the construction of the Project. Where temporary disruptions to this access occur landowners will be notified in advance.
2. Where existing water and electricity supplies are disrupted during the construction phase an alternative water source or electricity supply will be made available e.g. water tanker or electric cable ducting. If access to surface drinking water sources are permanently restricted alternative groundwater supplies will be provided (or compensation to allow farmer drill his own well).
3. Suitable boundary fencing will be erected to delineate the line of the proposed fenceline for the proposed N6 GCRR and prevent disturbance to adjacent land.
4. A key contact person will be appointed during the construction phase to facilitate communications between affected landowners and to facilitate the re-organisation of farm enterprises by farmers during critical times.
5. Landowners with lands adjoining sites where either rock breaking, blasting or piling takes place will be notified in advance of these activities.
6. The impacts on water quality will be minimised by way of a programme of mitigation measures for surface and ground water sources as described in Chapters 10, Hydrogeology and Chapter 11, Hydrology of this updated EIAR.
7. The spread of dust onto adjoining lands will be minimised by way of mitigation measures set out in Chapter 16, Air Quality of this updated EIAR. Typically, the impact of dust on agricultural grazing livestock is not significant.
8. Where drainage outfalls are temporarily altered or land drains blocked or damaged an adequate drainage outfall will be maintained and land drains will be repaired.
9. Galway County Council will employ an equine expert or veterinary practitioner for the duration of the construction contract.
10. The design and construction of the temporary stables and permanent stables proposed for Galway Racecourse will be carried out in consultation with the Irish Horseracing Regulatory Board (Horse Racing Ireland HRI).
11. Galway County Council will continue to liaise with Galway Race Committee in relation to the implementation of any approval granted in so far as it relates to Galway Racecourse.

14.6.3 Operational Phase

1. The loss of agricultural land due to the construction of the Project is a permanent loss which cannot be mitigated except through financial compensation.
2. Landowners who lose buildings to the Project will be compensated. Compensation payments will enable farmers to replace buildings.
3. All separated land parcels will be accessible either via the local road network, via accommodation access roads and access tracks.
4. Where existing water and electricity supplies to fields or farm yards are severed, the supply will be reinstated by provision of ducting where possible. Alternatively, where ducting is not feasible a permanent alternative water source or electricity supply will be made available. Compensation payments will enable farmers to replace power and water supplies.

5. Landowners may have to build additional farm facilities (e.g. cattle holding and testing pens) on their separated land. Field boundaries and paddock systems may have to be re-organised to take into account the altered shape of fields. These matters are addressed in the compensation settlements.

6. Water from the Project will be diverted to attenuation ponds before discharging to watercourses or to ground. The drainage design of the Project will intersect existing field drains and carry the drainage water to suitable outfalls. Drains and drainage outfalls within the proposed fenceline for the proposed N6 GCRR will be maintained by the local authority during the operation phase.

7. Boundary fencing along the mainline of the proposed N6 GCRR will be maintained by the local authority.

8. Other injury impacts such as loss of shelter, removal of field boundaries, disruption of farm roads and field paddock systems and the increased potential for trespass on to private land due to the Project are taken into account in this assessment. Statutory compensation will be used to compensate landowners for residual effects and to allow the landowners to execute mitigation measures and re-instatement works on their own land.

9. Landscaping along the Project will minimise the visual impact on farms across the Project and will over time improve shelter in affected farms.

In An Bord Pleanála's Inspector's Report dated 22 June 2021, ABP's Inspector agreed with the above mitigation measures:

" During the construction phase, the landholdings which are severed by the PRD are the most likely to experience temporary severance or interruption of access. Section 14.6.2 of the EIAR states that adequate access across the PRD will be maintained for these land parcels during construction by providing temporary crossing points for livestock and machinery until the permanent access accommodation works are in place, and that where temporary disruptions to access occurs landowners will be notified in advance. A key contact person will also be appointed to liaise with landowners and ensure that access requirements are communicated to the contractor and facilitated. These commitments are included as Item 14.1 of the SoEC. Landholdings which are not severed by the PRD may potentially experience temporary disruption due to construction activity and traffic. It is again proposed to address this through liaison and communications.

Having regard to the commitment to provide access and to liaise with affected parties and the limited duration of the construction phase, I would concur with the applicant that impacts associated with access during the construction phase are not likely to be significant."

Importantly, this was the view of an independent An Bórd Pleanála Inspector, having considered in some significant detail the potential impacts and proposed mitigation measures after hearing evidence from many proponents and opponents raising concerns about access to retained lands during both the construction and operational phase. The Inspector furthered noted *"I do not consider that access arrangements in the operational phase are likely to result in significant impacts".*

14.7 Residual Impacts

14.7.1 Introduction

Residual impacts are evaluated for each of the farms affected by the Project as a result of the construction phase (Section 14.7.2) and the operational phase (Section 14.7.3) and a summary is presented in Table 14.7. The residual impact on agriculture across the Project (i.e. within the Assessment Boundary) and within County Galway is evaluated in Section 14.7.3. Cumulative impacts are assessed in Section 14.8.

14.7.2 Construction Phase

The material assets agriculture assessment presented in the 2018 EIAR assumed a construction period of 36 months for the proposed N6GCRR. However, the overall construction period for this Project is 60 months. The main difference arises due to proposed development at the Galway Racecourse which does not affect the majority of land parcels across the Project.

The impacts resulting from the generation of noise, dust and construction traffic are temporary in nature (less than 60 months). Prior to the construction of access roads or access tracks land will be separated by the proposed N6 GCRR. In such situations points of temporary access will be provided to landowners to allow them to access their separated land parcels during construction. Where services such as water and power are interrupted temporary sources will be provided. Land drainage impacts are mitigated by the design of the Project and a commitment to maintain drainage outfalls during the construction period.

The residual impact of landtake commences at the beginning of the construction period and as discussed in Section 14.6 this impact cannot be mitigated except through compensation of landowners. Therefore, the significant residual impacts that arise from the construction phase are all attributable to landtake because the temporary impacts caused by construction activity (noise, dust, traffic movements), temporary land separation, temporary severance of services and impacts on land drainage are not significant for all land parcels, except for MO 691 (Galway Racecourse). This is due to the temporary nature of the construction impacts and proposed mitigation. In the case of MO 691 there is a slight adverse residual impact due to the construction disturbance over the 60 month construction period and the very high sensitivity of the land parcel.

14.7.3 Operational Phase

The operational phase is considered to be in excess of 30 years and therefore residual effects that occur for this duration are permanent and therefore more significant than the temporary impacts that occur during the 60-month construction phase for the Project. Impacts such as loss of land and separation (severance) of land occur during construction but are permanent residual impacts in the operational phase also. The design of the Project will ensure that the land drainage of affected farms is not significantly affected and the significance of impact is not significant or slight adverse. The residual impacts on farms along the route of the Project is summarised in Table 14.7.

Table 14.7 Summary of Residual Impacts

	Numbers of Land parcels				
Significance of Impact	**Mainly Dairy**	**Beef / sheep and hay / silage**	**Other (incl. Equine)**	**Not farmed**	**Totals**
Not significant	2	32	9	13	56
Slight	1	28	6	9	45
Moderate		25	8	8	41
Significant	1	29	9		39
Very Significant		6	1		7
Profound	2	1	1		4
Total No.'s. of Land parcels	6	122	34	30	192
50 land parcels are predicted to have an impact which is significant adverse or greater (26% of all affected land parcels)					

Since the 2018 EIAR the impact on MO 752, MO 754 and MO 758 have been reduced from significant adverse, very significant adverse and very significant adverse to slight adverse, significant adverse and significant adverse respectively. This is because the assessment presented in the 2018 EIAR included a cumulative effect from the existing M6 whereas in this updated EIAR the M6 is assessed as part of the existing baseline and only the effects of the Project are assessed. Therefore there are 2 less very significant adverse effects (MO 754 & MO 758) when compared to the 2018 EIAR and these two are added to the significant adverse category in the current assessment. MO 752 which was significant adverse in the 2018 EIAR is moved to the slight adverse category in this updated EIAR. Three not significant adverse effects in the 2018 EIAR (PRO 242, 482 and 483) are no longer included in this updated EIAR due to housing developments on those lands.

The agricultural study area along the Project consists of the area of all land parcels directly affected i.e. approximately 1,078 hectares. Approximately 220 hectares of land will be acquired (214.5 hectares permanent and 5.5 hectares temporary) which is approximately 20% of the study area. Land separation will affect 61 land parcels and 166 hectares of land will be separated – approximately 15% of the affected area. However, after mitigation effective access will be provided to the separated lands. The overall residual impact on agriculture along the Project (i.e. within the Assessment Boundary) is moderately adverse.

In An Bord Pleanála's Inspector's Report dated 22 June 2021, ABP's Inspector agreed with the assessment in terms of access, noise, dust and disturbance. They also concur with the agricultural assessment and that overall it is moderate adverse impact on agriculture and that there are a number of profound impacts which will be addressed through the CPO process.

Impacts on drainage and the permanent disturbance impact caused by traffic, noise, air emissions and lighting are generally considered to be not significant.

The overall residual impact on agriculture along the PRD is considered to be moderate adverse.

The agricultural enterprises that are significantly or profoundly adversely affected are likely to require major changes to their operations, management and scale and this is ultimately a compensation matter.

Importantly, this was the view of an independent An Bórd Pleanála Inspector, having considered in some significant detail after hearing evidence from many proponents and opponents raising concerns about the agricultural impact.

14.8 Cumulative Impacts

This section of the chapter presents the assessment carried out to examine whether the Project along with any other projects or plans could cumulatively result in a likely significant material assets agriculture effects.

It is assessed that construction and operation of the Project on its own gives rise to significant, very significant and profound material assets agriculture effects impacts at specific locations.

The identification of planned and committed projects for the assessment of cumulative impacts has considered Galway City and County planning registers, with projects identified according to the methodology laid out in Chapter 21 of this updated EIAR. Thereafter, planned and committed projects have been scoped for assessment in this chapter based on relative proximity and potential agricultural impacts due to the proposed developments.

The identification of projects for the long list considered the following sources:

- An Bord Pleanála (ABP) website (http://www.pleanala.ie/index.htm) – for details of Strategic Infrastructure Developments (SIDs), Strategic Housing Developments (SHDs) and permissions made on appeal
- Local authorities (Galway City Council and Galway County Council) for up-to-date planning applications and local development plan designations

The types of projects considered:

- Local Planning Applications – those projects for which planning permission is applied for through the local planning authorities themselves and were identified from local authority planning application lists
- Strategic Housing Developments (SHDs) – housing developments of a certain type and scale (e.g., 100 or more houses or student accommodation units) where applications were lodged directly with An Bord Pleanála
- Large Scale Residential Developments (LRDs) – housing developments of a certain type and scale (e.g., 100 or more houses or student accommodation units comprising 200 bed spaces or more) for which planning permission is applied for through the local planning authorities
- Strategic Infrastructure Development (SIDs) – major infrastructure developments by local authorities and others for which applications are lodged directly with An Bord Pleanála

A five-year timeframe was deemed the most appropriate period for planning searches, as permissions granted more than five years ago would generally be constructed, partially constructed, or are under construction when the planning registers were viewed.

The cumulative impact on agriculture is appraised by assessing the impact of the Project in combination with other planned and committed developments such as:

- The GTS measures (Eastern Galway City Park & Ride, Bearna Greenway, Galway to Oughterard Greenway, Galway to Athlone Greenway and Galway City to Oranmore Cycleway. The Galway to Connemara Greenway affects two land parcels within the agricultural study area for the Project (i.e. MO 489 and MO 496)
- In addition to the developments listed above, a list of 458 planned and committed in the vicinity of Galway City was examined. This list comprised of all planning applications submitted to the local authority, which were not currently developed, and which were within a 15km buffer from the Project which required an EIA. The proposed development plots in these 458 applications was examined using aerial photography (Google Earth 2024) and where plots are currently non-agricultural (i.e. located entirely on a residential or industrial or urban site or located in non-agricultural land e.g. peatland, forestry) the potential for agricultural effects has been screened out. 81 of the 458 plots are on green field sites. Two developments (196160 and 2460279) are located on Galway Racecourse (MO 691) and are included in the Project, therefore 78 planned developments are assessed for potential cumulative impacts on the agricultural baseline. These 78 developments have a combined area of approximately 75 hectares. Furthermore, 23 of these 78 planned developments are located within the agricultural study area for the Project and 55 are located outside this study area. These 23 developments are located on 16 land parcels.

The cumulative assessment of these planned and committed developments with the Project is detailed in Appendix A.14.2. The assessment results are summarised below in Table 14.8.

Table 14.8 Summary of Cumulative Effects on land parcels within the study area

Category of Impact	Number of impacts due to planned development	Land parcels affected	No. of impacts in combination with Project	Land parcels affected
Not significant	13	103, 160[1], 198, 213, 489, 496, 498, 501[2], 526	13	103, 160[1], 198, 213, 489, 496, 498, 501[2], 526
Slight adverse	1	108	1	108
Moderate adverse	2	450, 501[3]	1	450
Significant adverse	7	101, 115, 241, 261, 463, 484, 624	6	101, 241, 261, 463, 484, 501[4]
Very significant adverse	-	-	2	115[5], 624[5]
Profound	-	-		-

[1] Two planned developments listed in Appendix A.14.2 have a not significant impact on land parcel MO 160

[2] Six planned developments listed in Appendix A.14.2 have a not significant impact on land parcel MO 501

[3] In addition to six planned developments listed in Appendix A.14.2 which have a not significant impact on land parcel MO 501 there is one moderate adverse impact

[4] Moderate adverse effect in combination with moderate adverse impact from Project results in significant adverse impact in land parcel 501

[5] Significant adverse effect in combination with significant adverse impact from Project results in very significant adverse impact in land parcels 115 and 624

In total there are 23 potential cumulative effects on 18 land parcels within the study area:

- The proposed greenway from Galway to Oughterard affects two land parcels MO 489 and MO 496. The greenway will acquire approximately 0.3ha from these two land parcels and sever access in MO 489. The

impacts of the Greenway do not add significantly to the impacts of the proposed N6 GCRR on these two land parcels

- 23 of the 78 planned developments are located on 16 land parcels within the agricultural study area for the Project. These 23 planned developments result in 11 not significant, one slight adverse, one moderate adverse, six significant adverse and two very significant adverse cumulative effects on these land parcels.

Outside the agricultural study area for the Project there are 55 planned developments assessed in Appendix A.14.2 which do not have significant effects on agricultural land parcels within the study area of the Project.

The cumulative effects of land loss (approximately 25 hectares) due to the combined 23 planned developments would have a not significant on agriculture within the study area (low magnitude of impact on a low sensitivity baseline). The cumulative effects of land loss (approximately 50 hectares) due to the 55 planned developments located outside the agricultural study area for the Project would have a not significant effect on agriculture within the study area.

Therefore, the Project, either assessed on its own, or in combination with other planned developments, will have a moderate adverse effect on agriculture within the study area, that is to say the planned developments will not significantly change the overall impact on the agricultural study area.

These recently constructed and planned projects in combination with the Project will require <1% of the agricultural area of County Galway (337,000 ha[14]). When considered along with upward agricultural productivity trends[15] the cumulative impact on agriculture in County Galway from the Project in combination with all the existing and planned projects assessed in Appendix A.14.2 is not significant.

14.9 Summary

The key changes to the chapter since the 2018 EIAR involve updating:

- the description of the receiving environment and impact assessments to take account of minor changes in the baseline due to housing developments located on eight agricultural land parcels.
- to take account of changes to the EPA guidance for the preparation of an EIAR, changes in CSO agricultural statistics information relevant to the study area and a new Common Agricultural Policy that has been introduced for the period 2023 to 2027. The methodology in the 2018 assessment aligns closely with the updated EPA guidelines (2022) and therefore there is no change in the methodology used in this updated EIAR. The most recent agricultural census results in 2020 are used in this updated EIAR. Compared to the 2010 Agricultural Census results used in the 2018 EIAR this updated CSO information does not indicate significant changes in farm types or sizes which are relevant to the study area. The new Common Agricultural Policy rules do not require a revised methodology of assessment because, similar to the previous Common Agricultural Policy, impacts relate mainly to land use and land area reduction.
- Appendix A.14.1 and Figures 14.1.1 to 14.1.15 to take account of changes to land ownership.
- to take account of points raised from the Brief of Evidence presented to An Bord Pleanála (ABP) at the oral hearing in 2020 and from the ABP Inspector's Report dated June 2021.

The Project will traverse an area mainly consisting of small agricultural holdings. The land quality west of the River Corrib is generally poor and although mixed, the quality of land is better east of the River Corrib. The main farming enterprise is beef cattle. There is a relatively high proportion of very low – medium sensitivity equine enterprises across the Project.

The Project will permanently acquire approximately 220 hectares of land from 192 land parcels, 214.5 hectares of permanent landtake and approximately 5.5 hectares of temporary landtake (compared to 219

[14] Table 2.2 of 2020 Preliminary Census of Agriculture Results available in CSO.ie.

[15] From 2010 – 2020 cattle numbers and sheep numbers increased by 7% and 14% respectively – source CSO Table AAA08 of 2010 census and Table 4.4, 2020 Agri-census Preliminary Results available at https://www.cso.ie/en/releasesandpublications/ep/p-coa/censusofagriculture2020-preliminaryresults/livestock/.

hectares from 195 land parcels in the 2018 chapter) and will create separated land on 61 land parcels (compared to 62 land parcels in the 2018 EIAR), resulting in the following residual impacts:

- 101 not significant and slight adverse impacts compared to 103 in the 2018 EIAR (52.5% of land parcels across the Project, compared to 53% in the 2018 assessment)
- 41 moderate adverse is the same as the 2018 EIAR (21.5% of land parcels across the Project, compared to 21% in the 2018 EIAR)
- 39 significant adverse compared to 38 in the 2018 EIAR (20.5% of land parcels across the Project, compared to 19.5% in the 2018 EIAR)
- 7 very significant adverse compared to 9 in the 2018 EIAR (3.5% of land parcels across the Project, compared to 4.5% in the 2018 EIAR)
- 4 profound impacts are the same as the 2018 EIAR (2.0% of land parcels across the Project)

The impact on agriculture within the study area is moderate adverse due to the Project – this is as per the 2018 EIAR.

When cumulative effects from other planned road, greenway and housing developments are assessed in combination with the Project the cumulative impact on three land parcels will increase from significant adverse (MO 115), moderate adverse (MO 501) and significant adverse (MO 624) to very significant adverse (MO 115), significant adverse (MO 501) and very significant adverse (MO 624). The cumulative impact of the Project in combination with planned developments on agriculture within the study area is moderate adverse while the cumulative impact of the Project in combination with planned developments on agriculture at a regional level (i.e. County Galway) is not significant. This overall cumulative impact assessment is as per the 2018 EIAR.

14.10 References

CSO. (2010) *Census of Agriculture 2010 from the Central Statistics Office* (CSO.ie).

CSO. (2020) *Census of Agriculture 2020 from the Central Statistics Office* (CSO) – available at CSO.ie. (Not included in the 2018 EIAR – it was not available)

CSO. *Average crop yields from 2008 – 2023 – available at CSO.ie*. (extended to 2023 compared to 2015 in the 2018 EIAR)

EPA. (Environmental Protection Agency). (2002 and Draft, September 2015) *Revised Guidelines on the Information to be contained in Environmental Impact Statements*.

EPA. (2003 and Draft, September 2015) *Advice Notes for preparing Environmental Impact Statements*.

EPA. (Draft, May 2017) *Guidelines on the information to be contained in Environmental Impact Assessment Reports*.

EPA. (May 2022) *Guidelines on the information to be contained in Environmental Impact Assessment Reports*. (Not included in the 2018 EIAR – it was not available)

Design Manual for Roads and Bridges, Arriving at Level of Significance – Table 2.1, Volume 2, part 5 of Design Manual for Roads and Bridges.

Teagasc, 2018 - 2022, Teagasc 2022 Publications - *Ballyhaise Dairy Research Farm;* Grass Yields in Ballyhaise Agricultural College, 2018 - *Ballyhaise Open Day Booklet*, (Up-to-date data not included in the 2018 EIAR)

Teagasc 2022, *Teagasc data for grass production at Ballyhaise Agricultural College* (2008 – 2021). (Up-to-date data not included in the 2018 Chapter)

UCD, 2022, *Grass Yields UCD, 2022, Table 4, Lyons Systems Herd Annual Report 2022* https://www.ucd.ie/agfood/t4media/UCD%20Systems%20Herd%20Annual%20Report%202022%20Final%20Published%20.pdf (Up-to-date data not included in the 2018 Chapter)

Electronic Sources

Google Earth (Not included in the list of references in the 2018 EIAR but Google Earth was used as specified in Section 14.2.3 of the 2018 EIAR and Section 14.3.3 of this updated EIAR)

Teagasc Soil Information System. (2024) *Data and Downloads* [online] Available at: http://gis.teagasc.ie/soils/downloads.php