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Western Transport Corridor

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# ENVIRONMENTAL STATEMENT ADDENDUM


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# ENVIRONMENTAL STATEMENT ADDENDUM

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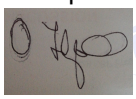
| Signature |  Fitzpatrick, Orla Checker 2019.03.22 11:25:26 | | | |
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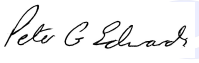
| Signature |  Edwards, Peter Authoriser 2019.03.22 12:18:29 Z | | | |
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# 1. INTRODUCTION

## 1.1. BACKGROUND

1.1.1. WSP, on behalf of the Department for Infrastructure (the Department), undertook and published the Environmental Impact Assessment (EIA) for the A5 Western Transport Corridor (A5 WTC) Environmental Statement in February 2016. An updated Non-Technical Summary (NTS) was published in April 2016. Together, these documents are herein referred to as the ES 2016.

1.1.2. The purpose of the EIA process is to gather environmental information which is then used to inform decision making and the scheme design. The EIA process ensures that potentially significant environmental effects that may be associated with the A5 Western Transport Corridor (Proposed Scheme) are identified and assessed and that mitigation measures to avoid, reduce or compensate impacts are identified and evaluated.

1.1.3. The ES 2016 for the Proposed Scheme contains the results of the assessments undertaken to form an essential part of the information to inform decision making.

1.1.4. This Environmental Statement Addendum (ESA) and accompanying NTS have been prepared to update the ES 2016 in order to provide the Department with up to date information to inform a decision on whether to proceed with the scheme. This ESA should be read in conjunction with the ES 2016 and provides additional information to update the ES 2016. As such, the Transitional Arrangements apply and this ESA is produced in accordance with the requirement of the 2011 EIA Directive 2011/92/EU, as described in Section 1.3 below.

## 1.2. LEGISLATIVE CONTEXT

1.2.1. In November 2017 the Department published its Notice of Intention to Proceed (NIP) with the A5 dual carriageway scheme (A5WTC). At the same time, it made the Direction Order (setting the line of the new road in legislation) for the section between New Buildings and Ballygawley and the Vesting Order purchasing the necessary lands for the construction of Phase 1a (New Buildings to north of Strabane).

1.2.2. A legal challenge to the Department's Decision was submitted by the Alternative A5 Alliance (AA5A) on 22nd December 2017. One area of challenge was in relation to the effects on human beings and the level of assessment of cumulative effects. The comments made in this challenge have been noted and further assessment has now been carried out as reported in Chapter 8 below.

1.2.3. Having given careful consideration to relevant High Court decisions during 2018 as well as the provisions of the Northern Ireland (Executive Formation and Exercise of Functions) Act enacted in November 2018, the Department determined that it was not in the public interest to continue defending the legal challenge brought about by the AA5A. Consequently, at a Court hearing on the 15th November 2018, the Department invited the Court to quash the above-mentioned NIP and this took effect from Friday 16th November 2018.

1.2.4. What this means in practice is that, in terms of process, the Department moves back to a point in time just before the NIP for the Proposed Scheme in November 2017 and, as a result, the Direction

and Vesting Orders for the Proposed Scheme are no longer in force, though the Notices of Intention to Make the Orders still stand.

1.2.5. As a flagship project of the Northern Ireland Executive, a decision on the implementation of the Proposed Scheme remains a priority for the Department.

1.2.6. At the point where a decision is ready to be made and should a Minister for the Department not be in place, the Department will consider whether to issue a decision taking account of the provisions of the above-mentioned NI (Executive Formation and Exercise of Functions) Act 2018 and the associated guidance issued by the Secretary of State. At that time, consideration will also be given to making a new Direction Order (New Buildings to Ballygawley) and a Vesting Order for the lands previously vested for construction of Phase 1A (New Buildings to north of Strabane).

## 1.3. TRANSITIONAL ARRANGEMENTS

1.3.1. Given the date of publication of the ES 2016 of 16th February 2016, it therefore falls within the transitional arrangements of the 2014 EIA Directive (2014/52/EU). The 2014 EIA Directive is clear that where a screening, scoping or ES is submitted prior to the time limit for transposition (16th May 2017), the related provisions of the 2011 EIA Directive (2011/92/EU) should apply:

> *"The related provision of Directive 2011/92/EU prior to its amendment by this Directive should apply to projects for which the screening procedure has been initiated, the scoping procedure has been initiated, (where scoping was requested by the developer or required by the competent authority) or the environmental impacts assessment report is submitted before the time-limit for transition."*

## 1.4. PURPOSE OF THE ES ADDENDUM

1.4.1. Since the publication of the ES 2016 there have been some developments in the environmental baseline and the Proposed Scheme that may influence the previous conclusions and as such this Environmental Statement Addendum (ESA 2019) and accompanying Non-Technical Summary (NTS) have been prepared.

1.4.2. The ESA reflects that time has passed and captures change that has occurred in both the existing environment and also the project delivery process. The focus, as listed below, has been to identify any aspect of the process which has the potential to result in change to the previously assessed impacts of the A5 Western Transport Corridor (Proposed Scheme), as reported in the published Environmental Statement 2016 (ES 2016):

1. Changes to the phased construction timetable;
2. Changes to baseline conditions (including the impacts as a result of quarrying in the townland of Urbalreagh);
3. Changes in legislation and guidelines used in the assessment process; and
4. Updating the cumulative effects assessment.

1.4.3. The scope of the ESA 2019 and the supporting reasoning is outlined in Chapter 2.

## 1.5. SCHEME PHASING

1.5.1. In November 2015, through 'A Fresh Start: The Stormont Agreement and Implementation Plan' the Northern Ireland Executive agreed that, subject to the necessary statutory procedures, construction of the first section of the route, i.e. Newbuildings to north of Strabane, would commence in 2017 with a view to completion by 2019. This section of the Proposed Scheme is now referred to as Phase 1A, with the section from south of Omagh to Ballygawley referred to as Phase 1B.

1.5.2. At the time of publication of the ES 2016, it was anticipated the Proposed Scheme would be constructed in three phases corresponding with the anticipated four-yearly budget periods 2016-2020, 2020-2024 and 2024-2028.

1.5.3. In terms of each of the three phases, Phase 1 would involve construction of sections between the new roundabout north of New Buildings and the proposed grade-separated junction north of Strabane at Ballymagorry and between the proposed grade-separated junction south of Omagh and the proposed roundabout on the existing A4 south-west of Ballygawley. It was anticipated that this phase would be constructed between 2017 and 2019 and would be opened to use in 2019.

1.5.4. Phase 2 would involve construction of a section between the proposed grade-separated junction north of Strabane at Ballymagorry and the proposed grade-separated junction south of Omagh. It was anticipated this phase would be constructed between 2021 and 2023 and would be opened to use in 2023.

1.5.5. Phase 3 would involve construction of a section between the proposed roundabout on the existing A4 south-west of Ballygawley and the tie in with the existing A5 south of Aughnacloy. It was anticipated for assessment purposes that this phase would be constructed between 2026 and 2028 and the phase and fully completed scheme would be opened to use in 2028.

1.5.6. The various assessments were carried out and reported by Phase where appropriate.

1.5.7. As a consequence of delays incurred (refer to Section 1.2 above), the date for commencing construction of Phase 1 has passed and as such the date for completion and opening to traffic will be later than that previously assessed and reported. It has therefore been necessary to revise the assumptions relating to the phasing and timeframe for the construction of the Proposed Scheme. The latest estimate for the construction of each of the four phases is as follows (note that geographical extents of each phase remain the same):

- Phase 1A: - (2019-2022);
- Phase 1B: - (2020-2023);
- Phase 2: - (2023-2025); and
- Phase 3: - (2026-2028).

1.5.8. However, bearing in mind the risks of delay in the statutory processes and the uncertainty of funding allocation, the Department has decided to re-assess the effects of the Proposed Scheme at the final (whole scheme) opening year of 2028. The majority of assessments are not materially affected by the phased construction and the results of the assessments are still valid. However, traffic-related effects (i.e. noise, air quality, water quality and severance) are assessed using the forecast traffic

flows at the opening year and as such these have been assessed for 2028. This equates to a whole scheme assessment (for further information refer to Chapter 2 of this ESA, Scoping).

## 1.6. QUARRYING IN THE TOWNLAND OF URBALREAGH

1.6.1. A sand and gravel quarry is located in the townland of Urbalreagh, to the north west of Newtownstewart on Old Bridge Road, just west of the existing A5.

1.6.2. The site consists of a number of approved extraction areas, settlement ponds, internal access roads and associated infrastructure. The site has been developed continuously since planning permission was granted on 08 April 2003 (planning reference J/2001/0286/F).

1.6.3. The quarry was considered in the ES 2016, and therein assessed accordingly, across the relevant topic chapters. Although the quarry was already active prior to development of the scheme, since the publication of the ES 2016, the quarry has increased in area due to some sections of unauthorised excavation operations which have excavated materials from under the footprint of the Proposed Scheme. The unauthorised quarrying has continued despite interventions by the planning authorities (the Department for Infrastructure and Derry City and Strabane Council). An assessment has been completed to identify any potential impacts that may have occurred due to the unauthorised quarrying if these works are not remediated. This is reported in Quarrying in the townland of Urbalreagh Extraction Impact Report which is available on a5wtc.com (Report Ref: 718736-0000-R-065). The report concludes that the changes as a result of the unauthorised works would not constitute a 'main' effect in accordance with Annex IV and Article 67(5) of the Roads (Northern Ireland) Order 1993.

1.6.4. In April 2015, planning powers were transferred from the Department of the Environment (DoE) to the local authority (Derry City and Strabane Council at this location) and at that time the DoE was investigating unauthorised quarrying on lands not affected by the Proposed Scheme. Whilst the DoE retained this investigation, further unauthorised quarrying resulted in the local council commencing its own investigation. Both the Department for Infrastructure (who have now taken over the planning function on the cessation of the DoE as a functioning body) and the local council are working collaboratively to remedy the unauthorised activities. An Enforcement Notice has been served and following an appeal by one of the parties a Stop Notice was served in February 2019.

1.6.5. The requirements of the Enforcement Notice are to reinstate the ground back to original ground level and if that occurs then the Proposed Scheme would be constructed as intended and the various assessments of impacts would be as reported in the ES 2016. However, whilst there is a possibility that the reinstatement may not have commenced or only be partially completed when funding is provided for this Phase of the Scheme to be constructed, the re-assessment of effects based on the quarried area has been included in all the topics within this ESA. The exact effects of construction of the Proposed Scheme through this area can only be fully evaluated prior to construction commencing, though any reinstatement measures carried out should reduce the effects that constructing the road would have on the local environment.

## 1.7. TRAFFIC FORECASTING

1.7.1. In keeping the traffic assessments and forecasts concurrent over the whole life of the project which extends to 2028 and beyond, the Department has continued to update key areas of base data and associated assessments. One key area requiring regular updating or substantiating is the subject of traffic forecasting. Following on from the statutory process in 2016, the Department updated the traffic forecasting model with new survey information from both automatic traffic counters and roadside interviews. This new model has already been utilised in the preparation of the Outline Business Case (October 2017) and the four reports to Inform an Appropriate Assessment (consulted on in 2017) and presented to the decision maker prior to the Decision to Proceed (November 2017 – see Section 1.2 above). Where applicable, the assessments below have utilised the results from the most recent traffic forecasting model.

## 1.8. ASSUMPTIONS AND LIMITATIONS OF THIS REPORT

1.8.1. The following general assumptions and limitations apply to the assessment presented in this ESA:

- Any commitments made during previous Public Inquiries for the Proposed Scheme are outside the remit of this ESA 2019.
- The baseline data review for all topics has been limited to a review of desk based information only and previously completed on-site surveys.
- Consultation during the preparation of this ESA has been limited due to time constraints on the delivery of this stage of works, as outlined in Section 2.2. Further engagement will be undertaken during the formal consultation period in support of this ESA, including with the relevant transboundary bodies.
- Updated traffic forecasts were developed from a 2015 re-based traffic model. This represented an update to the 2013 base year model which was used to support the 2016 ES.
- The update of the A5WTC traffic model to a 2015 base year utilised traffic data collected in autumn 2015 and spring 2016 comprising Roadside Survey Interviews, volumetric traffic counts and journey time observations.
- The ES 2016 used a previous iteration of the transport model and respective traffic data derived for Scheme assessment at that time, which involved atmospheric dispersion modelling to predict changes in pollutant concentrations relative to sensitive receptors in the projected opening year for each phase of the Proposed Scheme. There have been no further updates made to the ES 2016 baseline air quality dispersion model nor any amendments to the modelling undertaken in 2017 in preparation of the Outline Business Case (OBC). This ESA 2019 allows for a comparison of the ES 2016 and the OBC 2017 for the first fully operational year of the Proposed Scheme, utilising the most recently published emission factors, background pollutant concentrations and $NO_x$ to $NO_2$ calculation to compile a sensitivity analysis, herein presented in this addendum.
- The operational phase noise assessment as part of the ESA 2019 is not based upon the results of the baseline noise survey referenced within the ES 2016. The ESA assessments necessarily adopt a calculated baseline determined via a detailed noise modelling exercise. Therefore, there has been no requirement to undertake any additional baseline noise monitoring as part of this ESA 2019.

- For the cumulative assessment, the assessments have been based on available information for planned/proposed developments from local planning portals, for example in relation to construction and operation timescales, traffic generation and the nature and scale of the development and associated impacts. Where appropriate, qualitative assessments have been completed, based on professional judgment and the specialists' experience of other similar schemes. Furthermore, consultation with local authorities to determine the list of developments for the cumulative effects assessment has not been undertaken, mainly due to time constraints on the delivery of this stage of works. However, the project team has taken a precautionary approach and considered a larger database of developments in the cumulative effects assessment and this professional judgement and local knowledge have been considered sufficient in the timeframe.

# 2. SCOPING

## 2.1. INTRODUCTION

2.1.1. A scoping exercise has been carried out to provide a framework that sought to streamline this ESA, such that only potentially significant changes to the Proposed Scheme and/or impacts were identified and considered.

2.1.2. The premise of the scoping exercise is based on the knowledge of the project team, liaison with promoters of other infrastructure projects, ad hoc communications with landowners, site specific surveys associated with the proposed construction of Phase 1A of the scheme and the preparation of Phase 1B. Taking all the above points into consideration, the project team propose that the majority of assessments have not significantly changed and as such no or minimal additional significant impacts are likely.

## 2.2. CONSULTATION

2.2.1. A wide range of statutory authorities and organisations have been consulted throughout the development of the scheme as part of the studies and assessments which have been undertaken during the preparation of the Orders and ES 2016 for the Proposed Scheme.

2.2.2. During the preparation of this ESA, meetings were held with:

- Northern Ireland Environment Agency (NIEA);
- the Department for Infrastructure (Rivers); and
- Loughs Agency (LA).

2.2.3. The objective has been to:

- update and verify known environmental data relevant to the wider study area (including trans-boundary issues) and specific to the Proposed Scheme;
- seek comment relating to the assessment process, the scope of the ESA and the methods of assessment adopted; and
- discuss any additional mitigation requirements and measures.

## 2.3. SCOPING METHODOLOGY

2.3.1. The scoping exercise for each environmental topic has involved:

- A review of any changes in the design or timing of the Proposed Scheme (i.e. changes to the phasing);
- Identification of any new/revised legislation, standards, guidelines and requirements;
- A desk based review of baseline conditions and previously completed site-specific surveys (including the impacts as a result of quarrying in the townland of Urbalreagh);
- Identification of any further work required to update and provide clarification to the assessments within the ES 2016; and
- A review of the cumulative effects assessment.

2.3.2. The main outcomes of the topic area scoping reviews are provided below and summarised in Table 2.1. A more in-depth summary of the review of the contents of the ES 2016 and supplementary data by the topic area specialists is presented in Appendix A.

2.3.3. The scoping exercise has concluded that the following assessments in the ES 2016 need to be revisited in this ESA:

- Air quality (ES 2016, Chapter 8);
- Cultural heritage (ES 2016, Chapter 9);
- Visual effects (ES 2016, Chapter 10);
- Ecology and Nature Conservation (ES 2016, Chapter 11);
- Noise and vibration (ES 2016, Chapter 13); and
- Interactions and cumulative effects (ES 2016, Chapter 17).

2.3.4. The remaining assessments and proposed mitigations of the ES 2016 stand.

**Table 2-1 - Environment Statement Addendum – Summary of scoping exercise**

| CONSIDERATIONS DURING SCOPING OF THE ESA | | | | | SCOPED IN / OUT OF THE ESA |
|---|---|---|---|---|---|
| **Environmental Topic** | **Relevant updates and/or changes to legislation, policy or guidance** | **Relevant updates and/or changes to baseline environment** | **Relevant updates and/or changes to the scheme (including phasing)** | **Further work required to update the ES 2016 assessment** | |
| **Air Quality** | No material changes | No material changes | Updated assessment required due to changes to traffic modelling as a result of changes to scheme phasing. See Chapter 3. | Yes | IN |
| **Cultural Heritage** | No material changes | Additional cultural heritage features identified. | Updated assessment required due to the identification of additional cultural heritage features within the study area. See Chapter 4. | Yes | IN |
| **Landscape and Visual Effects** | No material changes | No material changes to landscape character baseline.<br>Additional visual receptors identified. | Updated assessment required due to the identification of additional visual receptors within the study area. See Chapter 5. | Yes | IN |
| **Ecology and Nature Conservation** | No material changes | Additional ecological features identified (Local Wildlife Sites). | Updated assessment required due to the identification of additional ecological receptors within the study area. See Chapter 6. | Yes | IN |
| **Geology and Soils** | No material changes | Quarrying in the townland of Urbalreagh does not require full re-assessment. | Update on scheme phasing does not require full re-assessment. | No | OUT |

| CONSIDERATIONS DURING SCOPING OF THE ESA | | | | | SCOPED IN / OUT OF THE ESA |
|---|---|---|---|---|---|
| **Environmental Topic** | **Relevant updates and/or changes to legislation, policy or guidance** | **Relevant updates and/or changes to baseline environment** | **Relevant updates and/or changes to the scheme (including phasing)** | **Further work required to update the ES 2016 assessment** | |
| **Noise and Vibration** | No material changes | No material changes | Updated assessment required due to changes to traffic modelling as a result of changes to scheme phasing. See Chapter 7. | Yes | IN |
| **Effects on All Travellers** | No material changes | No material changes | Update on scheme phasing does not require full re-assessment. | No | OUT |
| **Community and Private Assets** | No material changes | No material changes | Update on scheme phasing does not require full re-assessment. | No | OUT |
| **Road Drainage and Water Environment** | No material changes | No material changes | Update on scheme phasing does not require full re-assessment. | No | OUT |
| **Cumulative Impact** | No material changes | Additional developments requiring assessment. | Update on scheme phasing does not require full re-assessment. | Yes – revision of both types of cumulative effects required. | IN |

### AIR QUALITY

2.3.5. There have been a number of changes and updates to legislation and policy relating to air quality (full information is provided in Chapter 3).

2.3.6. The ES 2016 used a previous iteration of the transport model and respective traffic data derived for the Proposed Scheme at that time, which involved dispersion modelling to predict changes in pollutant concentrations relative to sensitive receptors in the projected opening year for each phase of the Proposed Scheme.

2.3.7. The change to the scheme construction phasing and transport model, as part of the development for the 2017 Outline Business Case (OBC), has resulted in comparative review and sensitivity analysis being undertaken as part of this ESA.

### CULTURAL HERITAGE

2.3.8. There have been no changes or updates to legislation, guidance and/or policy.

2.3.9. The changes to the phasing of the scheme and the works at the quarry in the townland of Urbalreagh do not affect the conclusions stated in the 2016 ES.

2.3.10. The baseline data review has identified five additional non-designated archaeological assets identified from the Monuments and Building Record (MBR) within the 600m wide study area from the centre line of the road. Of these five sites, four relate to battlefield sites within and around Strabane, and one is a post-medieval house. In addition, a sixth additional site, a B+ Listed Building (site reference number 265), has also been identified.

2.3.11. As such, cultural heritage has been scoped into this ESA. The findings of the review are presented in Chapter 4 of this report.

### LANDSCAPE AND VISUAL EFFECTS

2.3.12. There have been no new or major updates of the Landscape Institute Landscape and Visual Impact Assessment (LVIA) guidelines issued since the ES 2016, however new guidance on the visual representation of development proposals (Landscape Institute Technical Guidance Note 02/17 March 2017) has been introduced.

LANDSCAPE

2.3.13. There are no known changes of legislation or landscape designations which would materially affect the baseline condition for the landscape assessment. There are no new or planned developments, including the works at the quarry in the townland of Urbalreagh, which would give cause to alter the extent, sensitivity or capacity to accommodate change of the type proposed for the landscape character zones (LCZs) as described in the ES 2016.

2.3.14. In respect of the landscape context of the Proposed Scheme Corridor, the following relevant documents have been published since the ES 2016:

- Northern Ireland Regional Landscape Character Assessment (NIRLCA) (Northern Ireland Environment Agency NIEA, (August 2015); and

- Landscape Character Review for Fermanagh and Omagh (LCRFO) (Fermanagh & Omagh District Council, September 2018).

2.3.15. The NIRLCA is a regional level development of the previously published Northern Ireland Landscape Character Assessment (NILCA) 2000, with the base information for the previous 130 Local Landscape Character areas (LCAs) used to inform the 26 regional landscape character areas of the NIRCLA. Its purpose is to provide an evidence base which can be used equally by planners, developers and the public and to enable people to make informed decisions concerning the planning, management and protection of Northern Ireland's landscapes. It provides a strategic overview of the landscape, to be complemented by more detailed local studies in the future.

2.3.16. The LCRFO has been based on the content of the NILCA 2000, comprising a review and adaptation of the LCAs which are wholly within or in part of Fermanagh and Omagh, in order to capture current landscape character and sensitivities along with the provision of up to date development management guidance. Management guidelines for LCAs relevant to the Proposed Scheme corridor (LCA22 Omagh, LCA16 Brougher Mountain and Slievemore and LCA 26 Bessy Bell and Gorton) are provided. Reviews of both the NIRLCA and LCRFO have concluded that neither publication would give reasonable cause to amend the extent or sensitivities of the LCZ's as described within the ES 2016. The LCZs demonstrate a correlation with the regional character areas now defined within the NIRLCA, while their sub-division retains an affinity with the LCAs identified in the NILCA 2000.

2.3.17. There has been no change to the legislative or planning context in respect of landscape. There has been no subsequent modification to the extents of the Sperrin AONB or the Area of High Scenic Value bordering the River Foyle to the south of Londonderry.

2.3.18. The assessment of landscape effects consequently will not change from that described within the ES 2016.

VISUAL IMPACT

2.3.19. There are a number of new or planned developments within the 250m study area that would be sensitive to visual impacts, although there are no large new clusters or groups of visual receptors likely to receive predicted residual effects of moderate adverse or greater.

2.3.20. As such, an update of the Visual Effects element of the chapter is required (see Chapter 5 of this report).

## ECOLOGY AND NATURE CONSERVATION

2.3.21. There have been some changes and updates to legislation and policy relating to ecology and nature conservation as listed in Chapter 6).

2.3.22. Overall, whilst updates and amendments to legislation and policy have been implemented, none of these changes are considered to be significant and the conclusions as stated in the 2016 ES are not affected.

2.3.23. A review of the baseline environment using aerial photography has been completed, in addition to publicly available databases where a number of new sites (Local Wildlife Sites) have been identified.

2.3.24. As such, ecology and nature conservation has been scoped into this ESA. The findings of the review are presented in Chapter 6 of this report.

### GEOLOGY AND SOILS

2.3.25. A review of the baseline environment and the guidance and legislation informing the assessment process has been undertaken with regard to the ES published in 2016.

2.3.26. There have been no legislation or policy changes, or changes to the baseline conditions that effects the content and conclusion of the ES 2016 in terms of Geology and Soils receptors. The changes to the phasing of the scheme and the works at the quarry in the townland of Urbalreagh do not affect the conclusions stated in the 2016 ES.

2.3.27. There have been updates to the relevant screening values for both human health risk and risk to aquatic environments since 2016. A review of the original contaminant exceedences has been undertaken including a comparison with the updated screening values. It is concluded that these updated screening values are not considered to be significant in the sense that there is no change to the conclusions of the ES 2016 with regard to overall risk to human health and the aquatic environment.

2.3.28. The content and outcome of the ES 2016 are still relevant in terms of Geology and Soils receptors and no amendments are required.

### NOISE AND VIBRATION

2.3.29. The noise chapter of the ESA (Chapter 7) considers each of the noise and vibration impacts as assessed within Chapter 13 of the ES 2016, and whether subsequent revisions made to the scheme construction phasing and transport model, as part of the development for the 2017 Outline Business Case (OBC), give rise to a change in the significance of effects as reported within the ES 2016.

2.3.30. Where it is considered that the baseline or scheme changes since the publication of the ES 2016 do not have the potential to have a significant bearing upon the results of the completed assessments, further consideration to those impact areas has been scoped-out of this ESA 2019. Where it is considered that the baseline or scheme changes since the publication of the ES 2016 do have the potential to have a significant bearing upon the results of any of the above assessments, these impact areas have been considered further within this ESA 2019.

### EFFECTS ON ALL TRAVELLERS

2.3.31. A review of the baseline environment and the guidance and legislation informing the assessment process has been undertaken with regard to the ES published in 2016.

2.3.32. There have been no legislation or policy changes, or changes to the baseline conditions that effects the content and conclusion of the ES 2016 in terms of effects on all travellers. The changes to the phasing of the scheme and the works at the quarry in the townland of Urbalreagh do not affect the conclusions stated in the 2016 ES. The results of this exercise are presented in Appendix A.

2.3.33. The content and outcome of the ES 2016 are still relevant in terms of effects on all travellers and no amendments are required.

## COMMUNITY AND PRIVATE ASSETS

2.3.34. A review of the baseline environment and the guidance and legislation informing the assessment process has been undertaken with regard to the ES published in 2016.

2.3.35. There have been no legislation or policy changes, or changes to the baseline conditions that effects the content and conclusion of the ES 2016 in terms of Community and Private Assets receptors. The changes to the phasing of the scheme and the works at the quarry in the townland of Urbalreagh do not affect the conclusions stated in the 2016 ES. The results of this exercise are presented in Appendix A.

2.3.36. The content and outcome of the ES 2016 are still relevant in terms of Community and Private Assets and no amendments are required.

## ROAD DRAINAGE AND WATER ENVIRONMENT

2.3.37. There have been a number of amendments to legislation, as detailed in Appendix A.

2.3.38. The main change in legislation/guidance associated with Road Drainage and the Water Environment relates to the update of climate change predictions, with UKCP18 replacing UKCP09 at the end of November 2018. In terms of identifying risk, the projections have increased the allowance for climate change associated with rainfall and sea levels. UKCP18 is a document that the local authorities have to consider in developing their new Local Development Plans however these Plans have not been adopted yet. The Department has also recently published *Flood Risk Guidance in relation to Allowance for Climate Change in Northern Ireland* guidelines. These guidelines include Transitional Arrangements and as the A5WTC is already in progress and adopting the new guidelines would incur delays to completion then the scheme is not required to be updated in accordance with these guidelines.

2.3.39. NIEA has revised boundaries of some Water Framework Directive (WFD) surface water catchment areas since ES 2016. The former 'Foyle and Faughan Estuaries' catchment from ES 2016 has been split into two smaller areas, of which the 'Upper Foyle' is adjacent to the Proposed Scheme. The NIEA has also combined two catchments which were reported in ES 2016 as 'River Strule' and 'River Strule (Heavily Modified)' to form the single 'Strule River' catchment. The Upper Foyle and Strule River overall status in 2015 were both Moderate, which matches the overall status of the predecessor catchments reported in ES 2016.

2.3.40. Since ES 2016, surface water and groundwater body overall status has been re-evaluated by NIEA, with the majority of bodies unchanged. There were upgrades in overall status for seven surface waters, with downgraded overall status for two groundwater bodies, as detailed in Appendix A.

2.3.41. With regard to water quality monitoring and private well monitoring - additional project baseline data has been collected (and is scheduled to continue to be collected) in relation to the monitoring of surface water quality and private well supplies since 2016.

2.3.42. Landholders have installed/decommissioned wells, or have plans to undertake such works before the construction of the Proposed Scheme. Therefore, with reference to ES 2016 there have been changes in overall well numbers and individual well details.

2.3.43. The minor alterations to baseline conditions are unlikely to materially influence the significance outcomes of the various elements of the ES 2016 Road Drainage and Water Environment assessment, and does not alter the overall conclusions of the ES 2016.

## INTERACTIONS AND CUMULATIVE EFFECTS

2.3.44. The assessment considers two types of cumulative impact, in line with Design Manual for Roads and Bridges ("DMRB") Volume 11, Section 2, Part 5:

- Cumulative impacts from a single project (the combined action of different environmental topic-specific impacts) upon a single resource/receptor; and
- Cumulative impacts from different projects in combination with the project being assessed (the combined action of a number of different projects, cumulatively with the project being assessed, on a single resource/receptor. This can include multiple impacts of the same or similar type from a number of different projects upon the same receptor/resource).

2.3.45. The ES 2016 (Chapter 17) reported on the cumulative effects from the Scheme and as a result of other projects. This assessment has been revisited and extended within this ESA.

2.3.46. A number of developments/projects, in addition to those assessed in the ES 2016 have been identified during this scoping exercise. These require consideration and as such the cumulative effects from different projects component has also been updated in this ESA.

2.3.47. The findings of the assessment are presented in Chapter 8 of this report.

# 3. AIR QUALITY

## 3.1. INTRODUCTION

3.1.1. This chapter of the ESA provides a review of the potential impacts of local air quality on the Proposed Scheme resulting from revisions made since the ES 2016, specifically regarding the revised phasing of the Proposed Scheme.

3.1.2. It summarises the conclusions of the ES 2016, presents a review of changes to legislation, planning policy framework, baseline conditions and assessment methods and provides an update on further assessment carried out since the publication of the ES 2016.

3.1.3. The ES 2016 used a previous iteration of the transport model and respective traffic data derived for Scheme assessment at that time, which involved dispersion modelling to predict changes in pollutant concentrations relative to sensitive receptors in the projected opening year for each phase of the Proposed Scheme.

3.1.4. Emissions were re-modelled in 2017 for the Outline Business Case (OBC 2017) and the Report to Inform an Appropriate Assessment for Tully Bog Special Area of Conservation (SAC).

3.1.5. The completed (whole) scheme has been examined in this chapter as this realises the first full year of Proposed Scheme opening and allows a comparison of the ES 2016 with the OBC 2017 to be carried out, for the operational phase of development.

## 3.2. LEGISLATION AND POLICY

### REVIEW OF CHANGES TO LEGISLATIVE AND PLANNING POLICY

3.2.1. Appendix 8A of the ES 2016 presents the legislative context and assessment guidance used to inform the air quality assessment. The following legislation and guidance have been updated since 2016 (further information on each is provided in Appendix B):

- The Air Quality Standards (Amendment) Regulations (Northern Ireland) 2017[1] update the Air Quality Standards Regulations (Northern Ireland) 2010[2]
- A Clean Air Strategy[3] was published by Department for Environment, Food and Rural Affairs (DEFRA, 2019)

1 Statutory Rules of Northern Ireland (2017) *NISR 2017/02 Air Quality Standards (Amendment) Regulations (Northern Ireland) 2017* [online] http://www.legislation.gov.uk/nisr/2017/2/pdfs/nisr_20170002_en.pdf

2 Statutory Rules of Northern Ireland (2010) *NISR 2010/188 The Air Quality Standards Regulations (Northern Ireland) 2010* [online] http://www.legislation.gov.uk/nisr/2010/188/pdfs/nisr_20100188_en.pdf

3 Department for Environment, Food and Rural Affairs (DEFRA) (2019) *Clean Air Strategy 2019*, January 2019 [online] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/770715/clean-air-strategy-2019.pdf

- The Northern Ireland Executive's draft Programme for Government (PfG)[4] (May 2016)
- The UK Air Quality Action Plan was published by DEFRA[5] (2017).

3.2.2. Other legislation and policy relevant to air quality has not been amended since the submission of the ES 2016 and remain valid.

## REVIEW OF METHODOLOGY AND SIGNIFICANCE CRITERIA

### Design Manual for Roads and Bridges (DMRB) and Interim Advice Notes (IANs)

3.2.3. The assessment follows the same methodology and guidance adopted for Chapter 8 of the ES 2016, namely:

- Design Manual for Roads and Bridges, Volume 11, Section 3, Part 1, HA207/07 'Air Quality' (DMRB HA207/07)[6] ;
- Interim Advice Note (IAN) 170/12v3[7] on the impact of future alternative nitrogen dioxide ($NO_2$) projections; and
- IAN 174/13[8] on the evaluation of significance of local air quality effects.

3.2.4. The Department for the Environment, Food and Rural Affairs (DEFRA) released an Air Quality Action Plan in 2017,[9] which set out a national plan to improve air quality and achieve compliance with the EU Limit Values set out in EU Directive 2008/50/EC[10] within the shortest feasible timescale. Following the release of the Air Quality Action Plan, DEFRA released a new set of Pollution Climate Mapping (PCM) data in August 2017.

3.2.5. At the time of production of the ES 2016, a new version of IAN 175/13[11] was and is still pending, however the processes within the new IAN have been completed for this assessment. IAN 175/13

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4 Northern Ireland Executive (2016) *Draft Programme for Government Framework 2016-21,* May 2016 [online] https://www.northernireland.gov.uk/sites/default/files/consultations/newnigov/draft-pfg-framework-2016-21.pdf

5 DEFRA (2017) *UK Plan for tackling roadside nitrogen dioxide concentrations – an overview,* July 2017 [online] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/633269/air-quality-plan-overview.pdf

6 Highways Agency (2007) *Design Manual for Roads and Bridges Volume 11, Section 3 Part 1 'Air Quality' (HA207/07),* May 2007 [online] http://www.standardsforhighways.co.uk/ha/standards/dmrb/vol11/Section3/ha20707.pdf

7 Highways Agency (2012) *Interim Advice Note 170/12 – Updated air quality advice on the assessment of future $NO_x$ and $NO_2$ projections for users of DMRB Volume 11, Section 3 Part 1 'Air Quality' (HA207/07),* November 2013 [online] http://www.standardsforhighways.co.uk/ha/standards/ians/pdfs/ian170v3.pdf

8 Highways Agency (2013) *Interim Advice Note 174/13 - Updated advice for evaluating significant local air quality effects for users of DMRB Volume 11, Section 3, Part 1 'Air Quality' (HA207/07)*, June 2013 [online] http://www.standardsforhighways.co.uk/ha/standards/ians/pdfs/ian174.pdf

9 DEFRA (2017) *UK Plan for tackling roadside nitrogen dioxide concentrations – detailed plan,* July 2017 [online] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/633270/air-quality-plan-detail.pdf

10 European Committee (2008) *Directive 2008/50/EC of the European Parliament and of the Council of 21 May 2008 on ambient air quality and cleaner air for Europe* (Café Directive), May 2008 [online] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32008L0050&from=en

11 Highways Agency (2013) *Interim Advice Note 175/13 - Updated air quality advice on risk assessment related to compliance with the EU Directive on ambient air quality and on the production of Scheme Air Quality Action Plans for user of DMRB Volume 11, Section 3, Part 1 'Air Quality' (HA207/07),* June 2013 [online] http://www.standardsforhighways.co.uk/ha/standards/ians/pdfs/ian175.pdf

allows a competent assessor to undertake and report on the risk of the Scheme of being non-compliant with EU Directive 2008/50/EC[10].

3.2.6. An analysis of compliance risk has been included in Section 3.4 which uses the updated PCM model from August 2017 to form the assessment.

**Local Air Quality Management (LAQM)**

3.2.7. In April 2016, the UK Local Air Quality Management (LAQM) Technical Guidance (LAQM.TG (09)) document was superseded by LAQM.TG (16)[12]. LAQM is the statutory process by which local authorities monitor, assess and act to improve local air quality.

3.2.8. The document provides updated guidance to support local authorities undertaking review and assessment of air quality and outlines the respective technical approaches used to carry out air quality assessment, including monitoring, dispersion modelling and model verification.

3.2.9. In November 2017, several updates were made to the current LAQM assessment tools provided by DEFRA, including:

- Ambient air pollutant background maps were updated to 2015 reference base year, with subsequent years' data published up to and including 2030 for $NO_x$, $NO_2$, $PM_{10}$ and $PM_{2.5}$;
- Revised $NO_2$ Adjustment for $NO_x$ Sector Removal Tool (v6.0) for use with the updated background maps;
- An updated version of the Emissions Factors Toolkits (EFT v8.0.1); and
- Revised $NO_x$-$NO_2$ Calculator (v6.1) for use with the 2015 based background maps and outputs of atmospheric dispersion modelling (i.e. vehicle contributions of $NO_x$ from modelled roads).

3.2.10. A summary of the version changes to the air quality assessment tools utilised within the published 2016 ES, 2017 OBC and this ESA (2019) is provided in Table 3-1.

**Table 3-1 - Comparison of DEFRA Review and Assessment Tools**

| Review and Assessment Tool | ES (2016) | OBC (2017) | ESA (2019) |
|---|---|---|---|
| **Background Pollutant Concentrations** | 2011 based (2011 – 2030) | 2013 based (2013 – 2030) | 2015 based (2015 – 2030) |
| **Emissions Factor Toolkit** | V6.0.1 | V7.0 | V8.0.1 |
| **$NO_x$ to $NO_2$ calculator** | V4.1 | V5.1 | V6.1 |

12 DEFRA (2018) *Part IV of the Environment Act 1995, Environment (Northern Ireland) Order 2002 Part III: Local Air Quality Management Technical Guidance LAQM.TG (16),* February 2018 https://laqm.defra.gov.uk/documents/LAQM-TG16-February-18-v1.pdf

### Land-Use Planning Guidance Update

3.2.11. Although the significance of the Proposed Scheme was determined through application of IAN 174/13[8], Appendix 8F of the ES 2016 refers to the application of the significance criteria contained within the Environmental Protection UK (EPUK) planning for air quality document[13].

3.2.12. An update to this guidance was produced by EPUK and the Institute of Air Quality Management (IAQM)[14] for the consideration of air quality within the land-use planning and developmental control processes. Impacts have been described in accordance with the updated EPUK and IAQM guidance, with the impact descriptors provided in Table 3-2. This guidance has been followed to determine if air quality impacts are likely to give rise to a significant effect, which may be adverse or beneficial.

3.2.13. For this ESA, the percentage change in concentration (relative to the assessment criteria) has been considered as the impact magnitude of change and terminology has been assigned in keeping with the overall theme of the ES 2016, for comparison.

**Table 3-2 – Impact Descriptors for Individual Receptors**

| Long term average concentration at receptors in assessment year | % Change in Concentration Relative to AQAL | | | |
|---|---|---|---|---|
| | 1 | 2-5 | 6-10 | > 10 |
| 75% or less of AQAL | Negligible | Negligible | Slight / Minor | Moderate |
| 76-94% AQAL | Negligible | Slight / Minor | Moderate | Moderate |
| 95-102% of AQAL | Slight / Minor | Moderate | Moderate | Substantial |
| 103-109% of AQAL | Moderate | Moderate | Substantial | Substantial |
| 110% or more of AQAL | Moderate | Substantial | Substantial | Substantial |

Notes - AQAL = Air Quality Assessment Level, which for this assessment related to the UK Air Quality Strategy objectives (see Table 3-3). Where the % change in concentrations is <0.5%, the change is described as 'Negligible' regardless of the concentration. When defining the concentration as a percentage of the AQAL, 'without scheme' concentration should be used where there is a decrease in pollutant concentration and the 'with scheme;' concentration where there is an increase. Where concentrations increase, the impact is described as adverse and where it decreases as beneficial.

3.2.14. The EPUK / IAQM guidance[14] states that for most road transport related emissions, long-term average concentrations are the most useful for evaluating the severity of impacts. The above criteria are only intended for use with annual mean concentrations.

3.2.15. The guidance does not include criteria for determining the significance of the effect on hourly mean $NO_2$ concentrations or daily mean $PM_{10}$ concentrations. The significance of effects of hourly mean

13 Environmental Protection UK (EPUK) (2010) *Development Control: Planning For Air Quality (2010 Update),* April 2010 [online] https://www.environmental-protection.org.uk/wp-content/uploads/2013/07/EPUK-Development-Control-Planning-for-Air-Quality-2010.pdf

14 EPUK and IAQM (2017) *Land-Use Planning & Development Control: Planning For Air Quality,* January 2017 [online] http://www.iaqm.co.uk/text/guidance/air-quality-planning-guidance.pdf

$NO_2$ and daily mean $PM_{10}$ concentrations rising from the operational phase have therefore been determined qualitatively using professional judgement and the general principles described above.

**Inclusion of $PM_{2.5}$**

3.2.16. Chapter 8 of the ES 2016 focussed on traffic-related pollutants nitrogen dioxide ($NO_2$) and particulate matter with a mean aerodynamic diameter of 10 µm or less ($PM_{10}$), within the context of respective annual and short-term mean national Air Quality Objectives (AQO).

3.2.17. An annual mean limit value for $PM_{2.5}$ was introduced for the protection of human health by EU Directive 2008/50/EC[10] and made law by The Air Quality Standards Regulations (Northern Ireland) 2010[2].

3.2.18. The air quality assessment was completed in accordance with the DMRB HA207/07[6], which states that "*the pollutants of most concern for human health near roads are $NO_2$ and $PM_{10}$.*" These two pollutants formed the focus of air quality assessment reported in the ES 2016 and as such, did not consider the fraction of particulate matter with a mean aerodynamic diameter of less than 2.5 µg ($PM_{2.5}$).

3.2.19. With the introduction of $PM_{2.5}$ as an AQO, the atmospheric dispersion modelling approach reported in Chapter 8 of the ES 2016 was updated to include $PM_{2.5}$ from vehicle emissions, the results of which are presented in Section 3.4 of this ESA.

3.2.20. A summary of the current AQOs pertinent to the assessment are provided in Table 3-3.

**Table 3-3 – National Air Quality Objectives and European Directive Limit Values**

| Pollutant | Objective | Measured As | To be achieved and maintained thereafter | |
|---|---|---|---|---|
| | | | Air Quality Strategy | 2008/50/EC |
| **National Air Quality Objectives and European Directive Limit Values for the protection of human health** | | | | |
| **Nitrogen Dioxide ($NO_2$)** | 40 µg/m$^3$ | annual mean | 31.12.2005 | 01.01.2010 |
| | 200 µg/m$^3$ not to be exceeded more than 18 times a year | 1-hour mean | 31.12.2005 | 01.01.2010 |
| | (60 µg/m$^3$ – Indicator of Potential Exceedances of Short-Term $NO_2$ Objective) | | | |
| **Particulate Matter ($PM_{10}$)** | 40 µg/m$^3$ | annual mean | 31.12.2004 | 01.01.2005 |
| | 50 µg/m$^3$ not to be exceeded more than 35 times a year | 24-hour mean | 31.12.2004 | 01.01.2005 |
| | (32 µg/m$^3$ – Indicator of Potential Exceedances of Short-Term $PM_{10}$ Objective) | | | |
| **Particulate Matter ($PM_{2.5}$)** | 25 µg/m$^3$ | annual mean | 2020 | Target Value 25 µg/m$^3$ - 2010 |

3.2.21. Annex B of IAN 174/13[8] (adopted by Director of Engineering Memorandum (DEM) 178/19) states that, *"Current DMRB air quality assessment guidance (HA207/07) and associated Interim Advice Notes (IANs) do not require the assessment of $PM_{2.5}$. Accordingly, the evaluation of significant $PM_{2.5}$ air quality effects is not considered in this IAN."*

3.2.22. This chapter therefore reports on annual mean $PM_{2.5}$ concentrations but does not use the findings to form a basis or judge on the significance of the Proposed Scheme, in adherence to IAN 174/13[8].

**Comparison of local air quality assessment results**

3.2.23. A high-level comparison exercise between the ES 2016 local air quality assessment and the OBC 2017 modelling exercise forms the basis of this chapter of the ESA, whereby the most recently available background pollutant mapping data provided by DEFRA was incorporated into each respective assessment to provide updated total annual mean concentrations of $NO_2$, $PM_{10}$ and $PM_{2.5}$.

3.2.24. Section 3.4 and Appendix B of this ESA provides the narrative and results from the ES 2016 and the OBC 2017, based on the update of 2015-based background pollutant concentrations for the opening year of the Scheme (2028) and with the EPUK/IAQM guidance[14] significance criteria applied to allow for the comparative approach to be adopted.

**Further modelling exercise undertaken for the Tully Bog Special Area of Conservation (SAC)**

3.2.25. In support of the Habitats Regulation Assessment (HRA)[15],[16] specific to the Tully Bog Special Area of Conservation (SAC), further detailed atmospheric dispersion modelling was undertaken to ascertain the potential impact of Nitrogen (N) deposition associated with operation of the Proposed Scheme.

3.2.26. Modelling was undertaken for the opening year of the Proposed Scheme (2028), based on the latest traffic flow dataset produced as part of the OBC in 2017. Further information is provided in Section 3.4 of this ESA and a summary of the results garnered from the dispersion modelling assessment for the Tully Bog SAC is presented in Appendix B.

## 3.3. BASELINE CONDITIONS

### LOCAL AUTHORITY LAQM REVIEW AND ASSESSMENT

3.3.1. All local authorities are required to undertake regular reviews of air quality within their regions and assess their compliance with the AQOs.

3.3.2. A summary of the respective local authority LAQM Review and Assessment information, relative to the Proposed Scheme is provided below.

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15 WSP, on behalf of Department for Infrastructure (2017) *Habitats Regulations Assessment Summary Report: 718736-3000-R-024 A5WTC,* November 2017 [online] http://a5wtc.com/Documents/6737/Download

16 WSP, on behalf of Department for Infrastructure (2017) *Report of Information to Inform an Appropriate Assessment: 718736-3000-R-022 Tully Bog Special Area of Conservation,* November 2017 [online] http://a5wtc.com/Documents/6728/Download

**Derry City and Strabane District Council**

3.3.3. The latest LAQM review and assessment document published by Derry City and Strabane District Council is the 2018 Updating and Screening Assessment (USA)[17].

3.3.4. The 2018 USA provides the following comments:

- *"This report confirms that air quality within Derry City and Strabane District Council area continues to meet the relevant air quality objectives at locations of relevant exposure, except for locations within existing Air Quality Management Areas (AQMAs);*
- *There were no exceedances of any objectives outside the existing AQMA boundaries;*
- *The Council is now in process of reducing the extent of the Spencer Road AQMA and revoking the Strand Road AQMA as well as the three AQMAs in Strabane, Newtownstewart and Castlederg*."

3.3.5. No automatic / continuous monitoring within the Proposed Scheme study area is undertaken for $NO_2$ by Derry City and Strabane District Council, however there is a continuous analyser situated within the Strabane AQMA, at Springhill Park, which monitors $PM_{10}$. The respective annual mean concentrations and 24-hour mean number of exceedances reported at this site between 2013 and 2017 are provided in Table 3-4.

**Table 3-4 – Derry City and Strabane District Council – Automatic Monitoring of $PM_{10}$**

| Site ID | Site Type | Valid DC% (2017) | 2013 | 2014 | 2015 | 2016 | 2017 |
|---|---|---|---|---|---|---|---|
| **Annual Mean Concentrations** | | | | | | | |
| **Springhill Park, Strabane** | **Urban Background** | **95%** | 20 | 17 | 18 | 18 | 15 |
| **Number of Exceedances of 24-hr Mean (50 µg/m$^3$)** | | | | | | | |
| **Springhill Park, Strabane** | **Urban Background** | **95%** | 4 | 2 | 0 | 3 | 2 |

3.3.6. Concentrations at Springhill Park show a general downward trend over the five year period reviewed. The Springhill Park monitoring site has been below the annual mean objective in all years (2013-2017). There were two exceedances of the 24-hour mean objective at the Springhill Park site in 2017, which is well below the allowed number of 35 days per calendar year.

3.3.7. Passive diffusion tube monitoring is carried out by Derry City and Strabane District Council, however none of these monitoring sites are situated within the Proposed Scheme study area (see Figure 8.1 of ES 2016).

[17] Derry City and Strabane District Council (2018) *2018 Updating and Screening Assessment for Derry City and Strabane District Council,* June 2018 [online] http://www.airqualityni.co.uk/assets/documents/dc-reports/Derry_City_and_Strabane_District_Council_2018_USA_Report.pdf

### Fermanagh and Omagh District Council

3.3.8. A review of the latest LAQM report published by Fermanagh and Omagh District Council, the 2017 Air Quality Progress Report[18] confirmed there are no AQMAs declared within the district.

3.3.9. The progress report determined that there have been no significant changes to sources of air pollution in the Fermanagh and Omagh District Council area since the last Progress Report and concludes that the relevant AQOs are being met for the prescribed pollutants.

3.3.10. No monitoring is carried out by Fermanagh and Omagh District Council as part of their LAQM commitments.

### Mid Ulster District Council

3.3.11. The latest LAQM review and assessment document published by Mid Ulster District Council is the 2017 Air Quality Progress Report[19].

3.3.12. The report states that, *"Diffusion Tube monitoring at 8 locations within the former Dungannon and South Tyrone Borough Council's area has demonstrated that there are 2 sites where $NO_2$ levels exceeded the objective limit of 40 µg/m$^3$; namely Newell Road, Dungannon and Charlemont Street in Moy."*

3.3.13. The 2017 Air Quality Progress Report[19] confirms that although there is no automatic monitoring undertaken in the Mid Ulster district, there are a number of passive monitoring sites within the council area. These are in Magherafelt, Moneymore, Cookstown, Dungannon and Moy and are not contained within the Proposed Scheme study area (see Figure 8.1 of ES 2016).

## PROJECT SPECIFIC MONITORING

3.3.14. A project specific monitoring study was undertaken using a network of passive diffusion tubes between November 2013 and May 2014. Appendix 8B of the ES 2016 gives further details on the project specific monitoring carried out in 2014.

3.3.15. No updated scheme specific monitoring has since been undertaken.

## AIR QUALITY MANAGEMENT AREAS

3.3.16. Since the publication of the ES 2016, there has been no further declaration of AQMAs within the Proposed Scheme study area (see Figure 8.1 of ES 2016) and the two existing AQMA designations remains valid, as outlined below:

- Strabane AQMA encompasses most of Strabane to the south of Railway Street/Newtown Street.

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18 Fermanagh and Omagh District Council (2017) *2017 Air Quality Progress Report for Fermanagh and Omagh District Council*, December 2017 [online] http://www.airqualityni.co.uk/assets/documents/dc-reports/Fermanagh_and_Omagh_2017_report.pdf

19 Mid Ulster District Council (2017) *2017 Air Quality Progress Report*, November 2017 [online] http://www.airqualityni.co.uk/assets/documents/dc-reports/Mid_Ulster_2017_Report.pdf

- Newtownstewart AQMA encompasses the majority of Newtownstewart to the southwest of the River Strule.

3.3.17. Both AQMAs were declared on the basis that they would exceed the $PM_{10}$ national air quality objectives. However, Derry City and Strabane District Council have since stated that these AQMAs will be revoked.

## POLLUTANT CLIMATE MAPPING

3.3.18. Information on areas that are exceeding the European Union limit value thresholds can be sourced from DEFRA's Pollutant Climate Mapping (PCM) model whereby projections for concentrations of annual mean $NO_x$ and $NO_2$ have been modelled across the UK between 2017 and 2030 inclusive. The data generated were used to inform DEFRA's UK Plan for tackling roadside $NO_2$ concentrations[5,9].

3.3.19. The PCM road links located within the Proposed Scheme study area (see Figure 8.1 of ES 2016), for which a roadside $NO_2$ concentration is produced by PCM modelling were identified. The respective modelled roadside $NO_2$ concentration for the current year (2019) and opening year (2028) are given in Table 3-5 and presented in Figure 3.1 (Appendix E).

**Table 3-5 – DEFRA PCM Model Links in Proposed Scheme Study Area (2017 PCM Model)**

| PCM Model road links (CENSUS ID) | Road Name / Number | 2019 Current Year Roadside $NO_2$ (µg/m$^3$) | 2028 Opening Year Roadside $NO_2$ (µg/m$^3$) |
|---|---|---|---|
| **902645** | A5 | 28.0 | 16.7 |
| **902644** | A5 | 27.8 | 17.2 |
| **902659** | A5 | 23.0 | 14.7 |
| **902391** | A5 | 20.6 | 12.9 |
| **902649** | A5 | 20.5 | 12.7 |
| **902660** | A5 | 20.4 | 11.7 |
| **902648** | A5 | 20.4 | 12.6 |
| **902626** | A5 | 16.5 | 9.7 |
| **902628** | A505 | 14.9 | 9.0 |

3.3.20. Based on the 2019 $NO_2$ projections data, roadside $NO_2$ concentrations modelled within the PCM model for those road links that are situated within the Proposed Scheme study area are well below the annual mean limit value (40 µg/m$^3$). The highest roadside annual mean $NO_2$ concentration for 2019 is 28.0 µg/m$^3$ along the A5 Great Northern Road, from Kelvin Road junction to before the Tamlaght Road / Railway Terrace junction, in the town of Omagh.

## BACKGROUND POLLUTANT CONCENTRATIONS

3.3.21. Background pollutant concentration maps are provided to assist local authorities in support of Review and Assessment of local air quality.

3.3.22. Table 8.2 of the ES 2016 provided average, minimum and maximum annual mean background concentrations for $NO_X$, $NO_2$ and $PM_{10}$, for a base year of 2013 and the whole scheme opening year of 2028, which were derived from the 2011-based background pollutant maps. The background

concentrations covered the extents of the ES 2016 air quality study area (See Figure 8.1 of ES 2016).

3.3.23. The maximum background concentrations quoted for $NO_2$ and $PM_{10}$ were found to be below the respective annual mean AQOs.

3.3.24. Since then, there has been two updates to the background pollutant concentrations for use in air quality assessment. The latest are based on a 2015 reference year, covering the period 2015 to 2030 for $NO_x$, $NO_2$, $PM_{10}$ and $PM_{2.5}$ and are produced in line with the baseline projections used in the 2017 national air quality plan for $NO_2$[5,9].

3.3.25. Table 3-6 presents the average, maximum and minimum 2011-based and 2013-based background concentrations for the base year of 2013 and opening year of 2028, including $PM_{2.5}$ concentrations which cover the Proposed Scheme study area considered in the 2016 ES (see Figure 8.1 of ES 2016).

3.3.26. Table 3-6 also includes the 2015-based background pollutant concentrations for 2015 and 2028.

3.3.27. The change in the average, maximum and minimum backgrounds are identified for the projected year of 2028 between:

- 2013-based vs 2011-based average, minimum and maximum concentrations; and
- 2015-based vs 2011-based average, minimum and maximum concentrations.

**Table 3-6 – Comparison of DEFRA Annual Mean Background Pollutant Concentrations**

| 1km² grid | Background Pollutant | Background pollutant concentration (µg/m³) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 2011-based | | 2013-based | | 2015-based | | Change in 2028 projections (µg/m³) | |
| | | 2013 | 2028 | 2013 | 2028 | 2015 | 2028 | 2013v2011 | 2015v2011 |
| Max | $NO_x$ | 12.85 | **8.56** | 13.19 | **7.64** | 14.24 | **9.52** | -0.91 | 0.97 |
| | $NO_2$ | 9.80 | **6.67** | 9.92 | **5.86** | 10.64 | **7.29** | -0.82 | 0.62 |
| | $PM_{10}$ | 12.25 | **11.51** | 13.04 | **11.96** | 10.55 | **9.56** | 0.46 | -1.95 |
| | $PM_{2.5}$ | 7.70 | **7.00** | 9.94 | **8.90** | 7.32 | **6.40** | 1.90 | -0.61 |
| Average | $NO_x$ | 4.66 | **2.95** | 5.21 | **3.03** | 4.59 | **2.97** | 0.08 | 0.01 |
| | $NO_2$ | 3.70 | **2.37** | 4.06 | **2.39** | 3.63 | **2.37** | 0.02 | 0.00 |
| | $PM_{10}$ | 8.31 | **7.80** | 9.29 | **8.47** | 6.94 | **6.58** | 0.67 | -1.22 |
| | $PM_{2.5}$ | 5.24 | **4.78** | 6.28 | **5.57** | 4.28 | **3.96** | 0.78 | -0.83 |
| Min | $NO_x$ | 3.56 | **2.42** | 4.16 | **2.58** | 3.46 | **2.33** | 0.16 | -0.08 |
| | $NO_2$ | 2.84 | **1.94** | 3.26 | **2.04** | 2.75 | **1.87** | 0.10 | -0.07 |
| | $PM_{10}$ | 7.48 | **7.01** | 8.25 | **7.52** | 5.92 | **5.59** | 0.51 | -1.42 |
| | $PM_{2.5}$ | 4.83 | **4.43** | 5.58 | **4.95** | 3.68 | **3.39** | 0.52 | -1.03 |

3.3.28. The comparison between the 2011-based and 2013-based background pollutant concentration datasets shows that on average, there is a small increase for all pollutants in the opening year of

2028. Further comparison between the 2011-based and 2015-based background pollutant datasets shows that on average, there is a small increase for $NO_x$ and $NO_2$ and a reduction of $PM_{10}$ and $PM_{2.5}$ across the Proposed Scheme study area.

3.3.29. Regarding maximum background pollutant concentrations for the opening year of 2028 (see Table 3-6), the 2015-based background dataset indicates the highest level of $NO_x$ and $NO_2$ contained within the Proposed Scheme study area. The 2013-based background dataset presents the highest modelled $PM_{10}$ and $PM_{2.5}$ with respect to the Proposed Scheme study area.

3.3.30. All maximum background pollutant concentrations quoted in Table 3-6 are below the respective AQOs.

3.3.31. The 2015-based background concentrations have been incorporated into the local air quality assessment as part of this ESA to provide updated total annual mean concentrations of $NO_2$, $PM_{10}$ and $PM_{2.5}$ to allow for a comparison to be made.

## 3.4. ASSESSMENT OF EFFECTS

3.4.1. Local air quality is measured in relation to the concentrations of certain pollutants in the air, taking account of the effects of these pollutants at sensitive receptor locations. Road vehicle emissions are considered as a major contributor to the concentrations of $NO_2$, $PM_{10}$ and $PM_{2.5}$ in urban areas and close to roads. In this case, the Proposed Scheme is expected to be the predominant source of these pollutants adjacent to the road alignment. Fugitive emissions of dust and $PM_{10}$ to the atmosphere can also occur during land preparation (e.g. demolition, site clearance), earthworks (including the handling and storage of materials) and during construction activity.

3.4.2. The assessment contained herein focuses on the completed Scheme.

3.4.3. The traffic datasets provided for Proposed Scheme (Opening year of 2028) considers the first fully operational year of the Scheme and allows for an appropriate comparison to be made with previous assessments completed (ES 2016 and OBC 2017).

### CONSTRUCTION ASSESSMENT

3.4.4. The main air quality impacts associated with the construction phase actions relate to fugitive dust generation and deposition, which may occur during initial groundwork and site clearance, earthworks and during construction activity. These fugitive emissions can differ substantially depending on the scale of actions, the specific operations carried out and the weather conditions.

3.4.5. The ES concluded that, with the adoption of appropriate mitigation measures that dust nuisance during construction would be kept to a minimum. Section 8.6.4 of the ES 2016 outlines proposed mitigation measures that are applicable to the Proposed Scheme.

3.4.6. The conclusions of the ES 2016 remain valid, despite the change in phasing, as the construction activities that could potentially affect local air quality are the same, with the emphasis on appropriate mitigation to ensure there are no significant environmental effects. Accordingly, all applicable mitigation measures for controlling fugitive dust and exhaust emissions will be outlined within a Construction Environmental Management Plan (CEMP) as detailed in Chapter 18 (Table 18.1 item AQ1) of the ES 2016.

## OPERATIONAL – LOCAL AIR QUALITY ASSESSMENT

3.4.7. A local air quality assessment was completed as part of the ES in 2016. The assessment of local air quality investigated changes in concentrations of $NO_2$ and $PM_{10}$ as these are two of the principal pollutants associated with vehicular emissions and which are of main concern in relation to human health.

3.4.8. After the ES 2016, an atmospheric dispersion modelling exercise was carried out during production of the OBC in 2017, for the opening year of 2028, based on revised traffic data. The OBC was consistent with the ES 2016 with respect to the application of model verification factors for road contributions of $NO_X$, $PM_{10}$ and $PM_{2.5}$ (see Appendix 8D of the ES 2016 for further information) and use of the same traffic base year of 2013.

3.4.9. The OBC air quality assessment considered the same sensitive receptors identified and reported in the ES 2016, with the inclusion of annual mean $PM_{2.5}$ concentrations.

3.4.10. For this ESA, a high-level review and comparison of the ES 2016 and OBC 2017 assessments results was carried out. The following subsections provide further guidance on the approach taken to undertake the comparison exercise.

***ES 2016 – Local Air Quality Assessment***

3.4.11. Table A2-1 of Appendix B presents the results taken from Table 8.5 of the ES 2016, which outlines a summary of the local air quality assessment carried out for the opening year of the Proposed Scheme in 2028. The updates allow the inclusion of annual mean $PM_{2.5}$ statistics, updated DEFRA background concentrations and incorporates a ratio between those properties that are predicted to experience an improvement in air quality against those that may experience deterioration.

3.4.12. The 2015-based background pollutant concentrations have been applied to the road contributions of $NO_x$, $PM_{10}$ and $PM_{2.5}$ to generate total annual mean concentrations, including conversion of $NO_x$ to $NO_2$ using the latest DEFRA calculator[20].

3.4.13. The DEFRA background pollutant concentrations provides the assumption that air quality will improve in future years, as older vehicles are replaced with more a modern, fuel efficient and cleaner fleet mix[5,9].

3.4.14. However, the observed trends in the analysis of monitored $NO_2$ concentrations have not declined as would be expected in recent years. This trend is thought to be related to increased use of turbo-charging and increasing power capabilities of modern diesel vehicles, which emit more $NO_x$ than expected under urban driving conditions[21].

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20 DEFRA (2017) *$NO_x$ to $NO_2$ Calculator v6.1*, October 2017 [online] https://laqm.defra.gov.uk/documents/NOx_to_NO2_Calculator_v6.1.xls

21 DEFRA (2011) Trends in $NO_x$ and $NO_2$ emissions and ambient measurements in the UK, July 2011 [online] https://uk-air.defra.gov.uk/assets/documents/reports/cat05/1108251149_110718_AQ0724_Final_report.pdf

3.4.15. IAN 170/12[7] provides updated advice on taking account of the effect of future alternative $NO_2$ projections, to account for variations in future year $NO_2$ forecasts.

3.4.16. The consequence of the conclusions of DEFRA's advice on long term $NO_2$ trends is that there is a gap between projected vehicle emission reductions and projections on the annual rate of improvements in ambient air quality in DEFRA's published technical guidance[12].

3.4.17. According to IAN 170/12[7], *"The air quality modelling should continue to be completed in accordance with the assessment methodology set out in* Figure 8.1 of ES 2016 *and with reference to DEFRA's LAQM.TG (09) guidance where applicable".*

3.4.18. Therefore, annual mean $NO_2$ statistics based on the updated DEFRA LAQM.TG (16)[12] document and with application of the respective IAN 170/12[7] gap factors are presented in Table B1 of Appendix B for comparison.

3.4.19. A schedule of the predicted annual mean $NO_2$, $PM_{10}$ and $PM_{2.5}$ concentrations are provided in Appendix B – Air Quality Data CD.

3.4.20. The assessment has demonstrated there would be 19 exceedances of the annual mean $NO_2$ AQO without the Proposed Scheme, with all but four of those exceedances removed with the Proposed Scheme in operation. No new exceedances of the annual mean $NO_2$ AQO are predicted with the Proposed Scheme in place and there would be no exceedance of the annual mean $PM_{10}$ or $PM_{2.5}$ AQOs with or without the Proposed Scheme.

3.4.21. In terms of changes to annual mean $NO_2$ concentrations with the Proposed Scheme in place, the maximum improvement (reduction) would be 24.8 µg/m$^3$ and the maximum increase (deterioration) would be 13.0 µg/m$^3$.

3.4.22. Table B1 of Appendix B identifies the ratio of properties that are predicted to experience a benefit in comparison to those that experience a deterioration in local air quality, which is reported as 2.7:1 for annual mean $NO_2$. Higher ratios were predicted for annual mean $PM_{10}$ and annual mean $PM_{2.5}$, confirming that the majority of receptors are expected to experience an improvement in local air quality with the Proposed Scheme in operation.

3.4.23. Appendix 8J of the ES 2016 identifies the respective significance results using the 2010 EPUK impact descriptors[13] and through the application of IAN 174/13[8].

3.4.24. Using the magnitude and value of change criteria contained in Table 2.1 of IAN 174/13[8], Table A2-2 of Appendix B presents a breakdown of the respective changes taken from the annual mean concentrations predicted for the opening year. The magnitude of change criteria for annual average $NO_2$ and $PM_{10}$ concentrations is described as a percentage of the relevant AQO. The table has been updated to include the annual mean $PM_{2.5}$ predictions.

3.4.25. Table B2 of Appendix B shows that the majority of modelled receptors are predicted to experience between a 0% and 1% improvement (decrease) in annual mean $PM_{10}$ and $PM_{2.5}$ concentrations. Regarding annual mean $NO_2$ concentrations, 58.2% of all modelled receptors are predicted to experience reductions between 0% and 5%, when observed with the long-term trend information in IAN 170/12[7].

3.4.26. The local air quality assessment demonstrated that many more sensitive receptors near the existing A5, the wider road network and the Proposed Scheme are predicted to experience a slight improvement in concentrations of $NO_2$ and $PM_{10}$ than would be subject to a slight worsening, should the Proposed Scheme be implemented.

3.4.27. Table B3 of Appendix B presents the significance impact summary for human receptors based on IAN174/13[8] for the opening year of the ES 2016 and observing the long term trend information contained in IAN 170/12[7].

3.4.28. With the Proposed Scheme in operation, the 19 receptor locations predicted to experience large (16 receptors) or small (3 receptors) improvements in annual mean $NO_2$ concentrations correspond to those that exceed the AQO of 40 $\mu g/m^3$ in the Without Scheme scenario. This includes the predicted removal of 15 exceedances (see Table B1 of Appendix B). The Proposed Scheme is not predicted to create any new exceedances of the annual mean $NO_2$ and $PM_{10}$.

3.4.29. The summary of significance impacts on annual mean $NO_2$, $PM_{10}$ and $PM_{2.5}$ concentrations is summarised for the ES 2016 in Table B4 of Appendix B, based on the updated EPUK/IAQM guidance[14] impact descriptors. This includes the addition of annual mean $PM_{2.5}$ results.

3.4.30. With application of the updated EPUK/IAQM guidance[14] impact descriptors (see Table 3-2), the majority of receptors modelled within the ES 2016 local air quality assessment for the opening year are predicted to experience a negligible to slight beneficial improvement. Six receptors are now predicted to receive a substantial beneficial improvement with respect to annual mean $NO_2$, based on results derived using IAN 170/12[7].

***OBC 2017 – Local Air Quality Assessment***

3.4.31. The following information relates to the OBC 2017 modelling exercise. It has been produced to facilitate a comparison with the ES 2016 local air quality assessments, both with the inclusion of updated DEFRA background concentrations and use of the latest DEFRA $NO_x$ to $NO_2$ calculator.

3.4.32. Modelled pollutant concentrations using the 2028 traffic flow projections (sourced from the 2017 OBC) were verified with the respective adjustment factors applied for the ES 2016. The model adjustment factors derived for the road-$NO_x$ contribution were applied to the modelled road-$PM_{10}$ and road $PM_{2.5}$ contributions, as per Chapter 7 of LAQM.TG (16)[12]. The model verification process is outlined in Appendix 8D of the ES 2016.

3.4.33. Table B5 of Appendix B below presents the results summary of the local air quality assessment carried out for whole scheme opening year (2028) as part of the OBC 2017 work. The updates allow the inclusion of annual mean $PM_{2.5}$ statistics and incorporates a ratio between those properties that are predicted to experience an improvement against those who may experience deterioration. A schedule of the predicted annual mean $NO_2$, $PM_{10}$ and $PM_{2.5}$ concentrations are provided in Appendix B – Air Quality Data CD.

3.4.34. The OBC local air quality assessment has demonstrated there would be 55 exceedances of the annual mean $NO_2$ AQO without the Proposed Scheme, reducing to 23 exceedances (an overall reduction of 32) with the Proposed Scheme being implemented, with respect to the results presented using IAN 170/12[7]. The assessment demonstrated that there would be no exceedances of the annual mean $PM_{10}$ or $PM_{2.5}$ AQO are predicted from the OBC 2017 modelling exercise.

3.4.35. The maximum improvement (reduction) in annual mean $NO_2$ levels would be 27.2 µg/m$^3$ and the maximum increase (deterioration) would be 13.2 µg/m$^3$ with the Proposed Scheme in place.

3.4.36. Table B5 of Appendix B identifies the ratio of properties that are predicted to experience a benefit in comparison to those that experience a deterioration in local air quality, which is reported as 2.4:1 for annual mean $NO_2$. Higher ratios were predicted for annual mean $PM_{10}$ and annual mean $PM_{2.5}$, confirming that the majority of receptors are expected to experience an improvement in local air quality with the Proposed Scheme in operation.

3.4.37. Using the magnitude and value of change criteria contained in Table 2.1 of IAN 174/13[8], Table B6 of Appendix B presents a breakdown of the respective changes taken from the annual mean concentrations predicted for the opening year. The magnitude of change criteria for annual average $NO_2$ and $PM_{10}$ concentrations is described as a percentage of the relevant AQO.

3.4.38. Table B6 of Appendix B shows that the majority of modelled receptors are predicted to experience between a 0% and 1% improvement (decrease) in annual mean $PM_{10}$ and $PM_{2.5}$ concentrations. Regarding annual mean $NO_2$ concentrations, 52.9% of all modelled receptors are predicted to experience improvements between 0% and 5%, when observed with the long-term trend information in IAN 170/12[7].

3.4.39. The OBC local air quality assessment demonstrated that more sensitive receptors included in the modelling assessment are predicted to experience a slight improvement in concentrations of $NO_2$, $PM_{10}$ and $PM_{2.5}$, than would be subject to a slight worsening, should the Proposed Scheme be implemented.

3.4.40. Table B7 of Appendix B presents the significance impact summary for human receptors based on IAN174/13[8] for the OBC 2017 assessment and observing the long-term trend information contained in IAN 170/12[7].

3.4.41. With the Proposed Scheme in operation, 54 of 55 receptor locations are predicted to experience large (45 receptors), medium (4 receptors) or small (5 receptors) improvements in annual mean $NO_2$ concentrations correspond to those that exceed the AQO of 40 µg/m$^3$ in the Without Scheme scenario. This includes the predicted removal of 32 exceedances. The Proposed Scheme is not predicted to create any new exceedances of the annual mean $NO_2$ and $PM_{10}$.

3.4.42. The summary of significance impacts on annual mean $NO_2$, $PM_{10}$ and $PM_{2.5}$ concentrations is summarised for the OBC assessment in Table B8 of Appendix B, based on the updated EPUK/IAQM guidance[14] impact descriptors. This includes the addition of annual mean $PM_{2.5}$ results.

3.4.43. With application of the updated EPUK/IAQM guidance[14] impact descriptors (see Table 3-2), the majority of receptors modelled within the OBC local air quality assessment for the opening year are predicted to experience a negligible to slight beneficial improvement. There are 26 receptors predicted to receive a substantial beneficial improvement in consideration, based on results derived using IAN 170/12[7] .

***Comparison between ES 2016 and OBC (Completed Scheme) Predicted Effects with 2015-based Backgrounds***

3.4.44. The 2016 ES assessment results, incorporating the revised DEFRA background data, demonstrate there would be 19 exceedances of the annual mean $NO_2$ AQO without the Proposed Scheme and 4 exceedances should the Proposed Scheme be implemented, with the predicted removal of 15 exceedances. The maximum improvement in annual mean $NO_2$ is predicted to be 24.8 µg/m$^3$ and the maximum deterioration of annual mean $NO_2$ is predicted to be 13.0 µg/m$^3$.

3.4.45. The OBC assessment, which incorporated the latest traffic flow projections for the OBC 2017, demonstrated there would be 55 exceedances of the annual mean $NO_2$ AQO without the Proposed Scheme and 23 exceedances should the Proposed Scheme be implemented, with the predicted removal of 32 exceedances attributed to the Proposed Scheme operation. Furthermore, the Proposed Scheme would not introduce any new exceedances. The maximum improvement in annual mean $NO_2$ is predicted to be 27.2 µg/m$^3$ and the maximum deterioration of $NO_2$ is predicted to be 13.2 µg/m$^3$. As with the ES 2016 local assessment, it is predicted that there are no exceedances of the annual mean $PM_{10}$ and $PM_{2.5}$ AQOs.

3.4.46. Within the context of the published ES 2016 for the opening year of the Proposed Scheme, the revised results presented above for the OBC 2017, which was based on the latest available traffic flow projections for 2028, demonstrate that the conclusion of no significant environmental effects with respect to local air quality remains valid.

3.4.47. The OBC modelling exercise undertaken in 2017 was completed using DEFRA's EFT V7, which was superseded by DEFRA's EFT v8.0.1 in November 2017. DEFRA update the EFT periodically due to updates to underlying data including vehicle fleet composition and emissions factors. As such, a sensitivity analysis was undertaken to compare vehicle emissions factors derived using the EFT V8.0.1 versus those derived using EFT V7 within the OBC 2017 modelling exercise.

**Sensitivity Analysis on DEFRA Emissions Factor Toolkits V7 versus V8.0.1**

3.4.48. A sensitivity analysis was carried out by ascertaining the top 20 road links that exhibit the highest road-$NO_x$ emission rates generated from the DEFRA EFT V7 in the OBC 2017 modelling scenario for the Without Scheme and With Scheme scenarios in the 2028 opening year.

3.4.49. The respective traffic data information (flow, speed, composition) contained in the EFT V7 were then extracted and processed in EFT V8.0.1 to provide an analysis of the differences between each dataset**.** As the local air quality assessment has demonstrated there are no exceedances of the annual mean $PM_{10}$ or $PM_{2.5}$ AQOs in any of the modelled scenarios, it has not been considered in this analysis.

3.4.50. Table B9 in Appendix B provides the top 20 road-$NO_X$ emission rates generated by the EFT V7 dataset for road links contained in both the Without Scheme and With Scheme scenario for the opening year 2028, in addition to the corresponding emission rates derived using EFT V8.0.1.

3.4.51. From the analysis contained in Appendix B, it is clear that the use of DEFRA EFT V8.0.1 results in an increase in the respective Without Scheme and With Scheme road-$NO_x$ emission rates. However, the difference between the scenarios is relatively higher when using EFT v8.0.1 compared to EFT

v7, equating to relatively greater improvements (reductions) in road-$NO_x$ emissions in the With Scheme scenario versus the Without Scheme.

3.4.52. Whilst overall it is expected that the use of EFT v8.0.1 would likely result in slightly higher annual mean $NO_2$ concentrations at the majority of the modelled receptors reported in the OBC 2017 modelling exercise, the conclusions of the local air quality assessment would remain valid. This is due to the continued predominant improvement in roadside $NO_2$ levels in the With Scheme scenario relative to the Without Scheme, meaning the results would demonstrate that the majority of modelled receptors are predicted to experience an improvement in local air quality with the Proposed Scheme in operation. Therefore, the conclusion of no significant environmental effects with respect to local air quality remains valid.

### OPERATIONAL – REGIONAL ASSESSMENT

3.4.53. The regional assessment is a reporting requirement of DMRB HA207/07[6]. The assessment outcomes do not inform on the significance of a proposed road infrastructure scheme but is presented and described to inform an assessment of overall change.

3.4.54. An estimate of the change in total mass emissions of $NO_x$, $PM_{10}$, $PM_{2.5}$ and carbon dioxide ($CO_2$) per year, derived from the traffic data for affected roads considered in the regional assessment is contained in Table 8.8 of the ES 2016. The regional assessment contained in the ES 2016 was carried out using the DEFRA EFT v6.0.1 using the traffic data provided for an opening year of 2028 and a design year of 2041.

3.4.55. The regional assessment has been updated to utilise the latest traffic flow data with design year of 2043, as per the OBC 2017 modelling exercise, for the equivalent extent of road network included in the ES 2016 regional assessment and processed using the updated EFT v8.0.1. The results are presented in Table B10 of Appendix B.

3.4.56. For the opening year, there is predicted to be an increase in emissions of $NO_x$, $PM_{10}$, $PM_{2.5}$ and $CO_2$ in the With Scheme scenario relative to the Without Scheme. In the opening year, this increase in emissions equates to 28.2 tonnes per year for $NO_x$, 3.6 tonnes for $PM_{10}$, 2.1 tonnes for $PM_{2.5}$ and 32,781 tonnes per year for $CO_2$.

3.4.57. In the design year, the predicted increases in $NO_x$, $PM_{10}$, $PM_{2.5}$ and $CO_2$ emissions in the With Scheme scenario relative to the Without Scheme equate to 30.9 tonnes per year for $NO_x$, 5.1 tonnes per year for $PM_{10}$, 2.9 tonnes for $PM_{2.5}$ and 45,060 tonnes per year for $CO_2$.

3.4.58. To provide context to the regional assessment, the increase in $CO_2$ emissions has been compared to the latest regional $CO_2$ emissions information held by the National Atmospheric Emissions Inventory[22] (NAEI). The NAEI is operated by the Department for Energy and Climate Change (DECC) and compiles data on UK $CO_2$ emissions by local authority. The latest national statistics

22 National Atmospheric Emissions Inventory [online] http://naei.beis.gov.uk

were published in June 2018[23] and are made available for 2005 until 2016, with no further projections made.

3.4.59. The annual $CO_2$ emissions derived for the three local authorities (Derry City and Strabane District Council; Mid Ulster District Council; and Fermanagh and Omagh District Council) identified from the road transport sector in the most recent available year (2016) was 1,115 kilo-tonnes. On a national level, the total road transport sector accounts for 4,135 kilo-tonnes of $CO_2$[23].

3.4.60. In the context of the overall regional emissions, the predicted increase in total mass emissions of $CO_2$ (32,781 tonnes) attributed to the operational phase of the Scheme in 2028 (see Table B10 of Appendix B) equates to approximately 2.9% of the total road transport regional emissions[23] generated across the three local authority district areas. On a national level, the total mass emissions of $CO_2$ generated by the Proposed Scheme (see Table B10 of Appendix B) is approximately 0.8% of the total road transport emissions generated[23].

3.4.61. Emission totals for the design year of assessment are based on vehicle emission factors for 2030 contained in the respective DEFRA EFT, the latest future year for which vehicle emission factors are published. Furthermore, emissions reported do not account for the recently introduced UK government plans to ban the sale of new petrol and diesel cars by 2040. This, combined with further technological improvements to vehicle emissions and engine technology, is likely to reduce total emissions attributed to vehicle exhausts between 2030 and 2043.

### OPERATIONAL – COMPLIANCE RISK

3.4.62. DEFRA's PCM model is used to report compliance with the EU limit values and provides $NO_2$ concentrations for roads across the UK for a selection of years up to 2030. The most recent PCM model outputs were released in August 2017 (2015 PCM base year model), following the release of the DEFRA air quality plan[5,9].

3.4.63. DEFRA released three forecast scenarios with the 2015 PCM base year model, depending on the level of actions implemented to improve air quality by each local authority:

- Baseline;
- Baseline + Clean air zone (CAZ); and
- Baseline + CAZ + additional measures.

3.4.64. Of the three scenarios, the baseline is considered as the most conservative because it predicts the smallest improvements in air quality from 2015 base year to subsequent future years and assumes no additional actions to improve air quality will be undertaken other than those already implemented.

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23 UK local authority and regional carbon dioxide emissions national statistics: 2005-2016 (2018) [online] https://www.gov.uk/government/statistics/uk-local-authority-and-regional-carbon-dioxide-emissions-national-statistics-2005-2016

3.4.65. This ESA considers use of the baseline PCM model outputs as these are viewed as being the most conservative and because no CAZ and/or additional measures are currently proposed within the modelled study area.

3.4.66. Table B11 of Appendix B presents the superseded 2013 base year and current 2015 base year PCM model data for the PCM links contained in the Proposed Scheme study area for 2019 and first full year of opening for the Scheme (2028).

3.4.67. The data shows that the current 2015 base year PCM model predicts higher annual mean $NO_2$ concentrations than the superseded 2013 base year PCM base year model. However, it is identified that the predicted PCM concentrations are below the EU limit value for annual mean $NO_2$ in the Proposed Scheme study area (see Figure 8.1 of the ES 2016).

3.4.68. A review of the 2015 PCM base year model identified that predicted concentrations are below the EU limit value for annual mean $NO_2$ in the Proposed Scheme study area (see Figure 8.1 of ES 2016). From Table B11 of Appendix B there is an increase in roadside $NO_2$ concentrations between the 2013 base and 2015 PCM models, that range between 1.3 µg/m$^3$ and 3.8 µg/m$^3$.

3.4.69. In the opening year of 2028, the highest roadside $NO_2$ concentration in the updated PCM model from links that overlap the Proposed Scheme's affected roads is 17.2 µg/m$^3$ and is contained along the existing A5 in Omagh (CENSUS ID 902644). In the 2013 base year PCM model, CENSUS ID 902644 is predicted to experience an equivalent opening year (2028) PCM $NO_2$ concentration of 13.4 µg/m$^3$, which demonstrates an increase of 3.8 µg/m$^3$ between models.

3.4.70. In both the ES 2016 and the OBC 2017, receptors modelled near CENSUS ID 902644, such as residential properties situated along Orchard Terrace, Johnston Park, Starrs Crescent and Sunningdale are predicted to experience decreases in pollutant concentrations because of the Proposed Scheme.

3.4.71. The receptor identified in the ES 2016 and OBC 2017 with the highest identified increase in annual mean $NO_2$ concentrations is UPRN 185671881 (52 Rarone Road, Rarone, Seskinore) which experiences a change of 13.0 µg/m$^3$ (see Table B1 of Appendix B) and 13.2 µg/m$^3$ (see Table B5 of Appendix B), respectively.

3.4.72. With the maximum predicted change in annual mean $NO_2$ from all receptors included in the local air quality model added to the equivalent opening year PCM roadside $NO_2$ concentration of 17.2 µg/m$^3$, the equivalent scheme PCM $NO_2$ concentrations are 30.2 µg/m$^3$ and 30.4 µg/m$^3$, with a difference of 0.2 µg/m$^3$ between the ES 2016 and OBC 2017 predictions.

3.4.73. These concentrations equate to 75.5% and 76.0% of the annual mean EU limit value respectively. In both instances, the equivalent scheme PCM $NO_2$ Concentration is well below the EU limit value and as such would constitute a Low Risk, according to IAN 175/13[11]. Therefore, it is predicted that there will be no delay in compliance and that overall, there is a Low Risk of the Proposed Scheme being non-compliant with 2008/50/EC[10].

### ECOLOGICAL AIR QUALITY IMPACTS – TULLY BOG SAC

3.4.74. A further detailed atmospheric dispersion modelling study was undertaken in 2017 to ascertain the potential impact of N-deposition at the Tully Bog SAC associated with operation of the Proposed

Scheme. This was required to support the HRA[15,16]specific to the Tully Bog SAC and was based on the latest version of traffic flow data (OBC 2017) for the Proposed Scheme.

3.4.75. Specifically, this included modelling road-source contributions of N-deposition across a 5m x 5m receptor grid encompassing the entirety of the Tully Bog SAC area (approx. 36 ha) and has been completed to ascertain a more in-depth analysis of conditions once the Proposed Scheme is in operation in 2028.

3.4.76. Dispersion modelling was undertaken for the opening year of the Proposed Scheme in 2028 and was based on the traffic flow dataset produced for the OBC 2017. Emissions factors for use within the dispersion model were generated via the DEFRA EFT (V7.0).

3.4.77. The results pertaining to the Tully Bog SAC are provided in Appendix B – Air Quality Data CD (Sheet 3) of the ESA, a summary is provided in the paragraphs below.

3.4.78. Since 2017, revised background $NO_X$ and $NO_2$ concentrations (2015-based) have been published by DEFRA. The updated concentrations relative to the Tully Bog SAC area were obtained for 2028. The respective 2028 values were applied to calculate the average 5x5km $NO_X$ and $NO_2$ backgrounds and respective N-Deposition background values. Conversion of $NO_x$ to $NO_2$ was carried out with the latest DEFRA calculator.

3.4.79. From the results obtained from the updated modelling, it is predicted that a maximum increase of 0.52% in N-deposition would occur once the Proposed Scheme is fully operational in a section located towards the south east boundary. An illustration of the updated modelling results, as a percentage of the lower critical load level of 5 kgN/ha/yr, carried out for the Tully Bog SAC is presented in Figure 3-2 (Appendix E). A schedule of results for the Tully Bog SAC N-deposition modelling assessment exercise is provided in Appendix B – Air Quality Data CD (Sheet 3).

3.4.80. The maximum N-deposition impacts experienced across the Tully Bog SAC, based on the updated dispersion modelling exercise and application of the 2015 based background maps are predicted to be less than 1% (0.52% max) of the lower critical load level of 5 kgN/ha/yr across the entirety of the Tully Bog SAC area. These maximum predicted changes equate to less than 50 gN/ha/yr (0.003 $gN/m^2/yr$ max), applicable to approximately 0.08% of the Tully Bog SAC area (see Table B13 in Appendix B).

3.4.81. The revised N-deposition values and impact of the Proposed Scheme at Tully Bog SAC do not materially impact the conclusions made in the published HRA[15,16]. This is considered to be applicable to all designated sites considered in the assessment reported within the ES 2016.

***Sensitivity Analysis on DEFRA Emissions Factor Toolkit V7 vs V8.0.1***

3.4.82. The predicted air quality impacts on the Tully Bog SAC were based on vehicle emissions derived using DEFRA EFT V7. A similar sensitivity analysis was undertaken for the road links adjacent to the Tully Bog SAC based on road-$NO_x$ emission rates generated from the previous EFT V7 and updated EFT V8.0.1 for the Without Scheme and With Scheme scenarios in the 2028 opening year.

3.4.83. The respective traffic data information (flow, speed, composition) contained in the EFT V7 were extracted and processed in EFT V8.0.1 to provide an analysis of the differences between each dataset. Table B14 of Appendix B presents the sensitivity analysis.

3.4.84. There are minimal changes in vehicle emission rates attributed to the road links adjacent to Tully Bog SAC, when comparing EFT V7 with EFT V8.0.1. Therefore, the conclusions of the HRA[15,16] are considered to remain valid, as are the conclusions reported in the ES 2016 for all designated sites assessed.

## 3.5. CONCLUSION

3.5.1. This chapter of the ESA provides an updated review of the potential air quality effects of the Proposed Scheme based on revisions to traffic data made for the OBC in 2017. The assessment takes account of the requirements of the EU Directive on ambient air quality (2008/50/EC)[10] and provides an update on relevant legislation, national and local planning policy regarding air quality since the publication of the ES 2016.

3.5.2. The conclusions of the ES 2016 remain valid with respect to air quality (dust) impacts during the construction of the Proposed Scheme. Despite the change in phasing, the construction activities that could potentially affect local air quality are the same, with the emphasis placed on appropriate mitigation to ensure there are no significant environmental effects. Accordingly, all applicable mitigation measures for controlling fugitive dust and exhaust emissions (as reported in Chapter 18 – Schedule of Environmental Commitments, ES 2016) will be outlined within a Construction Environmental Management Plan (CEMP). The CEMP is designed to define effective, scheme-specific and implementable procedures and mitigation measures to monitor and control identified environmental impacts throughout the construction phase of the project.

3.5.3. In terms of construction-related traffic emissions, the ES 2016 concluded that considering the relatively low number of additional vehicles using potential routes on existing roads and existing low concentrations of $NO_2$ and $PM_{10}$, there would be no significant impact associated with such emissions during construction. Furthermore, emissions associated with construction traffic would be temporary in nature. Given the updated review of baseline conditions within the study area, which demonstrates that existing air quality is generally good, the conclusions of the ES 2016 remain valid.

3.5.4. The revised local air quality assessment has provided a comparison of the ES 2016 results with the OBC 2017 modelling exercise results. The assessment completed for the OBC utilised the revised traffic flow data for the Without Scheme and With Scheme scenarios in the whole scheme opening year (2028). The results consider annual mean levels of $NO_2$, $PM_{10}$ and $PM_{2.5}$ and have incorporated the latest background pollutant data released by DEFRA, in addition to using the latest $NO_x$ to $NO_2$ calculator[20] for deriving total annual mean $NO_2$ at each receptor.

3.5.5. The outcomes of the comparison have demonstrated that the OBC local air quality assessment, based on the latest traffic flow data, predicts there to be more exceedances of the annual mean air quality objective for $NO_2$ in the Without Scheme and With Scheme scenarios when compared to the ES 2016. However, the exceedances predicted to occur without the Proposed Scheme in place are shown to be removed or reduced in magnitude with the Scheme in operation. Furthermore, the Proposed Scheme will not introduce any new exceedances.

3.5.6. The majority of modelled receptors included in the study are predicted to experience an improvement in air quality with the Proposed Scheme in place. Within the context of the published

2016 ES for the whole scheme being completed, the revised results presented above for the OBC, which was based on the latest available traffic flow projections for 2028, demonstrate that the conclusion of no significant environmental effects with respect to local air quality remains valid.

3.5.7. The updated regional assessment of pollutant emissions associated with the Proposed Scheme demonstrated that the increase in emissions is relatively small within the context of existing regional emissions. The predicted increase in $CO_2$ emissions attributed to the Proposed Scheme in 2028 equates to less than 1% of the Northern Ireland total annual emissions from road transport, reported for 2016[23].

3.5.8. An assessment of compliance with the EU Ambient Air Quality Directive[10] limit value for annual mean $NO_2$ was undertaken for the Proposed Scheme opening year (2028). This concluded that that there will be no delay in compliance and that overall, there is a Low Risk of the Proposed Scheme contributing to non-compliance with the Directive[10].

3.5.9. The revised ecological air quality assessment, specifically at Tully Bog SAC, focussed on the predicted annual nitrogen deposition at the SAC associated with the operation of the Proposed Scheme. The results were evaluated within the context of the results published in the HRA[15,16] (2017) and accounted for the latest DEFRA background pollutant data for $NO_x$ and $NO_2$ specific to the SAC area. The revised nitrogen deposition values and predicted impact of the Proposed Scheme at Tully Bog SAC do not materially impact the conclusions made in the published HRA[15,16] .

3.5.10. Overall, the revised air quality chapter has identified that the conclusions of the ES 2016 and the conclusions relating to ecological air quality impacts at Tully Bog SAC, reported in the HRA[15,16] remain valid. The Proposed Scheme is expected to have no significant environmental effect on local air quality.

# 4. CULTURAL HERITAGE

## 4.1. INTRODUCTION

4.1.1. A review of the baseline environment and the guidance and legislation informing the assessment process has been undertaken to update the ES published in 2016. Any changes for Cultural Heritage are outlined below.

## 4.2. LEGISLATION AND POLICY

4.2.1. There has been no revision to The Historic Monuments and Archaeological Objects (Northern Ireland) Order 1995, The Planning (Northern Ireland) Order 1991 (Articles 42 and 44), or The Planning Policy Statement 6 (PPS6): Planning, archaeology and the Built Heritage (plus supporting 2005 Addendum). Nor have there been any revisions to the Local Area Plans affecting the Proposed Scheme; including The Derry Area Plan 2011, Dungannon and South Tyrone Area Plan 2010, Omagh Area Plan 1987-2001, and Strabane Area Plan 1986-2001.

4.2.2. Fermanagh and Omagh District Council (FODC) and Mid Ulster District Council (MUDC) have published their Draft Plan Strategy (DPS) in October 2018 and February 2019 respectively[24].

4.2.3. Derry City and Strabane District Council are expected to publish their DPS later this year. The DPS consultation period for FODC ended 21th December 2018 and for MUDC is scheduled to end 19th April 2019.

4.2.4. All the DPSs will be subject to an Independent Examination prior to being adopted. The next stage is the publication of the Draft Local Policies Plans (LPP), which shall also be subject to Public Consultation and Independent Examination eventually leading to their adoption. The adopted Planning Strategy (stage 1) and Local Policies Plan (stage 2) will combine to make the Local Development Plan, which shall be monitored annually and reviewed at five- and ten-year periods.

4.2.5. At this stage, an indicative date cannot be given for publication of each final Local Development Plan, which must go through due process for the various councils implementing this new plan making process.

4.2.6. The Cultural Heritage within the Proposed Scheme was assessed using guidance from DMRB Volume 11, Section 3, Part 2, HA 208/07 (Cultural Heritage), and Management of archaeological investigations on major road improvement schemes DEM 156/15. There have been no updates to these guidance documents since the ES 2016.

[24] https://www.fermanaghomagh.com/services/planning/local-development-plan-draft-plan-strategy/ https://www.midulstercouncil.org/Planning/Mid-Ulster-Development-Plan

## 4.3. BASELINE CONDITIONS

4.3.1. The review of the Baseline Conditions for Cultural Heritage assets involved an assessment of the Monuments and Buildings Record (MBR), which includes archaeological sites from the Sites and Monuments Record (SMR), and other sites from the Industrial Heritage Record (IHR). An assessment was also made of the Scheduled Monuments List, and the register of Listed Buildings, all of which was available through the Historic Environment Map Viewer maintained by the Northern Ireland Department for Communities. This data source is now publicly available and was most recently updated in January 2019.

4.3.2. From this assessment, there were five additional non-designated archaeological assets identified from the MBR within the 600 m-wide study area from the centre line of the Proposed Scheme. Of these five sites, four relate to battlefield sites within and around Strabane, and one is a post-medieval house. One other site, a B+ Listed Building (site reference number **265**), was omitted from the original assessment and will also be discussed.

### KNOWN ARCHAEOLOGICAL SITES AND FEATURES

4.3.3. The additional archaeological assets identified within the assessment study area are described below in chronological order. All of the sites relate to the post-medieval period, and their positions are shown on Figure 4.1 (Appendix E). All of the sites are listed in Table 4-1, Table 4-2, and Table 4-3.

### BATTLE SITES

4.3.4. The earliest of the additional sites are the battlefield sites located within and around Strabane. Three of these sites date to the 16th century, and relate to conflicts involving the O'Donnells and O'Neills. The first battle is located to the east of Strabane, close to the location of a possible fortification or castle (**86**) (already included in the baseline for ES 2016), and relates to harassing fire, probably on the fortification, by Manus O'Donnell in 1524, who was in dispute with the Earl of Kildare, Gerald Fitzgerald (**287**).

4.3.5. A later battle within Strabane involving the O'Donnells who were again attacking the town, took place in 1583 (**286**) when they defeated the O'Neills during the attack and burnt it down. Several years later, in 1588, the town was controlled by Hugh O'Neill, the now Earl of Tyrone. The battle of Carricklee (**288**) between the Earl of Tyrone and Turlough Luineach O'Neill took place in this year, to the east of the fortification (**86**). Not much is known of the battle but it was reputedly won by Turlough O'Neill.

4.3.6. The final battle (**285**) relates to the wars of 1641, and involved the attack of a Scots garrison by Sir Felim O'Neill. They defeated the garrison and held the town for three days before it was taken back by the Scots after reinforcements arrived.

### POST-MEDIEVAL BUILDINGS

4.3.7. A single B+ Listed Building, The Archdeaconry (**265**), is situated to the north of Aughnacloy. It is not dated in the register of Listed Buildings but a reference to a child being born to the wife of the Reverend T.G. Stokes in 1859 suggests that it is at least 19th century if not earlier. Another post-medieval house (**289**) located to the west of Aughnacloy is known from a barony map of

Dungannon, and a parish map of Carnetele, and dates to the 17th century. There are no surviving above-ground remains of the site in the area.

**Table 4-1 - Schedule of archaeological assets**

| Ref no. | MBR / IHR Reference Number | Grid ref | Site type | Designation | Townland | Description | Value |
|---|---|---|---|---|---|---|---|
| **285** | Unknown | X 2345 Y 3476 | Battle Site | MBR | Townparks of Strabane | Battle of Strabane: An assault on the town dated 12/1641 or 04/1642 between Sir Phelim O'Neill (Irish) and the Scots Garrison (defending), with Sir Phelim O'Neill being victorious. 3 days later, an assault by Colonel Sir William Hamilton (Scots/English) on the Irish now commanded by Captain Hugh Murrach O'Divin, was victorious and the town recaptured. | Low |
| **286** | Unknown | X 2345 Y 3476 | Battle Site | MBR | Townparks of Strabane | Battle of Strath-ban: The town was attacked and burnt by the O'Donnells in 1583. The town was being defended by the O'Neills. | Low |
| **287** | TYR004:005 | X 2332 Y 3971 | Battle Site | MBR | Castletown | Battle of Port na dtri namhad: The battle is located to the east of Strabane, close to the location of a possible fortification or castle, and relates to harassing fire, probably on the fortification, by Manus O'Donnell in 1524, who was in dispute with the Earl of Kildare, Gerald Fitzgerald. | Low |
| **288** | TYR004:008 | X 2324 Y 3965 | Battle Site | MBR | Castletown | Battle of Carricklee: The battle took place in 1588, between the Earl of Tyrone and Turlough Luineach O'Neill, to the east of the fortification (86). Not much is known of the battle but it was reputedly won by Turlough O'Neill. | Low |
| **289** | TYR060:050 | X 268000 Y 352000 | House | MBR | Annagh | A post-medieval house dated to the 17th century is located to the west of Aughnacloy, known from a barony map of Dungannon, and a parish map of Carnetele. There are no surviving above ground remains of the site in the area. | Negligible |

**Table 4-2 - Schedule of Built Heritage assets**

| Ref no. | LB / IHR Reference Number | Grid ref | Site type | Designation and LB grade | Name & address of site | Description | Value |
|---|---|---|---|---|---|---|---|
| **265** | HB13/12/035 | X 267003 Y 353018 | House | Listed Building – B+ | The Archdeaconry, Carnteel road, Glack, Aughnacloy, County Tyrone | No description provided within the listing | Medium |

## 4.4. ASSESSMENT OF EFFECTS

4.4.1. From the assessment conducted (see Table 4-3 and Table 4-4 below), it is concluded that there are no significant effects to any of the additional assets listed. However, additional mitigation is required as set out in Paragraph 4.4.2.

**Table 4-3 - Archaeological Remains Impact Assessment**

| Ref no. | Designation and reference no. | Site type | Value | Magnitude of Impact | Type of Impact | Effect |
|---|---|---|---|---|---|---|
| **285** | MBR Unknown | Battle Site | Low | No Change | N/A | Neutral |
| **286** | MBR Unknown | Battle Site | Low | No Change | N/A | Neutral |
| **287** | MBR TYR004:005 | Battle Site | Low | Major | Physical impact – partial destruction of remains | Slight |
| **288** | MBR TYR004:008 | Battle Site | Low | Major | Physical impact – partial destruction of remains | Slight |
| **289** | MBR TYR060:050 | House | Negligible | No Change | N/A | Neutral |

**Table 4-4 - Built Heritage Impact Assessment**

| Ref no. | IHR/LB/MBR reference no. | Site name and description | Designation / type | Value | Magnitude of Impact | Type of Impact | Effect |
|---|---|---|---|---|---|---|---|
| **265** | HB13/12/035 | The Archdeaconry | LB | Medium | No Change | N/A | Neutral |

### PROPOSED MITIGATION

4.4.2. The mitigation strategy for the Proposed Scheme should be updated to include surveys related to the two battle sites (**287** and **288**) due to be impacted by the construction of the scheme (Table 4.5). The surveys would take the form of targeted metal detector surveys of the areas of the battle sites that are due to be impacted upon by the scheme, in agreement with the Historic Environment Division (Department of Communities). These surveys would take place prior to the previously proposed archaeological evaluation/excavation set out in the ES 2016.

**Table 4-5 - Schedule of archaeological assets – mitigation required**

| Ref no. | Site type | Proposed mitigation |
|---|---|---|
| **287** | Battle site | Metal detector survey |
| **288** | Battle site | Metal detector survey |

## 4.5. CONCLUSION

4.5.1. The assessment does not change the overall conclusions of the Environmental Statement 2016, but does include the requirement for additional mitigation measures for the two battle sites listed above.

# 5. VISUAL EFFECTS

## 5.1. INTRODUCTION

5.1.1. A review of the baseline environment, guidance and legislation informing the assessment process has been undertaken in order to identify any change to the baseline conditions for landscape character and visual receptors since publication of the ES 2016 and to review any potential change of outcome as a result.

## 5.2. LEGISLATION AND POLICY

5.2.1. There has been no major update of the Landscape Institute Landscape and Visual Impact Assessment (LVIA) guidelines; new guidance on the visual representation of development proposals (Technical Guidance Note 02/17 March 2017) has however been introduced.

5.2.2. There have not been any revisions to the Local Area Plans affecting the Proposed Scheme; including The Derry Area Plan 2011, Dungannon and South Tyrone Area Plan 2010, Omagh Area Plan 1987-2001, and Strabane Area Plan 1986-2001.

5.2.3. Fermanagh and Omagh District Council (FODC) and Mid Ulster District Council (MUDC) have published their Draft Plan Strategy (DPS) in October 2018 and February 2019 respectively[25].

5.2.4. Derry City and Strabane District Council are expected to publish their DPS later this year. The DPS consultation period for FODC ended 21 December 2018 and for MUDC is scheduled to end 19 April 2019.

5.2.5. All the DPSs will be subject to an Independent Examination prior to being adopted. The next stage is the publication of the Draft Local Policies Plans (LPP), which shall also be subject to Public Consultation and Independent Examination eventually leading to their adoption. The adopted Planning Strategy (stage 1) and Local Policies Plan (stage 2) will combine to make a Local Development Plan for each Council area, to be monitored annually and reviewed at five- and ten-year periods.

## 5.3. BASELINE CONDITIONS

5.3.1. For the purposes of scoping for the ESA 2019, a review threshold of 250m from either side of the Proposed Scheme has been used. This has been determined from a review of the ES 2016 visual impact assessment and the location of the majority of receptors which were assessed as being subject to the higher orders of visual effect (moderate / large adverse) at the future assessment

[25] https://www.fermanaghomagh.com/services/planning/local-development-plan-draft-plan-strategy/ https://www.midulstercouncil.org/Planning/Mid-Ulster-Development-Plan

year. It represents a distance beyond which it is reasonably considered that significant adverse effects would be unlikely as a consequence of the Proposed Scheme.

5.3.2. In respect of approved development since the publication of the ES 2016, there are in the order of 350 potential new receptor locations that fall within the review threshold limit for the Proposed Scheme, these comprising of residential dwellings, commercial premises, community or recreational facilities. The majority are residential receptors, being mainly isolated or clustered properties located throughout the Proposed Scheme corridor although there are larger developments of 10 or more grouped properties at New Buildings, Strabane, Sion Mills and Omagh.

5.3.3. There are two new cycle route spurs from NCN 92 identified as additional visual receptor locations, as illustrated by the green line in the plates 5.1 and 5.2[26] below:

- An approximate 2.8km section of cycleway along the A5 between the Mourne River and Melmount Road, identified as a local route and not part of the NCN; and
- An approximate 2.8km length of cycle way between the Strule River and the Ulster American Folk Park. This is also identified as a local route and not part of the NCN.

**Plate 5-1: Cycle route spur from Route 92**


[26] Source: Sustrans website, accessed March 2019 https://www.sustrans.org.uk/map-ncn?lat=54.616616921679416&lng=-7.272949656250036&zoom=8&route-type=all-routes&region=Northern%20Ireland

**Plate 5-2: Cycle route spur from Route 92**


5.3.4. Additional quarrying activity has taken place alongside Derg Road, Ardstraw with the potential to influence reported visual effects on nearby residential receptors.

## 5.4. ASSESSMENT OF EFFECTS

5.4.1. It is considered that most new sensitive residential receptors situated within 250m of the Proposed Scheme would be subject to visual effects in the order of no greater than slight adverse at the future assessment year. The ESA 2019 review of approved development has however identified an additional 16 residential receptors that would potentially be subject to the higher orders of moderate or large adverse visual effect (further to the ES 2016 reported estimate of 160 approved development receptors that would potentially be subject to visual effects in these higher orders).

5.4.2. These receptors would be situated throughout the Proposed Scheme corridor at the following locations:

- Victoria Road, Bready;
- West of existing residential development along Derry Road, to the north of Strabane;
- Strahans Road, to the west of Strabane;
- Oldcastle Road, Newtownstewart;
- Drumlegagh Road South, Omagh;
- Augher Point Road, Gortaclare;
- Newtownsaville; and
- Glenhoy Road, Ballygawley

5.4.3. Visual effects on users of the two cycle route spurs from NCN 92 would be predicted to be no greater than slight and adverse at the future assessment year.

5.4.4. Visual effects on sensitive receptors as a result of quarrying within the townland of Urbalreagh are predicted to be no greater than slight and adverse at the future assessment year, with appropriate mitigation measures in place.

## 5.5. CONCLUSION

5.5.1. The majority of new receptors and users of new recreational routes and facilities would not be subject to significant visual effect in the future assessment year.

5.5.2. Visual effects predicted to be in the higher orders of moderate adverse and large adverse would apply to occupiers of a low number of additional residential dwellings, a total of 16 out of an estimated 350 approved development receptors identified since the ES 2016 publication.

5.5.3. The number of sensitive receptors which would be subject to higher orders of visual effect would accordingly increase from those described in the ES 2016; however the comparative level of increase would not influence the conclusion of the ES 2016 visual assessment.

# 6. ECOLOGY AND NATURE CONSERVATION

## 6.1. INTRODUCTION

6.1.1. A review of guidance and legislation has been undertaken, alongside a review of available data sources to update the ES published in 2016. Any changes in the Nature Conservation resources are outlined below.

## 6.2. LEGISLATION AND POLICY

6.2.1. Legislation or policies where changes have been made, since submission of the ES 2016, are listed below with further information provided in Table C-1 of Appendix C.

- The Environment (Northern Ireland) Order 2002; includes provisions for declaring Areas of Special Scientific Interest (ASSI) by reason of a site's flora, fauna, geological, physiographical or other features and accordingly the area is afforded special protection. The Order replaces the provisions in the Nature Conservation and Amenity Lands (Northern Ireland) Order 1985 (as amended).
- The Water Environment (Water Framework Directive) Regulations (Northern Ireland) 2003 which implement in Northern Ireland, Directive 2000/60/EC, The Water Framework Directive (WFD) which aims to establish a framework for the protection of inland surface waters, transitional waters, coastal waters and groundwater.
- The Surface Waters (Fishlife) (Classification) Regulations (Northern Ireland) 2007 which prescribe a system for classifying the quality of freshwaters which need protection or improvement in order to support fish life.
- The Environmental Liability (Prevention and Remediation) Regulations (Northern Ireland) 2009 (the Environmental Liability Regulations) which implement Directive 2004/35/EC on environmental liability with regard to the prevention and remedying of environmental damage.
- European Communities (Natural Habitats) Regulations 1997 which give effect to Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (the Habitats Directive) which enable the designation of special areas of conservation (endangered species and habitats of endangered species) as a contribution to an EU Community network to be known as NATURA 2000.
- A Biodiversity Strategy for Northern Ireland to 2020; sets out a range of targets and actions to be undertaken up to 2020.

6.2.2. Overall, whilst updates and amendments to legislation and policy have been implemented, none of these changes are considered to affect the conclusions as stated in the ES 2016.

## 6.3. BASELINE CONDITIONS

### PROTECTED AND NOTABLE SPECIES

6.3.1. The review of baseline conditions for Nature Conservation receptors has involved a data request to the Centre for Environmental Data and Recording (CEDaR) for any protected and notable species records within the Zone of Influence of the Proposed Scheme which may have been recorded

following publication of the ES 2016. The desk study returned 11 records of protected and / or notable species since 2014, these are summarised in Table 6-1 below.

**Table 6-1 - Records of protected and notable species identified within 2km of the Proposed Scheme (2014 - present)**

| Species common name | Species Latin name | No. of records | Date of record | Legal / Conservation Status[27] |
|---|---|---|---|---|
| **Mammal** | | | | |
| West European Hedgehog | *Erinaceus europaeus* | 1 | 10/05/2015 | NI priority |
| **Birds** | | | | |
| Buzzard | *Buteo Buteo* | 1 | 07/06/2015 | Wildlife Order NI |
| Fieldfare | *Turdus pilaris* | 1 | 05/01/2014 | BoCC Red, NI priority |
| Greenshank | *Tringa nebularia* | 1 | 10/11/2016 | Wildlife Order NI BoCC Amber |
| Grey heron | *Ardea cinerea* | 1 | 04/04/2014 | Wildlife Order NI |
| Grey Wagtail | *Motacilla cinerea* | 1 | 28/03/2015 | BoCC red |
| Kingfisher | *Alcedo atthis* | 1 | 17/08/2018 | Wildlife Order NI, BoCC amber |
| Little Egret | *Egretta garzetta* | 1 | 10/11/2016 | Wildlife Order NI |
| Willow warbler | *Phylloscopus trochilus* | 1 | 04/04/2014 | BoCC amber |
| **Invertebrates** | | | | |
| Holly blue | *Celastrina argiolus* | 1 | 16/05/2017 | Wildlife Order NI |
| **Plants** | | | | |
| Many-seasoned Thread-moss | *Bryum intermedium* | 1 | Unknown | NI priority |

## HABITATS

6.3.2. A desk based review of habitat extents and classification has been undertaken, using high-resolution aerial photography[28]. Minor changes in habitat extents were recorded in several locations. Due to the regularly changing nature of agricultural land management practice, changes from arable

[27] HabReg = Conservation of Habitats and Species Regulations (2017), The Wildlife (Northern Ireland) Order 1985, NI priority = Northern Ireland Priority Species List.
[28] Ordnance Survey Northern Ireland. Data supplied March 2019. Note: the age of the aerial photography images supplied varied from 2016 to 2018

to improved grassland and vice versa have not been recorded, as notable. Also, due to the potentially seasonal nature of small waterbodies, ponds etc. were only recorded as absent if they had been replaced by buildings or hardstanding, denoting a permanent loss of this habitat.

6.3.3. Several minor changes were recorded in the extent of hedgerow, woodland and grassland habitats, with some habitat loss to building / hard standing, some succession to scrub and woodland and some hedgerow / woodland removal for presumed agricultural management reasons. There are a small number of bog habitats which are showing evidence of increased woodland colonisation / succession, indicative of lack of management and / or poor drainage practice. An area of plantation woodland has been clear felled and would now be more readily mapped as improved grassland.

6.3.4. Finally, there have been impacts as a result of quarrying in the townland of Urbalreagh, removing hedgerows, improved grassland and pond habitats.

### DESIGNATED SITES

6.3.5. A review of European and national statutory designated sites for nature conservation has been undertaken and no changes were identified. In addition, data relating to non-statutory Local Wildlife Site (LWS) locations was obtained from the Northern Ireland Environment Agency Map Viewer[29]. This data is in the form of a non-downloadable layer, with no attributes associated with the site locations which would inform the nature of the non-statutory designation. Of the LWS locations reviewed online, 3 sites fall within 250m of the Proposed Scheme. As noted, no information is available on these sites, though Tattykeel LWS is known as a bog habitat site.

**Table 6-2 – Local Wildlife Sites within 250m of Proposed Scheme**

| Site Name | Chainage | ES 2016 Fig. No. | Distance from Road Footprint (m) |
|---|---|---|---|
| **McNally's Wood LWS** | 11600 - 12000 | 11.5 | ~ 200 |
| **Tattykeel LWS** | 63250 - 34000 | 11.20 | 0 (scheme passes through site) |
| **Rodney's New Fields LWS** | 69900 - 70250 | 11.22 | ~ 100 |

## 6.4. ASSESSMENT OF EFFECTS

6.4.1. The minor changes in habitat distribution and extent recorded throughout the Proposed Scheme zone of influence, and therefore the potential for the distribution and extent of protected and notable species is highly unlikely to have altered significantly since the ES 2016 publication.

[29] https://appsd.daera-ni.gov.uk/nedmapviewer/ accessed 11.03.2019

6.4.2. The slightly greater level of habitat change noted at the clear-felled plantation, and at the unauthorised quarrying operation have also been assessed as unlikely to change the conclusions of the ES 2016.

6.4.3. The inclusion of LWS in this assessment does not change the outcome of the previous assessments. These resources are allocated a local biodiversity value, and with the exception of Tattykeel LWS are outside of the footprint of the scheme, and have been assessed during the consideration of habitats sensitive to influences from the Proposed Scheme. Tattykeel LWS was assessed during the ES 2016 assessment process as bog habitat, and the inclusion of this area within a LWS does not change the outcome and conclusion of that assessment.

## 6.5. CONCLUSION

6.5.1. The assessment does not change the overall conclusions of the ES 2016, nor require additional mitigation measures to be provided.

# 7. NOISE AND VIBRATION

## 7.1. INTRODUCTION

7.1.1. This chapter of the ESA considers each of the noise and vibration impacts as assessed within Chapter 13 of the ES 2016, and establishes whether subsequent revisions made to the scheme construction phasing and transport model (including changes to the projected completion and design years), as part of the development for the 2017 Outline Business Case (OBC) give rise to a change in the significance of effects as reported within the ES 2016.

7.1.2. This chapter also considers changes in legislation, policy and guidance as well as potential changes in baseline conditions that may have arisen over the period since the assessments presented within the ES 2016 (Chapter 13) were prepared.

7.1.3. Where it is considered that the baseline or scheme changes since the publication of the ES 2016 do not have the potential to have a significant bearing upon the results of the completed assessments, further consideration to those impact areas has been scoped-out of this ESA 2019. Where it is considered that the baseline or scheme changes since the publication of the ES 2016 do have the potential to have a significant bearing upon the results of any of the above assessments, these impact areas have been considered further within this ESA 2019.

7.1.4. This chapter is necessarily technical in nature, but to assist the reader, Appendix 13C of the ES 2016 includes a glossary of acoustic terminology and supporting background information on the definition, measurement and interpretation of noise.

## 7.2. LEGISLATION AND POLICY

### REVIEW OF CHANGES TO LEGISLATION, PLANNING POLICY AND GUIDANCE

#### Legislation and Guidance

7.2.1. Appendix 13A of the ES 2016 presents the legislative context and guidance used to inform the noise and vibration assessment and includes summarises of the documents listed below. A review of any subsequent revisions of these documents and any additional published legalisation or guidance has been undertaken for this ESA 2019:

- Design Manual for Roads and Bridges Volumes 11: *Environmental Assessment,* Section 3: *Environmental Assessment techniques*, Part 7: Noise: HD 213/11 – Revision 1: *Noise and Vibration*[30]

[30] The Highways Agency, Scottish Government, Welsh Assembly Government and the Department for Regional Development Northern Ireland (2011), Design Manual for Roads and Bridges, Volume 11: *Environmental Assessment*, Section 3: *Environmental Assessment Techniques*, Part 7, HD 213/11 revision 1. *Noise and Vibration*

- The *Calculation of Road Traffic Noise* memorandum 1988[31]
- The *Noise Insulation Regulations (Northern Ireland) 1995*[32]
  The *Land Acquisition and Compensation (Northern Ireland) Order 1973*[33]
- BS 5228-1:2009: *Code of Practice for Noise and Vibration Control on Construction and Open Sites. Part 1: Noise*[34]
- BS 5228-2:2009: *Code of Practice for Noise and Vibration Control on Construction and Open Sites. Part 2: Vibration*[35]

7.2.2. There have been no changes to the above legislation or guidance with the exception that BS 5228-1:2009 and BS 5228-2:2009 were subject to minor amendments in 2014, with the latest versions of these documents now being BS 5228-1:2009+A1:2014[36] and BS 5228-2:2009+A1:2014[37] respectively. However, these minor amendments have no bearing upon the noise and vibration assessment work as detailed within the ES 2016.

7.2.3. BS 5228-1 was used to inform the completed construction noise assessment. Construction noise levels were predicted for a sample of identified construction 'hot spots', with levels predicted based on source noise data obtained from BS 5228-1:2009. This source data remains unchanged in BS 5228-1:2009+A1:2014.

7.2.4. The predicted construction noise levels were assessed against noise assessment criteria determined following the 'ABC method' as described in Section E.3.2 and Table E.1 of BS 5228-1:2009. Drawing upon the results of the baseline noise survey, the assessment criteria adopted within the appraisal were those for 'Category A', which are the lowest applicable following the 'ABC' method. These criteria apply where the prevailing receptor noise levels are identified to be below these criteria. These criteria remain unchanged in BS 5228-1:2009+A1:2014.

7.2.5. The explanatory text in section E.3.2 of BS 5228-1:2009 has been subject to minor amendments and clarifications to confirm i) that it is the predicted site noise level alone (not the total noise level including contribution from the prevailing environment) that is compared against the assessment criteria, and ii) that where the criteria are exceeded this indicates a 'potential' effect, which the assessor will need to consider under account of other project specific factors such as the duration and character of the impacts etc. to establish whether an actual effect would arise. With regards to

[31] Department of Transport and Welsh Office (1988). *Calculation of road traffic noise*
[32] Department of the Environment (1995). The Noise Insulation Regulations (Northern Ireland) 1995.
[33] HM Government (1973). *Land Acquisition and Compensation (Northern Ireland) Order 1973*
[34] Subcommittee B/564/1. (2009). BS 5228-1:2009: Code of practice for noise and vibration control on construction and open sites – Part 1: Noise. London: BSi
[35] Subcommittee B/564/1. (2009). BS 5228-2:2009: Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration. London: BSi.
[36] Subcommittee B/564/1. (2014). BS 5228-1:2009+A1:2014: Code of practice for noise and vibration control on construction and open sites – Part 1: Noise. London: BSi
[37] Subcommittee B/564/1. (2014). BS 5228-2:2009+A1:2014: Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration. London: BSi.

point i), this is the approach that was adopted in the ES 2016. With regards to point ii), in the ES 2016, noise levels above the adopted assessment criteria were considered likely to be significant, which is consistent with this guidance. The approach adopted therefore represented a worst case and reflected the low background noise levels and generally rural nature of the area local to each hot spot.

7.2.6. Table E.1 has been subject to minor amendments to ensure consistency with points i) and ii) as addressed above, but also to confirm that the noise index to be adopted in the assessment is the $L_{Aeq,T}$. This is the noise index that was adopted in the noise assessment detailed within the ES 2016.

7.2.7. Additional clarifying text is also included in the subnote to Table E.1, which is associated with the approach to be adopted when the prevailing noise levels exceed those presented in the Table (i.e. the prevailing levels are above the Category 'C' criteria). Notwithstanding that this additional text is for clarification purposes only, (i.e. it does not change the methodology presented), it is associated with the circumstance where the prevailing levels are above Category C, which is not the case for the completed assessment.

7.2.8. The amendments included in BS 5228-1:2009+A1:2014 therefore have no bearing upon the construction noise assessment presented in the ES 2016.

7.2.9. BS 5228-2 was used to inform the completed construction vibration assessment. Appendix 13A of the ES 2016 duplicates Table B1 of BS 5228-2:2009 detailing a scale of vibration levels associated with different degrees of human response. The scale is presented in terms of the peak particle velocity (PPV) vibration index.

7.2.10. Minor amendments are made to this table in BS 5228-1:2009+A1:2014, but the scale itself, as adopted within the ES 2016 assessment remains unchanged.

7.2.11. The amendments comprise the addition of footnotes to the Table and the addition of clarifying text that the highest of the criteria presented in the table applies '*in most building environments*'. The new footnotes confirm i) that the criteria presented apply at a point of entry into the recipient, ii) that a transfer function relating the external level to an internal level may need to be applied if only external measurements are available, and iii) that '*single to infrequent occurrences*' that give rise to exceedances of the stated criteria do not necessarily correspond to the stated effects in every case, with reference made to further guidance for this situation.

7.2.12. These additions have no bearing on the completed assessment, which identified substantial set back distances are present between receptors and the construction activities that were identified as being likely to generate the highest orders of groundborne vibration.

7.2.13. The amendments included in BS 5228-2:2009+A1:2014 therefore have no bearing upon the construction vibration assessment presented in the ES 2016.

**Planning Policy**

7.2.14. A review of national and local noise and vibration policy has been undertaken.

7.2.15. There have been no changes to national noise or vibration related planning policy.

7.2.16. At a local level, as part of a local government reorganisation in 2015, the Local Authorities have been combined into District Councils covering wider geographic areas. For example, Strabane District Council and Derry City Council were combined to become *Derry City & Strabane District Council,* the former Omagh District Council is now part of *Fermanagh & Omagh District Council* and Dungannon & South Tyrone Borough Council is now part of *Mid-Ulster District Council*.

7.2.17. These new wider area District Councils are each going through the process of generating new Local Development Plans for their areas, but these are in the early stages of development and not programmed to be adopted for several years. At the present time, the former council Local Area Plans therefore remain current and unchanged.

7.2.18. There have therefore been no changes to local or national policy that have a bearing upon the assessment work presented within the ES 2016.

## 7.3. METHODOLOGY AND SIGNIFICANCE CRITERIA

**ES 2016 Methodology and Significance Criteria**

7.3.1. As there has been no material change to legislation, policy or guidance, there has been no requirement to revisit or change the assessment methodology adopted within the ES 2016.

**Scope of this ESA 2019**

7.3.2. The ES 2016 presents the results of the following noise and vibration assessments:

- construction noise;
- construction traffic noise;
- construction vibration;
- operational road traffic noise – daytime;
- operational road traffic noise – night-time;
- operational road traffic noise nuisance; and
- operational road traffic induced airborne vibration nuisance.

7.3.3. With regards to the construction phase assessments (bullet points 1 to 3 above), it has been identified that there have been no material changes to the planning policy, legislation or guidance. The changes to the scheme phasing, opening and design years and provision of the 2017 OBC transportation data also have no effect on the information used to inform the construction noise, construction traffic or construction vibration assessments. It should be noted that Phases 1A and 1B as now proposed cover the same geographical extent as Phase 1 as appraised within the ES 2016.

7.3.4. The construction noise and construction traffic noise assessments were based on the lowest applicable assessment criteria when adopting the BS 5228-1:2009+A1:2014 ‘ABC’ assessment method, i.e. the Category ‘A’ criteria. Therefore, as detailed above should any changes have occurred in the baseline noise conditions, these only have the potential to result in higher (more lenient) noise assessment criteria applying at local receptors. In other words, should lower noise levels currently prevail compared to those previously measured, the same assessment criteria would continue to apply, but should higher noise levels prevail, then higher noise level criteria might apply.

7.3.5. The scope of the construction noise and construction traffic noise assessments within this ESA 2019 has therefore been limited to consideration as to whether any additional noise sensitive receptors may have arisen since preparation of the previous noise assessment. This is further considered below.

7.3.6. The construction vibration assessment was based on an absolute assessment scale that is independent of baseline groundborne vibration levels. As detailed previously, this scale remains unchanged.

7.3.7. Therefore, as for construction noise, the scope of the construction vibration assessment within this ESA 2019 has been limited to consideration as to whether any additional vibration sensitive receptors may have arisen since preparation of the previous assessment. This is further considered below.

7.3.8. It should be noted that whilst the predicted construction phase impacts detailed within the ES 2016 are not subject to change as a result of background conditions, or legislation or guidance changes, the timing of any identified effects might be slightly different reflecting the change in phasing and predicted opening years for each phase of the Proposed Scheme.

7.3.9. The operational phase assessments (the last four bullet above) are fundamentally based upon predicted receptor noise levels, determined via a detailed noise modelling exercise. Receptor noise levels are determined for both Do Minimum (i.e. without the scheme) and Do Something (i.e. with scheme) scenarios, and a sample of different years (e.g. year of opening / design year) and conditions (e.g. with and without mitigation etc.). A key input to the completed noise modelling was the Proposed Scheme traffic data which have been updated as a result of the revisions made to the scheme phasing and transport modelling as part of the preparation for the 2017 OBC.

7.3.10. It should however be noted that both the operational phase road traffic assessments (bullet points 4 and 5 above) and the operational phase nuisance assessments (bullet points 6 and 7 above) are all based on the same outputs from the detailed noise modelling exercise. Therefore, this ESA has focussed on the operational phase road traffic noise assessments. This is because where it is identified that the scheme changes have had no significant effect on the findings of these assessments, the same conclusions can also be drawn for the nuisance assessments.

## 7.4. BASELINE CONDITIONS

### BASELINE NOISE ENVIRONMENT

#### Baseline Noise Survey

7.4.1. To inform the ES 2016, a detailed baseline noise survey was completed over the course of 2014, with measurements undertaken in April, June and October. Over the course of the survey, a total of 54 measurement locations were adopted, of which 26 were subject to both daytime and night-time measurements. Measurements were undertaken both within the main local settlements and the more sparsely populated rural areas associated with the Proposed Scheme route corridor.

7.4.2. Within the ES 2016 the results of the baseline noise survey were used to inform the selection of appropriate construction noise assessment criteria. The results were also used to confirm that road traffic noise was the predominant noise source present across the noise study area.

7.4.3. Paragraph 13.3.5 of the ES 2016 confirms that the BS 5228 'ABC Method' was adopted in the assessment of construction noise. This paragraph also confirms that based on the results of the baseline noise survey, the adopted construction noise assessment criterion was 65 dB $L_{Aeq,T}$, which is that applicable under Category 'A' circumstance. As detailed in paragraph 7.3.4, this represents a worst case because Category 'A' has the lowest applicable assessment criteria when applying the 'ABC' assessment method. An update of the baseline noise survey is therefore not required to inform the construction noise assessment.

7.4.4. In addition, given the length and extent of the scheme, it is considered that the previously completed noise survey remains fit for purpose to confirm that road traffic noise will remain the predominant source along the length of the scheme.

**Modelled Baseline / Do Minimum Noise Levels**

7.4.5. The operational phase noise assessments are based upon a comparison of the predicted receptor noise levels for both the Do Minimum (without scheme) and Do Something (with scheme) scenarios. These assessments therefore rely upon a calculated (not measured) baseline / Do Minimum noise level for each considered noise sensitive receptor.

7.4.6. The calculated receptor noise levels are based upon the Proposed Scheme traffic data which have been updated to reflect revisions made to phasing and transport modelling. The additional assessment work presented within this ESA 2019 has adopted the 2017 OBC traffic data and therefore includes the latest calculated Do Minimum noise levels for all considered noise sensitive receptors.

## NOISE AND VIBRATION SENSITIVE RECEPTORS

**Cumulative Developments**

7.4.7. As detailed above as part of Scoping this ESA 2019, a number of cumulative developments/projects, in addition to those assessed in the ES 2016, have been identified. An updated list of cumulative developments is therefore presented within Appendix D (Table D2 and Table D3). Of the additional identified developments that are scoped in to this ESA 2019, only the following fall within the sensitive receptor categories that were assessed within the ES 2016.

- Lisanelly College (Planning reference: LA10/2016/0711/RM: Includes five new school buildings.

7.4.8. However, this development, this falls outside the ES 2016 assessment study area. No further consideration has therefore been given to this development within this chapter of the ESA 2019.

**Additional Consented Receptors**

7.4.9. The ES 2016 considers a total of 16,296 residential receptors and 332 'other' (i.e. non-residential) sensitive receptors as identified within the assessment study area. The location and number of these receptors is identified with the use of NI Pointer data and a review of planning applications and consents up to February 2014. The total of 16,296 residential receptors included 40 dwellings that were identified as having planning consent.

7.4.10. Notwithstanding that the number of dwellings with planning consent constituted only a very small proportion of the total number of residential receptors (just 0.25%), a further review of the latest

planning consent information for the route corridor has been undertaken. This further review has considered all new applications up to February 2019.

7.4.11. This review has been limited to within 300m of the main route corridor, which is the area subject to the greatest noise level increases.

7.4.12. The obtained data have been filtered to identify all residential developments that have been consented, and the resulting dataset has then been reduced as follows:

- All applications for single dwelling home extensions have been removed on the basis that these applications are associated with existing dwellings which will already be accounted for in the adopted receptor data set.
- All applications for 'replacement' dwellings have been removed on the basis that the associated site already has a dwelling that will be accounted for in the adopted receptor dataset.
- All applications associated with a planning variation have been removed on the basis that these developments will already be accounted for through inclusion of the application that is sought to be varied, except where the variation is for a change in the number of dwellings proposed which has been accounted for.

7.4.13. The final dataset comprised a total of 29 consented developments associated with a total 141 dwellings. These consents are summarised as follows:

- a single consented development (LA11/2016/0753/O), for 85 dwellings at the former IAWS site located on Woodside Road in Newbuildings;
- a single consented development (K/2014/0497/F), for 11 dwellings at land to the west of 217, 217a and 317b Newtownsaville Road and land to the south-east of Springfield Road/Newtownsaville Road junction, Newtownsaville;
- a single consented development (K/2014/0495/F), for four dwellings adjacent and to the north east of 220 Newtownsaville Road, opposite 217, 217a and 219 Newtownsaville Road, Newtownsaville;
- A single consented development (LA11/2017/1064/F) for 14 dwellings at Land to the east of 1 - 3 Lismore Park, Sion Mills, County Tyrone;
- Two consents for developments comprising two dwellings; and
- 23 consents for single dwellings.

7.4.14. It should be noted that these consents will have been granted in the knowledge of the Proposed Scheme. In addition, the total of 141 additional consented developments is small in comparison to the total of 16,296 residential receptors considered within the ES 2016 (less than 1%), but notwithstanding this, consideration has been given the location and spread of these receptors along the length of the Proposed Scheme.

7.4.15. With regards to the consented development for 85 dwellings, this site is located within the settlement of Newbuildings. The full extent of Newbuildings is already included within the ES 2016 receptor dataset, and this site is located between existing residential parts of the settlement. In addition, the site is located adjacent to both the existing A5 to the west and Woodside Road to the south and east. These additional consented receptors are therefore considered likely to fall within the Minor or Negligible noise level change bands if they were to be added to the ES 2016 receptor dataset.

Therefore, they would not have a significant bearing upon the conclusions drawn within the ES 2016.

7.4.16. The same is also true of the 14, 11 and 4 dwelling consented developments. The 14 dwelling development is proposed at Lismore Park, Sion Mills and is set well back from the existing A5 and screened from the Proposed Scheme by other existing residential dwellings that are closer. The 11 and 4 dwelling developments are close to each other, both being on Newtonsaville Road, and are in amongst a cluster of other existing dwellings. These consented developments, as well as their existing neighbours are set back from the Proposed Scheme.

7.4.17. The remaining 1 and 2 dwelling consented developments are generally scattered along the length of, and at varying distances from, the Proposed Scheme. Many of these consented dwellings are located immediately adjacent to existing dwellings that are already accounted for within the ES 2016 receptor dataset, and all are located at similar distances from the Proposed Scheme as other existing dwellings. The consented developments are not located in groups close to the proposed A5 where significant noise level increases are predicted to arise, or positioned in such a way that, if they were to be added to the ES 2016 receptor dataset, they would have a significant bearing upon the conclusions drawn within the ES 2016.

7.4.18. It is also of note that consideration has only been given to those receptors that are located within 300m of the Proposed Scheme (i.e. those with the greatest potential for noise level increases). If this exercise was to be extended to cover the full assessment study area, which includes the existing A5, it is considered that a similar spread of consented developments would also be found across areas identified to be subject to noise level decreases. This would further reduce the potential for any change to conclusions drawn within the ES 2016.

7.4.19. The location of the consented developments has also been considered with respect to proximity of the potential construction noise ‘hot spots’, and the construction traffic routes as assessed within the ES 2016. The ES 2016 detail a series of construction noise distance buffers for different working operations. These were applied around the ‘hot spots’ and correspond to different noise level criteria being met/exceeded. The numbers of properties within the distance buffers are detailed.

7.4.20. It has been identified that some of the consented developments fall within the construction noise distance buffers, whilst some are in the vicinity of the construction traffic routes. It is of note that a portion of the 85 dwelling consented development falls within the buffers for landscaping works associated with the delivery of Junction 1. However, there are other existing dwellings within these buffers meaning that the overarching finding that 26 of the 46 assessed ‘hot spots’ have the potential for significant impacts remains true. Paragraph 13.6.2 of the ES 2016 states that the numbers of receptors within each hot spot “*are small, the highest being 8 in the vicinity of junction 1*”. This ESA 2019 has identified that this hot spot also includes a portion of a recently consented residential development.

7.4.21. The assessment of construction vibration presented in the ES 2016 is based on the set back distances that are present between receptors and the construction activities that are identified as being likely to generate the highest orders of groundborne vibration. None of the consented developments are closer to these activities than existing receptors, so there is no change to the conclusions drawn in the ES 2016 on construction vibration.

## 7.5. ASSESSMENT OF EFFECTS

### OPERATIONAL PHASE ASSESSMENTS

7.5.1. The following assessment years are adopted within the ES 2016:

- Phase 1 Year of Opening: 2019
- Phase 2 Year of Opening: 2023
- Phase 3 (full scheme) Year of Opening: 2028
- Scheme Design Year: 2041

7.5.2. The now anticipated opening and design years for the Proposed Scheme are as follows:

- Phase 1A Year of Opening: 2022 (was 2019)
- Phase 1B Year of Opening: 2023 (was 2019)
- Phase 2A Year of Opening: 2025 (was 2023)
- Phase 2B Year of Opening: 2025 (was 2023)
- Phase 3 (full scheme) Year of Opening: 2028 (unchanged)
- Scheme Design year: 2043 (was 2041)

7.5.3. Whether these changes in the scheme traffic data have any significant bearing upon operational phase noise and the impacts reported within the ES 2016 has been investigated by:

a) consideration as to whether there is a significant change to the adopted noise study area (which is calculated based on the scheme traffic data): and
b) the determination of revised / updated assessment summary tables for a sample of the scenario comparisons made within the ES 2016, and contrasting the 'previous' and 'updated' results.

7.5.4. Each of the above points is considered in turn below.

### OPERATIONAL PHASE STUDY AREA

7.5.5. The study area for the operational phase assessment was based upon the guidance contained with HD 213/11.

7.5.6. A 1km buffer was applied around the Proposed Scheme and the existing A5 route (i.e. the primary route that would be relieved after opening of the scheme). 600m buffers where then applied around these routes and any other route within the 1km buffer that was 'affected' as a result of the scheme. 50m buffers was also applied to any route outside the 1km buffer that was 'affected', extending out a further 1km. An 'affected' route was one where the traffic data indicate that it would be subject to either a 1 dB noise level change (increase or decrease) in the short-term, or a 3 dB noise level change (increase or decrease) in the long-term.

7.5.7. Within the ES, the short-term and long-term changes were based on the following scenario comparisons:

- Short-term: 2028 DM versus 2028 DS
- Long-term: 2028 DM versus 2041 DS

7.5.8. A revised study area has therefore been generated based on the 2017 OBC (latest) traffic, i.e. based on the following comparisons:

- Short-term: 2028 DM versus 2028 DS (years unchanged)
- Long-term: 2028 DM versus 2043 DS (updated design year)

7.5.9. Within the ES 2016, detailed noise level calculations were undertaken for all 16,296 residential receptors and 332 non-residential receptors as identified within the 600m and 50m buffers.

7.5.10. It has been identified that, when adopting the revised traffic data, there is a small change in the routes that are identified to be 'affected'. However, this has minimal effect on the resulting study area, and the geographic extent of the receptors for which detailed noise level calculations were undertaken. This is because these are largely dictated by the route of the Proposed Scheme and that of the existing A5, which remains unchanged.

7.5.11. Any change in study area arising as a result of adoption of the 2017 OBC traffic data (including updated assessment years) is therefore not expected to have a significant bearing upon the conclusions drawn in the ES 2016.

**OPERATIONAL ROAD TRAFFIC NOISE**

7.5.12. The primary output of the operational phase road traffic noise assessments, as detailed within the ES 2016, is a series of summary tables within which the numbers of residential and non-residential receptors are categorised according to noise level change bands. To populate these summary tables the following scenarios are modelled with the ES 2016:

- Phase 1 2019 Do-Minimum (2019 DM);
- Phase 1 2019 Do-Something (2019 DS);
- Phase 2 2023 Do-Minimum (2023 DM);
- Phase 2 2023 Do-Something (2019 DS);
- Phase 3 2028 Do-Minimum (2028 DM);
- Phase 3 2028 Do-Something (2028 DS);
- Design year 2041 Do-Minimum (2041 DM); and
- Design year 2041 Do-Something (2041 DS).

7.5.13. Drawing on the modelled results for the above scenarios, the completed assessment as reported within the ES 2016 considers the following in turn:

a) the daytime noise impacts due to Phase 3 operation (the full scheme);
b) the additional short-term impacts due to the phased build-out of the scheme; and
c) the night-time noise impacts due Phase 3 operation (the full scheme).

7.5.14. Each of the above is considered in turn below

**Daytime Phase 3 (Full Scheme)**

7.5.15. Listed below are the summary tables and associated scenario comparisons that form the basis of the daytime impact assessment of Phase 3 (the full scheme) (bullet point a) above):

- Table 13.8: Short-term change with scheme - DM 2028 versus DS 2028 (no mitigation, residential receptors);
- Table 13.9: Short-term change with scheme - DM 2028 versus DS 2028 (no mitigation, non-residential receptors);
- Table 13.10: Long-term change without scheme - DM 2028 versus DM 2041 (no scheme, residential receptors);
- Table 13.11: Long-term change without scheme - DM 2028 versus DM 2041 (no scheme, non-residential receptors);
- Table 13.12: Long-term change with scheme - DM 2028 versus DS 2041 (no mitigation, residential receptors);
- Table 13.13: Long-term change with scheme - DM 2028 versus DS 2041 (no mitigation, non-residential receptors); and
- Table13.14: Long-term change with scheme - DM 2028 versus DS 2041 (with mitigation, residential receptors).

7.5.16. Equivalent results to those presented in the above listed tables have been prepared based on the updated scheme traffic data. The '2016 ES' and 'Revised' results, for each scenario comparison, are compared and contrasted in Tables 7-1 to 7-7 below.

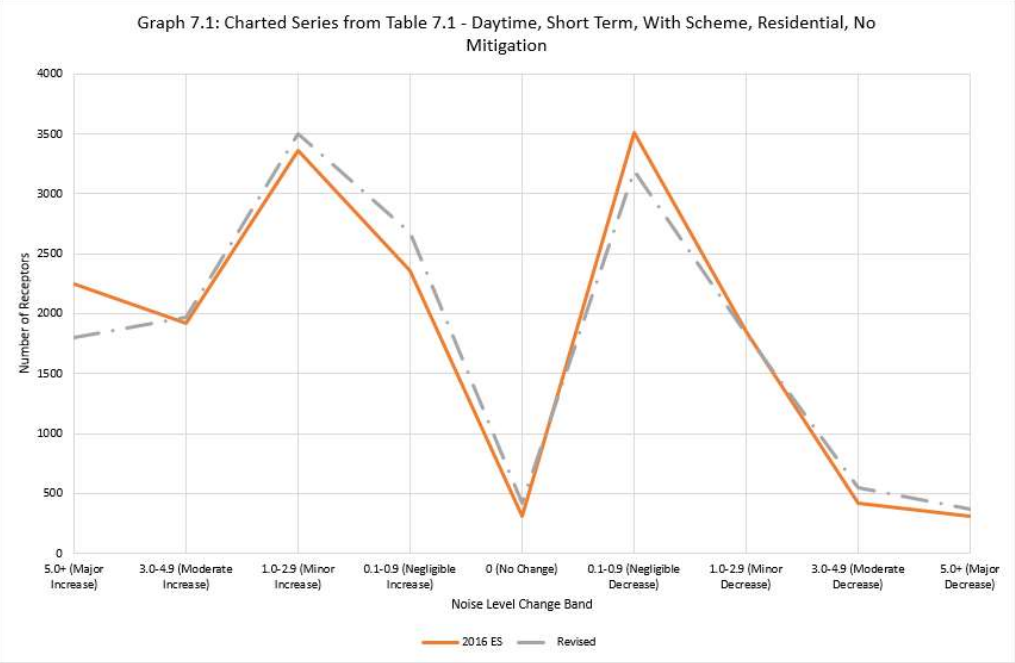
7.5.17. The start of each table details the differences between the '2016 ES' and the 'Revised' scenario comparisons that are being compared within each table. Beneath that information, the '2016 ES' and the 'Revised' results are then compared and contrasted.

7.5.18. To allow a like-for-like comparison of results, the same receptor sets as used in the ES 2016 have been adopted.

**Table 7-1 – Daytime, Short-term, With scheme, Residential receptors, No mitigation (ES 2016 Table 13.8)**

| Factor | | ES 2016 Table 13.8 [A] | Revised / updated scenario [B] | Difference [B - A = C] |
|---|---|---|---|---|
| Scenarios compared | | DM 2028 | DM 2028 | No change |
| | | DS 2028 | DS 2028 | No change |
| Receptors | | Residential | Residential | No change |
| Mitigation included | | No | No | No change |
| Period | | Daytime | Daytime | No change |
| Traffic model | | ES 2016 | 2017 OBC | Updated traffic model |
| **Summary of Changes: Updated Traffic Model** | | | | |
| **Change in noise level ($L_{A10,18h}$)** | | **Number of receptors** | | |
| Increase | 0.1-0.9 (Negligible) | 2358 | 2677 | 319 |
| | 1.0-2.9 (Minor) | 3360 | 3496 | 136 |
| | 3.0-4.9 (Moderate) | 1923 | 1972 | 49 |
| | 5.0+ (Major) | 2252 | 1802 | -450 |
| No change | 0 (No change) | 313 | 415 | 102 |
| Decrease | 0.1-0.9 (Negligible) | 3509 | 3191 | -318 |
| | 1.0-2.9 (Minor) | 1852 | 1827 | -25 |
| | 3.0-4.9 (Moderate) | 416 | 547 | 131 |
| | 5.0+ (Major) | 313 | 369 | 56 |

7.5.19. The following graph presents the ES 2016 and revised datasets from Table 7-1 above:



7.5.20. From Table 7-1 and the associated graph, the following conclusions can be drawn:

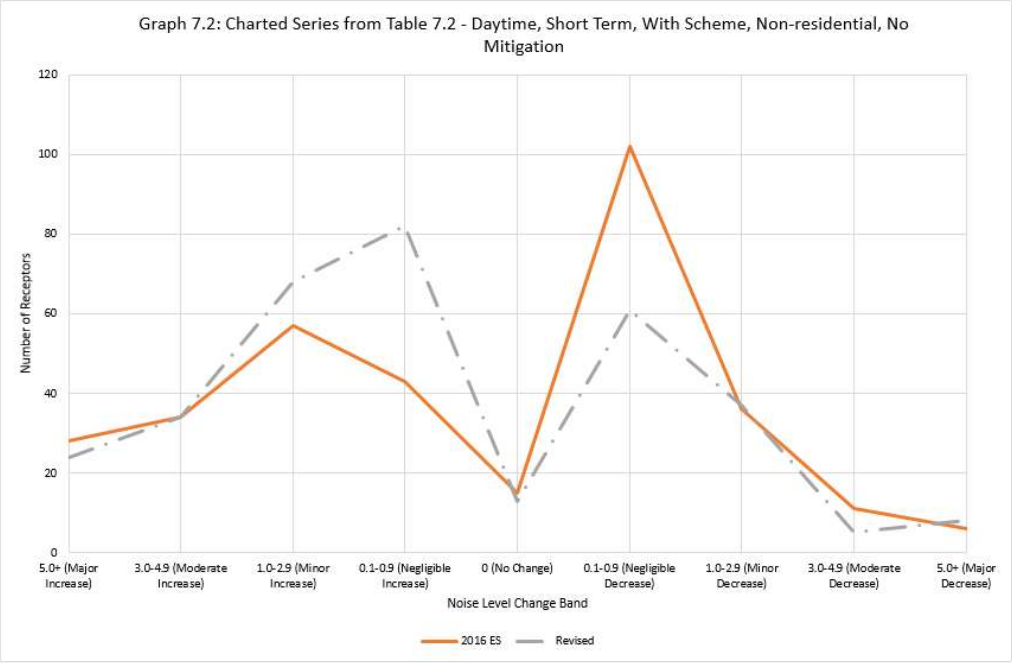
- the pattern of results from the ES 2016 and revised assessment are very similar, indicating that the 2017 OBC traffic model has had little effect on the modelled assessment results;
- the greatest difference between the datasets is that the revised results have less receptors within the Major noise level increase band; and
- the revised results also have more receptors in the Major and Moderate decrease bands than the ES 2016 results.

7.5.21. These results indicate that the ES 2016 represents a worst case and that the changes in the traffic model have no significant bearing upon the conclusions drawn in the ES 2016.

**Table 7-2 – Daytime, Short-term, With scheme, Non-residential receptors, No mitigation (ES 2016 Table 13.9)**

| Factor | | ES 2016 Table 13.9 [A] | Revised / updated scenario [B] | Difference [B - A = C] |
|---|---|---|---|---|
| Scenarios compared | | DM 2028 | DM 2028 | No change |
| | | DS 2028 | DS 2028 | No change |
| Receptors | | Non-residential | Non-residential | No change |
| Mitigation included | | No | No | No change |
| Period | | Daytime | Daytime | No change |
| Traffic model | | ES 2016 | 2017 OBC | Updated traffic model |
| **Summary of Changes: Updated Traffic Model** | | | | |
| **Change in noise level ($L_{A10,18h}$)** | | **Number of receptors** | | |
| Increase | 0.1-0.9 (Negligible) | 43 | 82 | 39 |
| | 1.0-2.9 (Minor) | 57 | 68 | 11 |
| | 3.0-4.9 (Moderate) | 34 | 34 | 0 |
| | 5.0+ (Major) | 28 | 24 | -4 |
| No change | 0 (No change) | 15 | 13 | -2 |
| Decrease | 0.1-0.9 (Negligible) | 102 | 61 | -41 |
| | 1.0-2.9 (Minor) | 36 | 37 | 1 |
| | 3.0-4.9 (Moderate) | 11 | 5 | -6 |
| | 5.0+ (Major) | 6 | 8 | 2 |

7.5.22. The following graph presents the ES 2016 and revised datasets from Table 7-2 above:




7.5.23. From Table 7-2 and the associated graph, the following conclusions can be drawn:

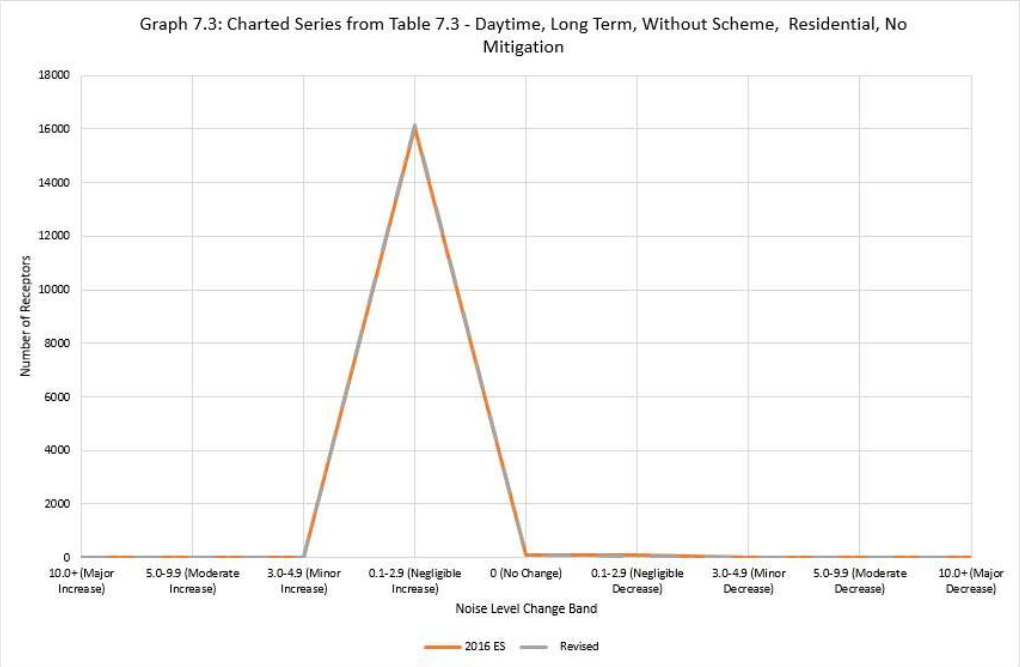
- the pattern of results from the ES 2016 and revised assessment are comparable;
- the most notable differences between the two datasets are present within the Minor increase to Negligible decrease range; and
- very similar results are identified between the two datasets for the Moderate and Major change bands (increases and decreases).

7.5.24. The similarity of results within the Moderate and Major change bands (increases and decreases), indicates that the updates to the traffic model have no significant bearing upon the conclusions drawn in the ES 2016.

**Table 7-3 – Daytime, Long-term, Without scheme, Residential receptors, No mitigation (ES 2016 Table 13.10)**

| Factor | | ES 2016 Table 13.10 [A] | Revised / updated scenario [B] | Difference [B - A = C] |
|---|---|---|---|---|
| Scenarios compared | | DM 2028 | DM 2028 | No change |
| | | DM 2041 | DM 2043 | Revised design year (+2 years) |
| Receptors | | Residential | Residential | No change |
| Mitigation included | | No | No | No change |
| Period | | Daytime | Daytime | No change |
| Traffic model | | ES 2016 | 2017 OBC | Updated traffic model |
| **Summary of Changes: Revised Design Year (+2 Years) and Updated Traffic Model** | | | | |
| **Change in noise level ($L_{A10,18h}$)** | | **Number of receptors** | | |
| Increase | 0.1-2.9 (Negligible) | 16072 | 16140 | +68 |
| | 3.0-4.9 (Minor) | 26 | 11 | -15 |
| | 5.0-9.9 (moderate) | 0 | 0 | 0 |
| | 10.0+ (Major) | 0 | 0 | 0 |
| No change | 0 (No change) | 93 | 92 | -1 |
| Decrease | 0.1-2.9 (Negligible) | 105 | 50 | -55 |
| | 3.0-4.9 (Minor) | 0 | 3 | +3 |
| | 5.0-9.9 (moderate) | 0 | 0 | 0 |
| | 10.0+ (Major) | 0 | 0 | 0 |

7.5.25. The following graph presents the ES 2016 and revised datasets from Table 7-3 above:




7.5.26. From Table 7-3 and the associated graph, the following conclusions can be drawn:

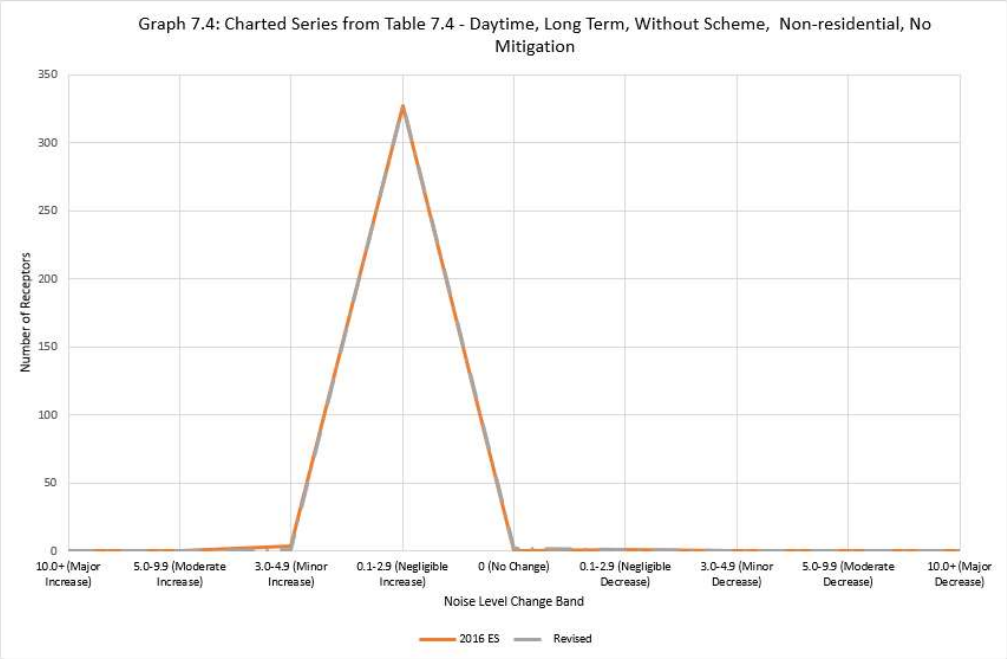
- the pattern of results from the ES 2016 and revised assessment are very similar, indicating that the 2017 OBC traffic model in conjunction with two additional years of growth (to the new design year) has had little effect on the modelled assessment results; and
- it remains that no receptors fall within the Moderate or Major noise level change bands (increases or decreases).

7.5.27. The similarity of these results indicates that the changes in the traffic model in conjunction with a new design year have no significant bearing upon the conclusions drawn in the ES 2016.

**Table 7-4 – Daytime, Long-term, Without scheme, Non-residential receptors, No mitigation (ES 2016 Table 13.11)**

| Factor | | ES 2016 Table 13.11 [A] | Revised / updated scenario [B] | Difference [B - A = C] |
|---|---|---|---|---|
| Scenarios compared | | DM 2028 | DM 2028 | No change |
| | | DM 2041 | DM 2043 | Revised design year (+2 years) |
| Receptors | | Non-residential | Non-residential | No change |
| Mitigation included | | No | No | No change |
| Period | | Daytime | Daytime | No change |
| Traffic model | | ES 2016 | 2017 OBC | Updated traffic model |
| **Summary of Changes: Revised Design Year (+2 Years) and Updated Traffic Model** | | | | |
| **Change in noise level ($L_{A10,18h}$)** | | **Number of receptors** | | |
| Increase | 0.1-2.9 (Negligible) | 327 | 328 | +1 |
| | 3.0-4.9 (Minor) | 4 | 1 | -3 |
| | 5.0-9.9 (moderate) | 0 | 0 | 0 |
| | 10.0+ (Major) | 0 | 0 | 0 |
| No change | 0 (No change) | 0 | 2 | +2 |
| Decrease | 0.1-2.9 (Negligible) | 1 | 1 | 0 |
| | 3.0-4.9 (Minor) | 0 | 0 | 0 |
| | 5.0-9.9 (moderate) | 0 | 0 | 0 |
| | 10.0+ (Major) | 0 | 0 | 0 |

7.5.28. The following graph presents the ES 2016 and revised datasets from Table 7-4 above:




7.5.29. From Table 7-4 and the associated graph, the following conclusions can be drawn:

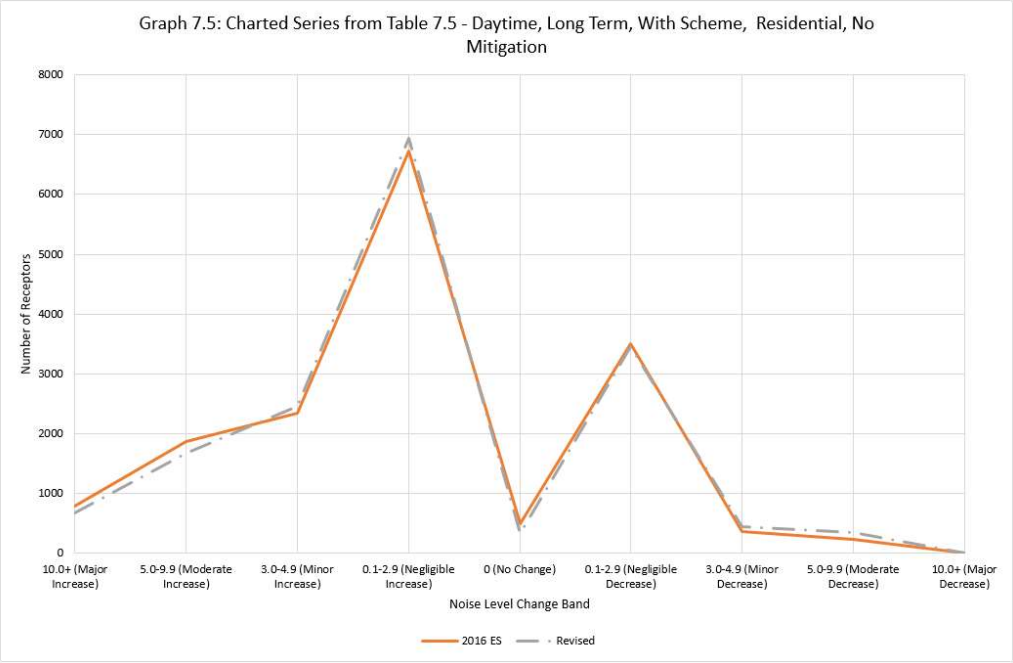
- the pattern of results from the ES 2016 and revised assessment are very similar, indicating that the 2017 OBC traffic model and new design year have had little effect on the modelled assessment results; and
- It remains that no receptors fall within the Moderate or Major noise level change bands (increases or decreases).

7.5.30. The similarity of these results indicates that the changes in the traffic model in conjunction with a new design year have no significant bearing upon the conclusions drawn in the ES 2016.

**Table 7-5 – Daytime, Long-term, With scheme, Residential receptors, No mitigation (ES 2016 Table 13.12)**

| Factor | | ES 2016 Table 13.12 [A] | Revised / updated scenario [B] | Difference [B - A = C] |
|---|---|---|---|---|
| Scenarios compared | | DM 2028 | DM 2028 | No change |
| | | DS 2041 | DS 2043 | Revised design year (+2 years) |
| Receptors | | Residential | Residential | No change |
| Mitigation included | | No | No | No change |
| Period | | Daytime | Daytime | No change |
| Traffic model | | ES 2016 | 2017 OBC | Updated traffic model |
| **Summary of Changes: Revised Design Year (+2 Years) and Updated Traffic Model** | | | | |
| **Change in noise level ($L_{A10,18h}$)** | | **Number of receptors** | | |
| Increase | 0.1-2.9 (Negligible) | 6732 | 6945 | 213 |
| | 3.0-4.9 (Minor) | 2337 | 2449 | 112 |
| | 5.0-9.9 (moderate) | 1873 | 1670 | -203 |
| | 10.0+ (Major) | 781 | 667 | -114 |
| No change | 0 (No change) | 492 | 320 | -172 |
| Decrease | 0.1-2.9 (Negligible) | 3497 | 3456 | -41 |
| | 3.0-4.9 (Minor) | 356 | 439 | 83 |
| | 5.0-9.9 (moderate) | 225 | 346 | 121 |
| | 10.0+ (Major) | 3 | 4 | 1 |

7.5.31. The following graph presents the ES 2016 and revised datasets from Table 7-5 above:




7.5.32. From Table 7-5 and the associated graph, the following conclusions can be drawn:

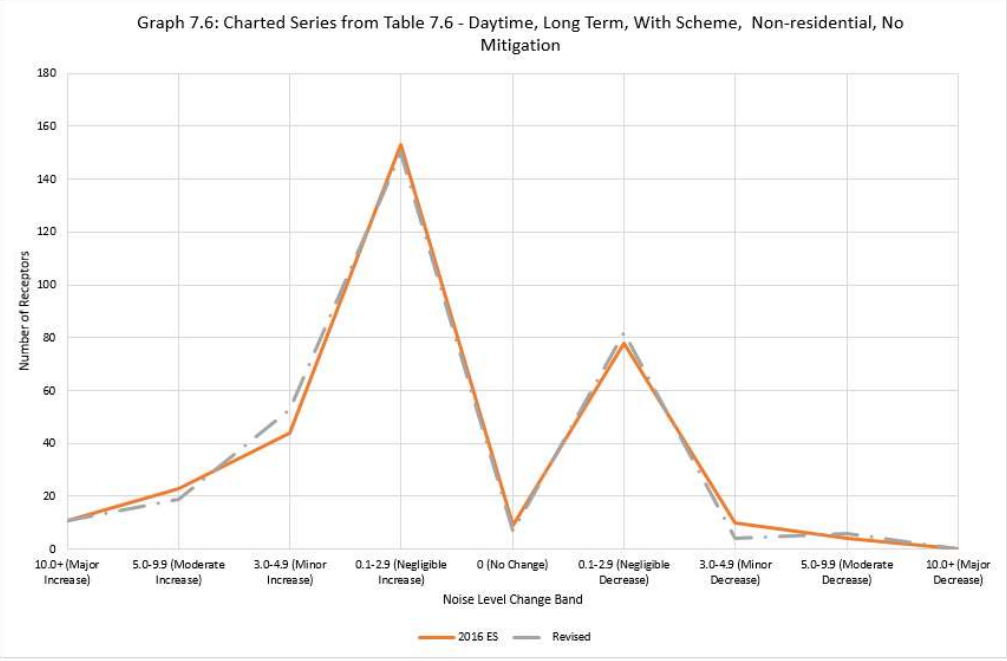
- the pattern of results from the ES 2016 and revised assessment are very similar, indicating that the OBC 2017 traffic model and new design year have had little effect on the modelled assessment results;
- the revised results have less receptors within the Major noise level increase band than the ES 2016 results; and
- the revised results also have more receptors in the Major and Moderate decrease bands than the 2016 results.

7.5.33. These results indicate that the ES 2016 represents a worst case and that the updates to the traffic model in conjunction with a new design year have no significant bearing upon the conclusions drawn in the ES 2016.

**Table 7-6 – Daytime, Long-term, With scheme, Non-residential receptors, No mitigation (ES 2016 Table 13.13)**

| Factor | | ES 2016 Table 13.13 [A] | Revised / updated scenario [B] | Difference [B - A = C] |
|---|---|---|---|---|
| Scenarios compared | | DM 2028 | DM 2028 | No change |
| | | DS 2041 | DS 2043 | Revised design year (+2 years) |
| Receptors | | Non-residential | Non-residential | No change |
| Mitigation included | | No | No | No change |
| Period | | Daytime | Daytime | No change |
| Traffic model | | ES 2016 | 2017 OBC | Updated traffic model |
| **Summary of Changes: Revised Design Year (+2 Years) and Updated Traffic Model** | | | | |
| **Change in noise level ($L_{A10,18h}$)** | | **Number of receptors** | | |
| Increase | 0.1-2.9 (Negligible) | 153 | 150 | -3 |
| | 3.0-4.9 (Minor) | 44 | 53 | 9 |
| | 5.0-9.9 (moderate) | 23 | 19 | -4 |
| | 10.0+ (Major) | 11 | 11 | 0 |
| No change | 0 (No change) | 9 | 7 | -2 |
| Decrease | 0.1-2.9 (Negligible) | 78 | 82 | 4 |
| | 3.0-4.9 (Minor) | 10 | 4 | -6 |
| | 5.0-9.9 (moderate) | 4 | 6 | 2 |
| | 10.0+ (Major) | 0 | 0 | 0 |

7.5.34. The following graph presents the ES 2016 and revised datasets from Table 7-6 above:



7.5.35. From Table 7-6 and the associated graph, the following conclusions can be drawn:

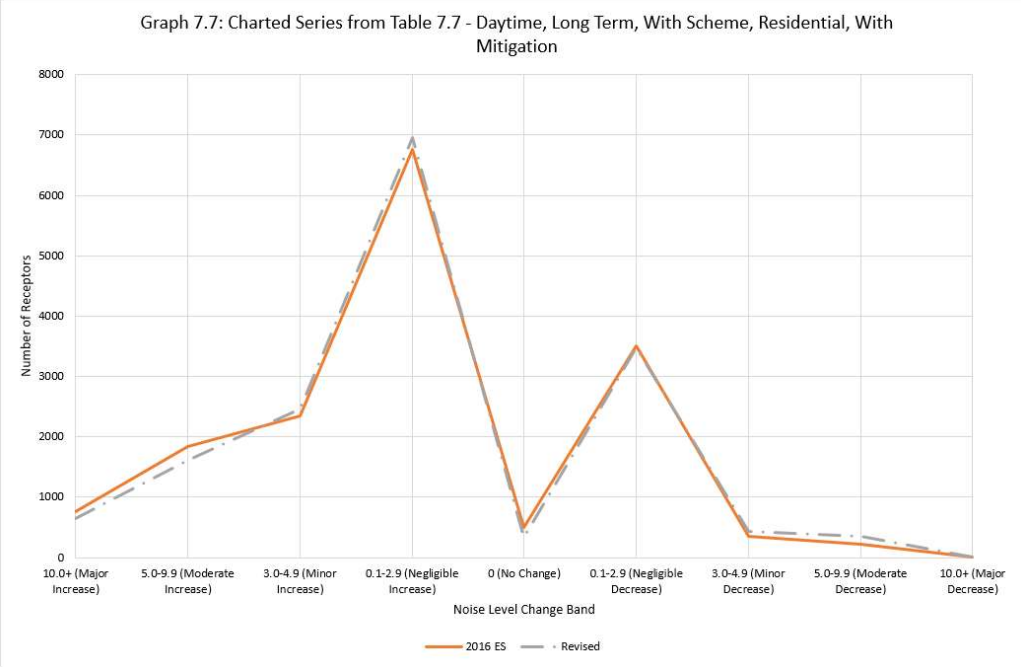
- the pattern of results from the ES 2016 and revised assessment are very similar indicating that the OBC 2017 traffic model and new design year have had little effect on the modelled assessment results.

7.5.36. The similarity of results indicates that the updates to the traffic model in conjunction with a new design year have no significant bearing upon the conclusions drawn in the ES 2016.

**Table 7-7 – Daytime, Long-term, With scheme, Residential receptors, With mitigation (ES 2016 Table 13.14)**

| Factor | | ES 2016 Table 13.14 [A] | Revised / updated scenario [B] | Difference [B - A = C] |
|---|---|---|---|---|
| Scenarios compared | | DM 2028 | DM 2028 | No change |
| | | DS 2041 | DS 2043 | Revised design year (+2 years) |
| Receptors | | Residential | Residential | No change |
| Mitigation included | | Yes | Yes | No change |
| Period | | Daytime | Daytime | No change |
| Traffic model | | ES 2016 | 2017 OBC | Updated traffic model |
| **Summary of Changes: Revised Design Year (+2 Years) and Updated Traffic Model** | | | | |
| **Change in noise level ($L_{A10,18h}$)** | | **Number of receptors** | | |
| Increase | 0.1-2.9 (Negligible) | 6764 | 6965 | 201 |
| | 3.0-4.9 (Minor) | 2341 | 2459 | 118 |
| | 5.0-9.9 (moderate) | 1835 | 1620 | -215 |
| | 10.0+ (Major) | 765 | 652 | -113 |
| No change | 0 (No change) | 494 | 335 | -159 |
| Decrease | 0.1-2.9 (Negligible) | 3510 | 3473 | -37 |
| | 3.0-4.9 (Minor) | 358 | 439 | 81 |
| | 5.0-9.9 (moderate) | 226 | 349 | 123 |
| | 10.0+ (Major) | 3 | 4 | 1 |

7.5.37. The following graph presents the ES 2016 and revised datasets from Table 7-7 above:




7.5.38. From Table7-7 and the associated graph, the following conclusions can be drawn:

- For the with mitigation scenario, the pattern of results from the ES 2016 and revised assessment are very similar indicating that the OBC 2017 traffic model and new design year have had little effect on the modelled assessment results.

7.5.39. The similarity of results indicates that, when including for mitigation, the updates to the traffic model in conjunction with a new design year have no significant bearing upon the conclusions drawn in the ES 2016.

**Impacts Associated with Phasing**

7.5.40. Phase 1, as considered within the ES 2016, covers the same area as the combined areas covered by Phase 1A and Phase 1B as now programmed. It is just that the associated years of build-out for these areas have changed to reflect a revised programme.

7.5.41. To identify whether the revised assessment years (for the interim phases of the scheme) are likely to give rise to a change in impacts, consideration has been given to Phase 1A.

7.5.42. The approach to this assessment is the same as that adopted for the full scheme daytime assessment as detailed above. However, because the previous and current phases (previous Phase 1, versus revised Phase 1A) cover different geographic areas, the ES 2016 Phase 1 receptor results have been 'geo-fenced' to cover the same area as the now proposed Phase 1A, in order to allow a like-for-like comparison. This approach ensures that the results are being compared and contrasted for the same set of receptors (i.e. those in the vicinity of Phase 1A only).

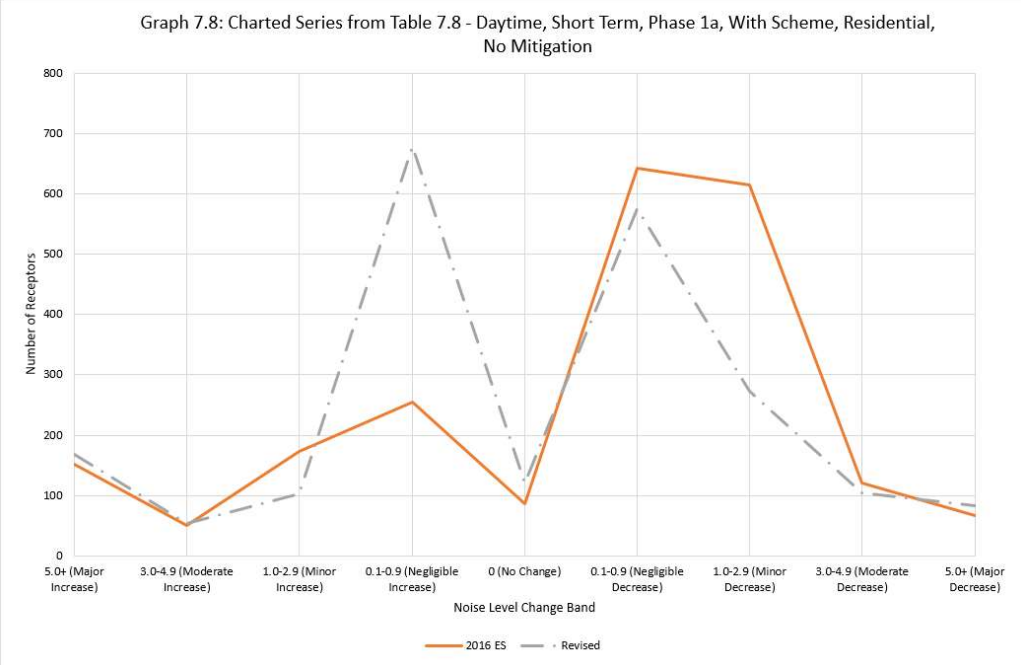
7.5.43. Because Phase 1A is an interim phase of development, consideration has been given to the short-term impacts only (this is because the long-term impacts are those associated with the full Proposed Scheme, as considered in the daytime and night-time assessment). Separate comparisons of the

'2016 ES' and 'Revised' results have been made for both residential and non-residential receptors, for the no mitigation scenario. The results of the comparisons are presented in Table 7-8 and Table 7-9.

**Table 7-8 – Daytime, Short-term, Phase 1A, With scheme, Residential receptors, No mitigation**

| Factor | | ES 2016 [A] | Revised / updated scenario [B] | Difference [B - A = C] |
|---|---|---|---|---|
| Scenarios compared | | DM 2019 | DM 2022 | Revised opening year (+3 years) |
| | | DS 2019 | DS 2022 | |
| Receptors | | Residential | Residential | No change |
| Mitigation included | | No | No | No change |
| Period | | Daytime | Daytime | No change |
| Traffic model | | ES 2016 | 2017 OBC | Updated traffic model |
| **Summary of Changes: Revised Opening Year (+3 Years) and Updated Traffic Model** | | | | |
| **Change in noise level ($L_{A10,18h}$)** | | **Number of receptors** | | |
| Increase | 0.1-0.9 (Negligible) | 255 | 679 | 424 |
| | 1.0-2.9 (Minor) | 173 | 103 | -70 |
| | 3.0-4.9 (moderate) | 50 | 54 | 4 |
| | 5.0+ (Major) | 151 | 168 | 17 |
| No change | 0 (No change) | 87 | 121 | 34 |
| Decrease | 0.1-0.9 (Negligible) | 643 | 575 | -68 |
| | 1.0-2.9 (Minor) | 615 | 272 | -343 |
| | 3.0-4.9 (moderate) | 120 | 105 | -15 |
| | 5.0+ (Major) | 66 | 83 | 17 |

7.5.44. The following graph presents the ES 2016 and revised datasets from Table 7-8 above:




7.5.45. From Table 7-8 and the associated graph, the following conclusions can be drawn:

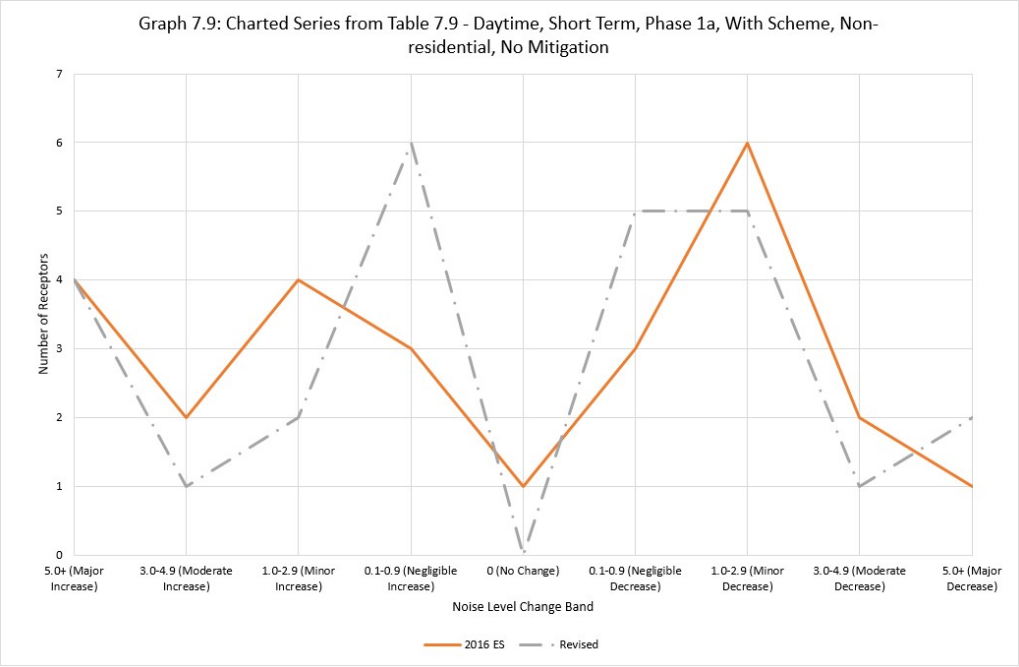
- the pattern of results from the ES 2016 and revised assessment are comparable;
- the most notable differences between the two datasets are present within the Negligible increase to Minor decrease range; and
- very similar results are identified between the two datasets for the Moderate and Major change bands (increases and decreases).

7.5.46. The similarity of results within the Moderate and Major bands (increases and decreases), indicates that the updates to the traffic model and Phase 1A opening year have no significant bearing upon the conclusions drawn in the ES 2016, it is just that the timing of such impacts will now be in line with the revised opening year.

**Table 7-9 – Daytime, Short-term, Phase 1A, With Scheme Non-residential receptors, No mitigation**

| Factor | | ES 2016 [A] | Revised / updated scenario [B] | Difference [B - A = C] |
|---|---|---|---|---|
| Scenarios compared | | DM 2019 | DM 2022 | Revised opening year (+3 years) |
| | | DS 2019 | DS 2022 | |
| Receptors | | Non-residential | Non-residential | No change |
| Mitigation included | | No | No | No change |
| Period | | Daytime | Daytime | No change |
| Traffic model | | ES 2016 | 2017 OBC | Updated traffic model |
| **Summary of Changes: Revised Opening Year (+3 Years) and Updated Traffic Model** | | | | |
| **Change in noise level ($L_{A10,18h}$)** | | **Number of receptors** | | |
| Increase | 0.1-0.9 (Negligible) | 3 | 6 | 3 |
| | 1.0-2.9 (Minor) | 4 | 2 | -2 |
| | 3.0-4.9 (moderate) | 2 | 1 | -1 |
| | 5.0+ (Major) | 4 | 4 | 0 |
| No change | 0 (No change) | 1 | 0 | -1 |
| Decrease | 0.1-0.9 (Negligible) | 3 | 5 | 2 |
| | 1.0-2.9 (Minor) | 6 | 5 | -1 |
| | 3.0-4.9 (moderate) | 2 | 1 | -1 |
| | 5.0+ (Major) | 1 | 2 | 1 |

7.5.47. The following graph presents the ES 2016 and revised datasets from Table 7-9 above:



7.5.48. In comparison to the previous graphs there appears to be more variance in the ES 2016 and revised datasets presented in Graph 6.9. However, the overall number of receptors that this graph represents is small (the highest representation on the Y axis is only six) and close inspection of the results allows the following conclusion to be drawn:

- for the Moderate and Major change bands (increases and decreases), the difference in receptor numbers between the two datasets falls in the range -1 to 1.

7.5.49. The similarity of results within the Moderate and Major bands (increases and decreases), indicates that the updates made to the traffic model and Phase 1A opening year have no significant bearing upon the conclusions drawn in the ES 2016 it is just that the timing of such impacts will now be in line with the revised opening year.

7.5.50. The Daytime (full scheme) and Phase 1A assessments described above have all indicated that the scheme changes have no significant bearing upon the conclusions drawn within the ES 2016. It is therefore reasonable also to conclude that the same will be true for other interim phases of the revised delivery programme (i.e. when considering the revised years of opening for Phase 1B, Phase 2A and Phase 2B).

**Operational Road Traffic Noise – Night-time**

7.5.51. The results of the night-time impact assessment of Phase 3 (the full scheme) are presented within Table 13.16 of the ES 2016. This table presents the results of the following scenario comparisons:

- Table 13.16 (column 3): Long-term change without scheme - DM 2028 versus DM 2041 (no scheme, residential receptors);
- Table 13.16 (column 4): Long-term change with scheme - DM 2028 versus DS 2041 (no mitigation, residential receptors); and
- Table 13.16 (column 5): Long-term change with scheme - DM 2028 versus DS 2041 (with mitigation, residential receptors).

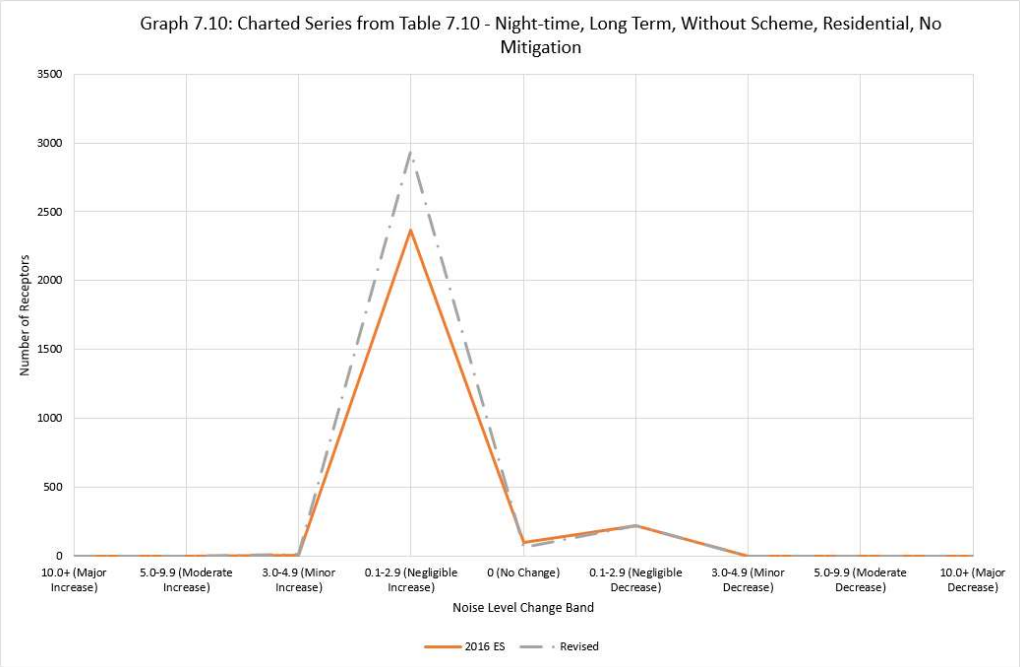
7.5.52. As for the daytime assessments presented above, equivalent results to those presented for the above listed comparisons have been prepared based on the updated scheme traffic data. The '2016 ES' and 'Revised' results, for each scenario comparison, are compared and contrasted in the Table 7-10 to Table 7-12 below.

7.5.53. It should be noted that night-time assessment is undertaken only for those receptors where the resulting noise level is over 55 dB $L_{night}$. It is noted that there are slightly different number of receptors categorised as over this threshold between the ES 2016 and revised assessments. However, the order of the number of receptors is similar allowing a reasonable comparison to be made between the results.

**Table 7-10 – Night-time, Long-term, Without scheme, Residential receptors, No mitigation (ES 2016 Table 13.16 column 3)**

| Factor | | ES 2016 Table 13.16 column 3 [A] | Revised / updated scenario [B] | Difference [B - A = C] |
|---|---|---|---|---|
| Scenarios compared | | DM 2028 | DM 2028 | No change |
| | | DM 2041 | DM 2043 | Revised design year (+2 years) |
| Receptors | | Residential | Residential | No change |
| Mitigation included | | No | No | No change |
| Period | | Night-time | Night-time | No change |
| Traffic model | | ES 2016 | 2017 OBC | Updated traffic model |
| **Summary of Changes: Revised Design Year (+2 Years) and Updated Traffic Model** | | | | |
| **Change in noise level ($L_{A10,18h}$)** | | **Number of receptors** | | |
| Increase | 0.1-2.9 (Negligible) | 2370 | 2940 | 570 |
| | 3.0-4.9 (Minor) | 7 | 12 | 5 |
| | 5.0-9.9 (moderate) | 0 | 3 | 3 |
| | 10.0+ (Major) | 0 | 0 | 0 |
| No change | 0 (No change) | 99 | 67 | -32 |
| Decrease | 0.1-2.9 (Negligible) | 219 | 223 | 4 |
| | 3.0-4.9 (Minor) | 0 | 0 | 0 |
| | 5.0-9.9 (moderate) | 0 | 1 | 1 |
| | 10.0+ (Major) | 0 | 0 | 0 |

7.5.54. The following graph presents the ES 2016 and revised datasets from Table 7-10 above:




7.5.55. From Table 7-10 and the associated graph, the following conclusions can be drawn:

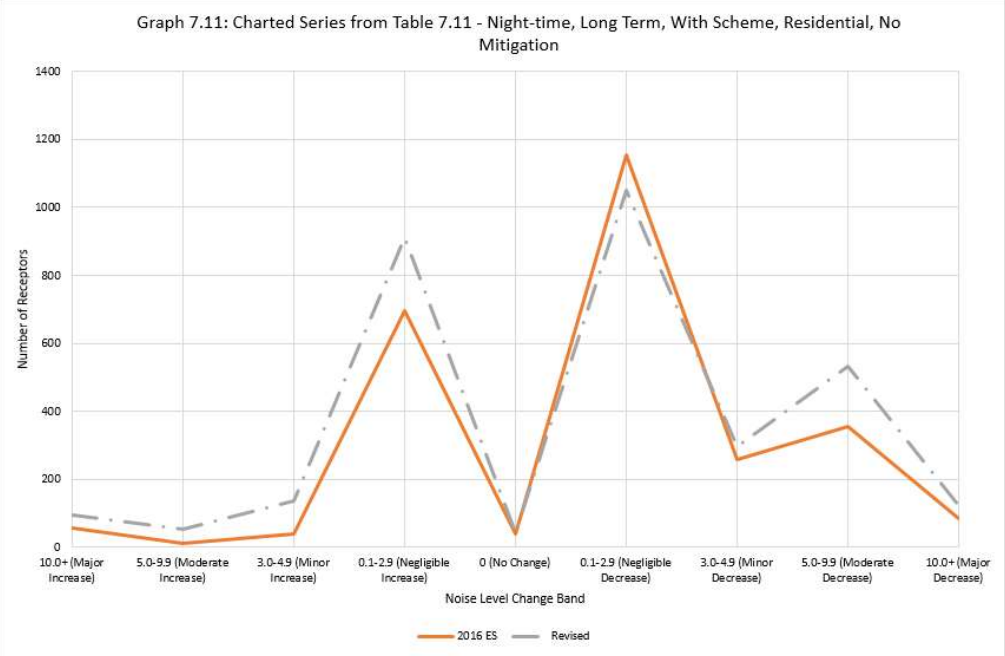
- the pattern of results from the ES 2016 and revised assessment are very similar, with slightly more receptors considered within the revised assessment. The similarity in the results indicates that the OBC 2017 traffic model in conjunction with two additional years of growth (to the new design year) has had little effect on the modelled assessment results for the night-time.

7.5.56. The similarity of these results indicates that the updates to the traffic model and new design year have no significant bearing upon the conclusions drawn in the ES 2016.

**Table 7-11 – Night-time, Long-term, With scheme, Residential receptors, No mitigation (ES 2016 Table 13.16 column 4)**

| Factor | | ES 2016 Table 13.16 column 4 [A] | Revised / updated scenario [B] | Difference [B - A = C] |
|---|---|---|---|---|
| Scenarios compared | | DM 2028 | DM 2028 | No change |
| | | DS 2041 | DS 2043 | Revised design year (+2 years) |
| Receptors | | Residential | Residential | No change |
| Mitigation included | | No | No | No change |
| Period | | Night-time | Night-time | No change |
| Traffic model | | ES 2016 | OBC 2017 | Updated traffic model |
| **Summary of Changes: Revised Design Year (+2 Years) and Updated Traffic Model** | | | | |
| **Change in noise level ($L_{A10,18h}$)** | | **Number of receptors** | | |
| Increase | 0.1-2.9 (Negligible) | 695 | 911 | 216 |
| | 3.0-4.9 (Minor) | 40 | 138 | 98 |
| | 5.0-9.9 (moderate) | 10 | 53 | 43 |
| | 10.0+ (Major) | 56 | 96 | 40 |
| No change | 0 (No change) | 40 | 44 | 4 |
| Decrease | 0.1-2.9 (Negligible) | 1155 | 1051 | -104 |
| | 3.0-4.9 (Minor) | 258 | 298 | 40 |
| | 5.0-9.9 (moderate) | 357 | 532 | 175 |
| | 10.0+ (Major) | 84 | 123 | 39 |

7.5.57. The following graph presents the ES 2016 and revised datasets from Table 7-11 above:




7.5.58. From Table 7-11 and the associated graph, the following conclusions can be drawn:

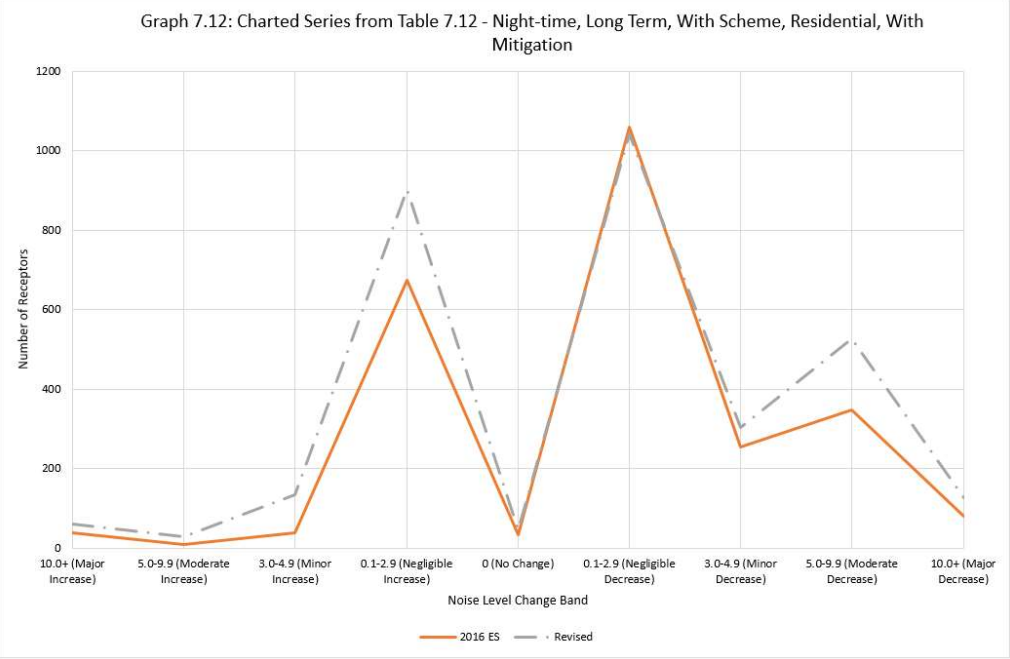
- the pattern of results from the ES 2016 and revised assessment are very similar, with slightly more receptors considered within the revised assessment. The similarity in the results indicates that the OBC 2017 traffic model in conjunction with two additional years of growth (to the new design year) has had little effect on the modelled assessment results for the night-time.

7.5.59. The similarity of these results indicates that the updates to the traffic model and new design year have no significant bearing upon the conclusions drawn in the ES 2016.

**Table 7-12 – Night-time, Long-term, With scheme, Residential receptors, With mitigation (ES 2016 Table 13.16 column 5)**

| Factor | | ES 2016 Table 13.16 column 5 [A] | Revised / updated scenario [B] | Difference [B - A = C] |
|---|---|---|---|---|
| Scenarios compared | | DM 2028 | DM 2028 | No change |
| | | DS 2041 | DS 2043 | Revised design year (+2 years) |
| Receptors | | Residential | Residential | No change |
| Mitigation included | | Yes | Yes | No change |
| Period | | Night-time | Night-time | No change |
| Traffic model | | ES 2016 | OBC 2017 | Updated traffic model |
| **Summary of Changes: Revised Design Year (+2 Years) and Updated Traffic Model** | | | | |
| **Change in noise level ($L_{A10,18h}$)** | | **Number of receptors** | | |
| Increase | 0.1-2.9 (Negligible) | 674 | 902 | 228 |
| | 3.0-4.9 (Minor) | 40 | 135 | 95 |
| | 5.0-9.9 (moderate) | 9 | 30 | 21 |
| | 10.0+ (Major) | 38 | 62 | 24 |
| No change | 0 (No change) | 33 | 45 | 12 |
| Decrease | 0.1-2.9 (Negligible) | 1060 | 1043 | -17 |
| | 3.0-4.9 (Minor) | 254 | 304 | 50 |
| | 5.0-9.9 (moderate) | 349 | 526 | 177 |
| | 10.0+ (Major) | 81 | 127 | 46 |

7.5.60. The following graph presents the ES 2016 and revised datasets from Table 7-12 above:



7.5.61. From Table 7-12 and the associated graph, the following conclusions can be drawn:

- for the with mitigation scenario, the pattern of results from the ES 2016 and revised assessment are very similar, with slightly more receptors considered within the revised assessment. The similarity in the results indicates that the OBC 2017 traffic model in conjunction with the new design year has had little effect on the modelled assessment results for the night-time.

7.5.62. The similarity of results indicates that, when including for mitigation, the updates to the traffic model and new design year have no significant bearing upon the conclusions drawn in the ES 2016.

## 7.6. CONCLUSION

7.6.1. It has been identified that there have been no changes to legislation or policy, nor assessment methodologies since the ES 2016.

7.6.2. Consideration has been given as part of the ESA to any additional noise sensitive receptors and noise sensitive developments benefitting from planning consent since the noise and vibration assessment detailed within the ES 2016 was prepared.

7.6.3. It has been identified that some of the consented developments fall within the construction noise distance buffers, whilst some are in the vicinity of the construction traffic routes. However, there are other existing dwellings within these buffers meaning that the overarching finding that 26 of the 46 assessed 'hot spots' have the potential for significant impacts remains true. Paragraph 13.6.2 of the ES 2016 states that the numbers of receptors within each hot spot "*are small, the highest being 8 in the vicinity of junction 1*". This ESA 2019 has identified that this hot spot also includes a portion of a recently consented residential development.

7.6.4. The assessment of construction vibration presented in the ES 2016 is based on the set back distances that are present between receptors and the construction activities that are identified as being likely to generate the highest orders of groundborne vibration. None of the consented developments are closer to these activities than existing receptors, so there is no change to the conclusions drawn in the ES 2016 on construction vibration.

7.6.5. With regards to the operational phase assessments it has been identified that, geographically, these consented developments are broadly spread along the length of, and at varying distances from, the Proposed Scheme. These consents are generally located immediately adjacent to existing dwellings that are already accounted for within the ES 2016 receptor dataset, or are located at similar distances from the Proposed Scheme as other existing dwellings. The consented developments are not located in groups close to the proposed A5 where significant noise level increases are predicted to arise. The location and spread of these consents is such that they would not have a significant bearing upon the conclusions drawn within the ES 2016.added to the ES 2016 receptor dataset.

7.6.6. The results of the revised operational noise assessment have been compared against those reported within the ES 2016. It has been identified that the change in phasing, the revised opening years and design year and the use of the OBC 2017 traffic model does not have a significant bearing upon the conclusions drawn within the ES 2016.

# 8. INTERACTIONS AND CUMULATIVE EFFECTS

## 8.1. INTRODUCTION

8.1.1. This chapter updates the cumulative effects assessment for the Proposed Scheme, including a consideration of transboundary effects.

8.1.2. The methodology for assessing cumulative effects used in this ESA has followed guidance in the Design Manual for Roads and Bridges (DMRB) Volume 11, Section 2, Part 5, Assessment and Management of Environmental Effects[38]. The methodology has also been informed by comments received on the ES 2016 and by professional judgment.

8.1.3. The term 'cumulative' in respect of impacts or effects is not defined in either the EIA Directive or the EIA Regulations. However, the DMRB defines two types of cumulative impact:

- Type 1: Cumulative impacts from a single project (the combined action of different environmental topic-specific impacts) upon a single resource/receptor; and
- Type 2: Cumulative impacts from different projects in combination with the project being assessed (the combined action of a number of different projects, cumulatively with the project being assessed, on a single resource/receptor. This can include multiple impacts of the same or similar type from a number of different projects upon the same receptor/resource).

8.1.4. Cumulative effects result from multiple actions on receptors and resources. The effects can be additive or interactive (synergistic) in nature and can result from incremental changes caused by other past, present, reasonably foreseeable actions together with those of the Proposed Scheme.

### SIGNIFICANCE OF EFFECTS

8.1.5. The significance of cumulative effects has been considered using DMRB guidance and is summarised in Table 8-1 below.

[38] DMRB Volume 11, Section 2, Part 5 (HA 205/08). Available online at: http://www.standardsforhighways.co.uk/ha/standards/dmrb/vol11/section2/ha20508.pdf. [Last Accessed 12/03/2019].

**Table 8-1. Determining Significance of Cumulative Effects**

| Significance | Effect |
|---|---|
| Severe | Effects that the decision-maker must take into account as the receptor / resource is irretrievably compromised. |
| Major | Effects that may become key decision-making issues. |
| Moderate | Effects that are unlikely to become issues on whether the project design should be selected, but where future work may be needed to improve on current performance. |
| Minor | Effects that are locally significant. |
| Not Significant | Effects that are beyond the current forecasting ability or are within the ability of the resource to absorb such change. |

8.1.6. The two types of cumulative effect are discussed separately below.

## 8.2. CUMULATIVE IMPACTS FROM A SINGLE PROJECT

### METHODOLOGY

8.2.1. An assessment of the cumulative impacts of the Proposed Scheme (for example, changes in air quality, noise and vibration, land take and visual impact) on individual receptors has been undertaken. This has ensured that a comprehensive assessment drawing together all the environmental effects of the Proposed Scheme has taken place.

8.2.2. The study area for the cumulative effects is defined by the study areas of each of the individual environmental topic assessments, which are described in the relevant topic chapters of the ES 2016. These range from the immediate scheme footprint for direct land-take impacts, up to several kilometres for landscape and visual effects.

8.2.3. The receptors/resources considered in this assessment are grouped into the following categories:

- Human receptors/resources (e.g. residential properties, effects on all travellers, communities and private assets);
- Ecological receptors/resources (e.g. protected species, designated sites);
- Built heritage features (e.g. listed buildings, scheduled monuments); and
- Water resources (e.g. surface water, ground water, flooding).

8.2.4. These may include Transboundary receptors/resources.

8.2.5. Within these broad groups, individual receptors or groups of receptors/resources that are significantly adversely affected by more than one impact from the Proposed Scheme either during construction or operation have been identified from the conclusions of the ES 2016 and this ESA. The potential effects acting upon these receptors are changes in noise and vibration, air quality, visual intrusion and/or water quality. In addition, a precautionary approach has been taken assuming direct land-take for receptors within the vesting boundary of the scheme.

8.2.6. A review of the potential adverse effects has identified the range of effects likely to impact upon specific groups of receptors/resources, as shown in Table 8-2 below.

**Table 8-2 - Identification of Potential Cumulative Impacts from the Proposed Scheme**

| Receptors | Potential effects of the Proposed Scheme during construction and/or operation | | | | | Approach to assessment and reporting of cumulative effects |
|---|---|---|---|---|---|---|
| | Noise / Vibration | Air Quality | Visual Intrusion | Water Quality | Land take | |
| Human | Y | Y | Y | N | Y | An assessment of cumulative effects on human receptors was not considered in the ES 2016 and as such is included within this chapter. |
| Ecological | Y | Y | N | Y | Y | All of these cumulative effects are reported within the ES 2016, Chapter 11 Ecology and Nature Conservation, Section 11.6.<br><br>Therefore, they are scoped out of this cumulative effects assessment and are not considered further. |
| Built Heritage Features | Y | Y | Y | N | Y | All of these cumulative effects are reported within the ES 2016, Chapter 9 Cultural Heritage.<br><br>Therefore, they are scoped out this cumulative effects assessment and are not considered further. |
| Water resources | Y | Y | N | Y | Y | All of these cumulative effects are reported within the ES 2016, Chapter 16 Road Drainage and the Water Environment.<br><br>Therefore, they are scoped out this cumulative effects assessment and are not considered further. |

8.2.7. The cumulative effects on ecological receptors, built heritage and water resources are addressed within their respective technical topic chapters within the ES 2016 and, therefore, are not covered further in this chapter.

8.2.8. Those human receptors which experience more than one impact have been identified in this chapter. The cumulative effects on these receptors consist of air quality, noise and vibration, land take and visual impacts. The assessment of these effects considers impacts during the construction and the operational phases, reflecting the worst-case scenario for each topic. Criteria are taken from the residual assessments in the relevant topic chapters (ES 2016), taking into consideration the

mitigation measures that have been identified in those chapters. The results of the assessment for the construction and operational effects are discussed and summarised in Appendix D Table D1.

### ASSESSMENT OF EFFECTS

8.2.9. Appendix D Table D1 provides detail on the cumulative construction and operational effects on human receptors/resources. 39 groups of receptors were identified and assessed.

**Summary**

8.2.10. As set out in Appendix D Table D1, this cumulative effects assessment has concluded that 23 groups of human receptors have the potential to experience minor and 7 groups of human receptors moderate cumulative construction and / or operational effects from two or more sources (air quality, noise and vibration, land take and visual effects).

8.2.11. These receptors that are located within close proximity of the Proposed Scheme may be subject to temporary and / or long term increases in traffic noise and vibration impacts, temporary and / or long-term changes to visual impacts and permanent land take. There are potential transboundary effects in the area around Strabane.

## 8.3. CUMULATIVE IMPACTS FROM DIFFERENT PROJECTS

### METHODOLOGY

8.3.1. Major developments in the area, including those in the Republic of Ireland, are to be included in the cumulative effects assessment if they fall within one of the following categories:

- Under construction;
- Permitted application(s) not yet implemented;
- Submitted application(s) not yet determined;
- All refusals subject to appeal procedures not yet determined; and
- Projects identified in the relevant local development plan (and emerging development plans - with appropriate weight being given as they move closer to adoption) recognising that much information on any relevant proposals will be limited.

8.3.2. The list of proposed developments to be considered in the assessment of cumulative effects was updated in March 2019 through searches of local authority planning portals for planning applications and a review of allocated and proposed sites in local plans.

8.3.3. Rejected planning applications that are not subject to appeal have not been considered as their implementation is not considered to be reasonably foreseeable.

8.3.4. Appendix D Table D2 gives the list of all developments considered, and the reasons why they have been scoped in or out of this assessment.

8.3.5. The list of developments scoped in is listed below:

- Lifford Strabane Riverine Project;
- Three Rivers Development;
- N14/15 to A5 Link Road;
- North West Greenway Network (Route 3);

- Quarrying in the Townland of Urbalreagh;
- Lands 220NW of No. 30 Baronscourt Road, Newtownstewart (extension of time period of quarrying activities);
- Gold Mine at Southern Edge of Sperrin Mountains;
- Lisanelly College, Omagh;
- Masterplan for Land Adjacent to Junction 7, Urney Road, Carricklee;
- Strathroy Link Road;
- Poultry Shed, 116 Caledon Road, Aughnacloy;
- Henhouse, Carnteel Road, Aughnacloy;
- Poultry Sheds, 43 Errigal Road, Ballygawley;
- Poultry Shed, Crevenagh Road, Omagh;
- Housing Development, Beltany Grove, Omagh;
- Anaerobic Digestion Plant, Doogary Road, Omagh;
- Housing Development, Tamlaght Road, Omagh;
- Housing Development, Bradley's Way, Strabane;
- Land at Former IAWS, Woodside Road, Newbuildings;
- Former Strabane Hospital, Derry Road, Strabane;
- Sites 10 – 19 Victoria Meadows, Magheramason;
- Housing Development, Tullyvar Road, Aughnacloy;
- Residential Development, lands to the east of 1 - 3 Lismore Park, Sion Mills;
- Residential Development, Victoria Meadows, Magheramason;
- Wind Turbine, Strahans Road, Strabane;
- Freestand Restaurant, Junction of Railway Street and Park Road, Strabane;
- Synthetic Football Pitch, lands south east of Mountjoy United FC, Lisnagirr Road, Omagh; and
- Residential Development, Newtownsaville Road, Omagh.

8.3.6. The locations of the developments are shown on Figure 8.1 (Sheet 1 – 3) (Appendix E).

8.3.7. It is noted that Monaghan County Council and Transport Infrastructure Ireland have recommenced assessing proposals for the N2 upgrade between Ardee in the Republic of Ireland to the border at Aughnacloy. However, as of March 2019 no detailed information is available in order to determine any cumulative effect with the Proposed Scheme.

8.3.8. Each of the developments identified has been screened in relation to the potential effects predicted for each environmental topic, taking into consideration the location, timing, nature and scale of the development. Consideration has then been given to whether these developments would lead to changes in the existing baseline situation and result in cumulative effects during the construction and/or operation of the Scheme, including transboundary impacts. The results presented in Appendix D Table D3 discuss the main likely cumulative effects rather than every potential environmental interaction.

8.3.9. The traffic model for the Proposed Scheme has taken into account other transportation schemes as well as future predicted traffic growth as a result of new, major developments either as specific developments or as being included in the general growth parameters within urban boundaries. The air quality and noise assessments, which are based on future traffic projections, therefore incorporate the cumulative effects of other developments as an inherent part of their assessment.

8.3.10. This assessment has been based on the available information for other developments that are planned/proposed, for example in relation to construction and operation timescales, traffic generation and the nature and scale of the development and associated impacts. Appendix D Table D3 presents the information available at the time of writing (February 2019). For some projects this information (especially quantitative information) is limited or uncertain, due to the stage of the development process that the project has reached. It is, therefore, appropriate to undertake qualitative assessments for these types of cumulative effects, based on professional judgment and the specialists' experience of other similar schemes. Furthermore, consultation with local authorities to determine the list of developments for the cumulative effects assessment has not been undertaken, mainly due to time constraints on the delivery of this stage of works. However, the project team has taken a precautionary approach and considered a larger database of developments in the cumulative effects assessment and this professional judgement and local knowledge have been considered sufficient in the timeframe.

### STUDY AREA

8.3.11. The assessment of cumulative effects includes all relevant developments which are deemed to have a potential cumulative impact on the Proposed Scheme. The majority of the study areas for each of the individual environmental topic assessments is 1km or less, in so far as they relate to potential cumulative effects. This is, therefore, considered to be a suitably wide area, in accordance with DMRB requirements and based on professional judgement, to ensure that all the potentially significant cumulative effects are identified and assessed. However, some developments have also been considered which are further than 1km from the Scheme, where there are potential cumulative impacts.

### ASSESSMENT OF EFFECTS

8.3.12. The results of the cumulative effects assessment are presented in Appendix D Table D3.

## 8.4. CONCLUSION

### CUMULATIVE IMPACTS FROM A SINGLE PROJECT (THE PROPOSED SCHEME)

8.4.1. Of the 39 groups of human receptors, 9 would experience effects deemed not significant, 23 groups would experience minor and 7 groups moderate cumulative construction and / or operational effects from two or more sources (air quality, noise and vibration, land take and visual effects).

8.4.2. The assessment of cumulative impacts from the A5 WTC identified a number of human receptors which may experience cumulative construction and / or operational effects from two or more sources (air quality, noise and vibration, land take and visual effects). There are potential transboundary effects in the area around Strabane.

### CUMULATIVE IMPACTS FROM DIFFERENT PROJECTS

8.4.3. The assessment of cumulative impacts from different projects identified a number of developments/projects which could have cumulative effects on the environment in addition to those which have been identified for the Scheme in its own right. It has been concluded that the

construction and operation of the Proposed Scheme in combination with any of these other developments will not lead to overall significant cumulative effects, including transboundary effects.

# 9. SUMMARY AND CONCLUSION

9.1.1. Since the publication of the ES 2016 there have been some developments in the environmental baseline and the Proposed Scheme that may influence the previous conclusions and as such this Environmental Statement Addendum and accompanying Non-Technical Summary (NTS) (ESA 2019) has been prepared.

9.1.2. The ESA reflects that time has passed and captures change that has occurred in both the existing environment and also the project delivery process. The focus, as listed below, has been to identify any aspect of the process which has the potential to result in change to the previously assessed impacts of the A5 Western Transport Corridor (Proposed Scheme), as reported in the published Environmental Statement 2016 (ES 2016):

- Changes to the phased construction timetable;
- Changes to baseline conditions (including the impacts as a result of quarrying in the townland of Urbalreagh);
- Changes in legislation and guidelines used in the assessment process; and
- Updating the cumulative effects assessment.

9.1.3. A scoping exercise was completed to identify any potentially significant impacts to be considered. It concluded that the following assessments in the ES 2016 needed to be revisited:

- Air quality;
- Cultural heritage;
- Visual effects;
- Ecology and nature conservation;
- Noise and vibration; and
- In combination and cumulative effects.

9.1.4. The remaining assessments and proposed mitigations of the ES 2016 stand.

## 9.2. CONCLUSION

### AIR QUALITY

9.2.1. Overall, the revised air quality chapter has identified that the conclusions of the ES 2016 and the conclusions relating to ecological air quality impacts at Tully Bog SAC, reported in the HRA[15] remain valid. The Proposed Scheme is expected to have no significant environmental effect on local and regional air quality.

### CULTURAL HERITAGE

9.2.2. The assessment has concluded that there are no significant effects to any of the additional assets listed. However, additional mitigation is required in the form of targeted metal detector surveys of the areas of the battle sites that are due to be impacted upon by the scheme, in agreement with the Department for Communities. These surveys would take place prior to the previously proposed archaeological evaluation/excavation set out in the ES 2016.

9.2.3. Overall the assessment does not change the conclusions of the Environmental Statement 2016.

### VISUAL

9.2.4. The majority of new residential receptors and users of new recreational routes and facilities would not be subject to significant visual effect in the future assessment year.

9.2.5. Visual effects predicted to be in the higher order of moderate adverse and large adverse effects would apply to occupiers of a low number of individual residential dwellings, representing approximately 3% of all approved development since the ES 2016 publication.

9.2.6. The number of sensitive receptors which are subject to higher orders of visual effect would accordingly increase from those described in the ES 2016; however the comparative level of increase is considered marginal and this would not influence the conclusion of the ES 2016 visual assessment.

### ECOLOGY AND NATURE CONSERVATION

9.2.7. The assessment does not change the overall conclusions of the ES 2016, nor require additional mitigation measures to be provided.

### NOISE AND VIBRATION

9.2.8. The results of the revised assessment have been compared against those reported within the ES 2016. It has been identified that the change in phasing, the revised opening years and design year and the use of the OBC 2017 traffic model does not have a significant bearing upon the conclusions drawn within the ES 2016.

### INTERACTIONS AND CUMULATIVE EFFECTS

9.2.9. The assessment of cumulative impacts from a single project, the Proposed Scheme, identified a number of groups of human receptors which may experience cumulative construction and / or operational effects across two or more environmental aspects (air quality, noise and vibration, land take and visual effects). There are potential transboundary effects in the area around Strabane.

9.2.10. The assessment of cumulative impacts from different projects identified a number of developments/projects which could have cumulative effects on the same resource / receptor, in addition to those which have been identified for the Proposed Scheme in its own right. It is concluded that the construction and operation of the Proposed Scheme in combination with any of these other developments will not lead to overall significant cumulative effects, including transboundary effects.

# Appendix A

## SCOPING AND DATA REVIEW

This appendix includes the results of the baseline data review for the following scoped out environmental topics. It is divided into four topic areas as follows:

- Geology and Soils
- Effects on All Travellers
- Community and Private Assets
- Road Drainage and Water Environment

Each of the above topic text includes the following sections:

- Introduction
- Legislation and Policy
- Baseline Conditions
- Assessment Of Effects
- Conclusion

## GEOLOGY AND SOILS

INTRODUCTION

A review of the baseline environment and the guidance and legislation informing the assessment process has been undertaken since the ES 2016 to inform this ESA 2019. Any changes for Geology and Soils are outlined below.

LEGISLATION AND POLICY

There have been no revisions to the legislation and policy for the Geology and Soils chapter with the exception of the following:

- Planning Policy Statement 2: Planning and Nature Conservation has been superseded by Planning Policy Statement 2: Natural Heritage.

This change in policy document does not have any impact on the assessment or outcome of the ES as no significant changes have been made within the updated policy document with regard to Geology and Soils receptors.

The effect on Geology and Soil receptors was assessed using DMRB Volume 11, Section 3, Part 11 Geology and Soils. There have been no updates to this guidance since the ES 2016.

BASELINE CONDITIONS

- Designated Sites – There have been no changes to designated geological sites since the ES 2016.
- Non-Designated Geologically / Geomorphologically Important Sites – There have been no changes to non-designated geologically / geomorphologically important sites since the ES 2016.
- Solid and Drift Geology – There have been no changes to the solid and drift geology since the ES 2016.
- Potentially Contaminated / Brownfield Sites – No further potentially contaminated / brownfield sites have been identified since the ES 2016 but no additional walkover surveys have been conducted to confirm this. There is the possibility that additional areas of fly-tipping are present.

There have been updates to the relevant screening values for both human health risk and risk to aquatic environments since 2016. A review of the original contaminant exceedances has been undertaken including a comparison with the updated screening values. It is concluded that these updated screening values are not considered to be significant in the sense that there is no change to the conclusions of the ES 2016 with regard to overall risk to human health and the aquatic environment.

ASSESSMENT OF EFFECTS

It is concluded that there has been no legislation or policy changes, or changes to the baseline conditions that effects the content and conclusion of the ES 2016 in terms of Geology and Soils receptors.

CONCLUSION

Following this review, it is concluded that the content and outcome of the ES 2016 are still relevant in terms of Geology and Soils receptors and that no amendments are required.

## EFFECTS ON ALL TRAVELLERS

INTRODUCTION

A review of the baseline environment and the guidance and legislation informing the assessment process has been undertaken since the ES 2016 and this ESA 2019. Any changes for Effects on all Travellers are outlined below.

LEGISLATION AND POLICY

Statutory provisions relating to public rights of way and access areas are detailed in the Access to the Countryside (Northern Ireland) Order 1983. This was the only legislation mentioned in the ES 2016 and following review this is currently still the most up to date legislation.

The original ES 2016 methodology was based on guidance provided in the DMRB, Volume 11, Section 3, Part 8 (Pedestrians, Cyclists, Equestrians and Community Effects). Since the ES 2016 was published, Interim Advice Note (IAN) 125/15 Environmental Assessment Update, 2015 has been implemented, superseding Interim Advice Note 125/09. IAN 125/15 recommends that Part 6 (Land Use), Part 8 (Pedestrians, Cyclists, Equestrians and Community Effects) and Part 9 (Vehicles) are combined into an assessment on 'People and Communities'. However, this new advice would not materially change the findings of the Effects on all Travellers chapter, and as such the assessment remains valid.

BASELINE CONDITIONS

- Scenic Driving Routes - There have been no changes to scenic driving routes since the ES 2016.
- National Cycle/Walking Routes - There are two new cycle route spurs from NCN 92 identified since the ES 2016:
    - An approximate 2.8km section of cycleway along the A5 between the Mourne River and Melmount Road, identified as a local route and not part of the NCN. This section will not be severed as a result of the Proposed Scheme.
    - An approximate 2.8km length of cycle way between the Strule River and the Ulster American Folk Park. This is also identified as a local route and not part of the NCN. This section will not be severed as a result of the Proposed Scheme.
- Public Rights of Way (PRoW) - During the ES 2016, PRoWs were identified through consultation and liaison with local authorities. It has not been possible to engage in consultation at this stage due to time constraints on the delivery of the ESA. It has been assumed, therefore, that no changes to PRoW have occurred since the ES 2016.
- Local Roads - There have been no significant changes to the local road network since the ES 2016.

ASSESSMENT OF EFFECTS

The Relief from Severance and Driver Stress assessments undertaken as part of the ES 2016 used data from the A5WTC Transport Model, 2015/WSP. A new iteration of the transport model has been produced as well as updated traffic flow datasets as part of the A5WTC Outline Business Case (2017 OBC) economic appraisal. As a result, it has been necessary to carry out a comparison with the new model and datasets to identify any changes and determine whether the conclusions reported in the ES 2016 are still valid.

Table A1 shows the Relief from Severance on specific sections of the existing A5 based on changes in traffic flows in the Opening Year 2028 for the Do-Minimum (Proposed Scheme not being implemented) and Do-Something (Proposed Scheme being implemented) scenarios. Impact ratings are in accordance with the guidance provided in DMRB, Volume 11, Section 3, Part 8, Chapter 7. The comparison exercise has identified that the current impact ratings are greater than the ES 2016 impact ratings at three locations; New Buildings, South Omagh and the A5/B46 Junction to A5/A4 Junction, and lower than the ES 2016 impact rating at Strabane to Sion Mills (Table A1-2).

Table A2 shows the Driver Stress of users on the existing A5 based on the Do-Minimum and Do-Something scenarios in the Future Design Year 2043. Stress levels are in accordance with the guidance provided in DMRB, Volume 11, Section 3, Part 9. The comparison exercise has identified that there are no changes between the current stress levels and those stated in the ES 2016 (Table A2).

Overall, the differences identified in the Relief from Severance and Driver Stress assessments are sufficiently minimal for the conclusions reported in the ES 2016 to remain valid.

CONCLUSION

Following this review, it is concluded that there has been no legislation or policy changes, changes to the baseline conditions nor changes to the Relief from Severance and Driver Stress assessments that effects the content and conclusion of the ES 2016. Therefore, no amendments are required.

**Table A1 - Relief from severance on the existing A5**

| Location | Build up / Rural | AADT 2028 (DM) | AADT 2028 (DS) | % Reduction in Traffic | Impact Rating | Comparison with ES 2016 Impact Rating |
|---|---|---|---|---|---|---|
| New Buildings | Built Up | 16524 | 2982 | 82% | Substantial | Moderate |
| New Buildings to Ballymagorry | Rural | 15514 | 2542 | 84% | Moderate | No Change |
| Ballymagorry to Strabane | Rural | 16303 | 6281 | 61% | Slight | No Change |
| Strabane | Built Up | 22036 | 12649 | 43% | Moderate | No Change |
| Strabane to Sion Mills | Built Up | 19932 | 8424 | 58% | Moderate | Substantial |
| Sion Mills to Victoria Bridge | Built Up | 12968 | 3902 | 70% | Substantial | No Change |
| Victoria Bridge to Newtownstewart | Rural | 12251 | 2777 | 77% | Moderate | No Change |
| Newtownstewart to Omagh | Rural | 13727 | 5069 | 63% | Slight | No Change |
| North Omagh | Built Up | 23123 | 17277 | 25% | Slight | No Change |
| South Omagh | Built Up | 23739 | 15591 | 34% | Moderate | Slight |

| Location | Build up / Rural | AADT 2028 (DM) | AADT 2028 (DS) | % Reduction in Traffic | Impact Rating | Comparison with ES 2016 Impact Rating |
|---|---|---|---|---|---|---|
| Omagh to Junction of the B46 | Rural | 15600 | 4171 | 73% | Slight | No Change |
| A5/B46 Junction to A5/A4 Junction | Rural | 14369 | 2245 | 84% | Moderate | Slight |
| A5/A4 Junction to Lissenderry | Rural | 9033 | 4349 | 52% | Slight | No Change |
| Lissenderry to Aughnacloy | Built Up | 5878 | 4065 | 31% | Moderate | No Change |

**Table A2 - Driver Stress**

| Road Section | Location | Driver Stress Do Minimum 2043 (Existing A5) | | | | Driver Stress Do Something 2043 (Proposed Scheme) | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Road Section** | **Location** | **Average Peak Hourly flow units*** | **Speed km/hr** | **Stress level** | **Comparison with ES 2016 Stress Level** | **Average Peak Hourly flow units*** | **Speed km/hr** | **Stress level** | **Comparison with ES 2016 Stress Level** |
| **J1 - J2** | New Buildings | 723 | 43 | High | No Change | 797 | 62 | Moderate | No Change |
| **J2 - J3** | New Buildings to Ballymagorry | 679 | 74 | Moderate | No Change | 780 | 104 | Low | No Change |
| **J3 - J4** | Ballymagorry to Strabane | 642 | 62 | Moderate | No Change | 753 | 104 | Low | No Change |
| **J4 - J8** | Strabane/Sion Mills | 835 | 62 | High | No Change | 960 | 98 | Low | No Change |
| **J8 - J9** | Sion Mills to Victoria Bridge | 568 | 68 | Moderate | No Change | 973 | 104 | Low | No Change |
| **J9 - J10** | Victoria Bridge to Newtownstewart | 558 | 79 | Low | No Change | 812 | 104 | Low | No Change |
| **J10 - J11** | Newtownstewart to Omagh | 635 | 77 | Moderate | No Change | 752 | 104 | Low | No Change |
| **J11 - J12** | North Omagh | 989 | 54 | High | No Change | 622 | 104 | Low | No Change |
| **J12 - J13** | South Omagh | 1051 | 56 | High | No Change | 703 | 104 | Low | No Change |

| Road Section | Location | Driver Stress Do Minimum 2043 (Existing A5) | | | | Driver Stress Do Something 2043 (Proposed Scheme) | | | |
|---|---|---|---|---|---|---|---|---|---|
| **J13 - J14** | Omagh to Junction of the B46 | 729 | 75 | Moderate | No Change | 843 | 104 | Low | No Change |
| **J14 - J15** | A5/B46 Junction to A5/A4 Junction | 709 | 75 | Moderate | No Change | 775 | 104 | Low | No Change |
| **J15 - J16** | A5/A4 Junction to Lissenderry | 427 | 81 | Low | No Change | 292 | 101 | Low | No Change |
| **J16 - J17** | Lissenderry to Aughnacloy | 337 | 62 | Moderate | No Change | 209 | 101 | Low | No Change |

## COMMUNITY AND PRIVATE ASSETS

INTRODUCTION

A review of the baseline environment and the guidance and legislation informing the assessment process has been undertaken since the ES 2016 and this ESA 2019. Any changes for Community and Private Assets are outlined below.

LEGISLATION AND POLICY

The original ES 2016 methodology was based on guidance provided in the DMRB, Volume 11, Section 3, Part 6 (Land Use), incorporating Amendment No.1 dated August 2001. Since the ES 2016 was published, Interim Advice Note (IAN) 125/15 Environmental Assessment Update, 2015 has been implemented, superseding Interim Advice Note 125/09. IAN 125/15 recommends that Part 6 (Land Use), Part 8 (Pedestrians, Cyclists, Equestrians and Community Effects) and Part 9 (Vehicles) are combined into an assessment on 'People and Communities'. However, this new advice would not materially change the findings of the Community and Private Assets chapter, and as such the assessment remains valid.

BASELINE CONDITIONS

The assessment of baseline conditions for Community and Private Assets during the ES 2016 was largely undertaken through consultation with landowners and farmers. It has been agreed with the Department that a land folio update will be completed prior to construction, should the scheme proceed. This will ensure all current interests in the land to be vested is captured so the appropriate notices on them can be served. Full and up to date land ownership data is not currently available. It is not anticipated that there have been any significant changes in land use or ownership since the ES 2016 and it has been assumed that the baseline conditions have not changed and are as per the ES 2016. Full land ownership checks will be completed prior to scheme construction, should it be approved.

With regards to new residential, commercial and industrial development in proximity to the Proposed Scheme, these have been assessed as part of the 'In Combination and Cumulative Effects' 2019 assessment. The assessment identifies there has been no new residential, commercial or industrial development since the ES 2016 within proximity to the Proposed Scheme which would result in significant impacts on Community and Private Assets.

CONCLUSION

Following this review, it is concluded that there has been no legislation or policy changes nor changes to the baseline conditions that effects the content and conclusion of the ES 2016. Therefore, no amendments are required.

## ROAD DRAINAGE AND WATER ENVIRONMENT

INTRODUCTION

A review of the baseline environment and the any notable changes to guidance and legislation since the publication of the ES 2016 has been undertaken to inform this ESA 2019. Any changes for Road Drainage and the Water Environment are outlined below.

LEGISLATION AND POLICY

There have been a number of amendments to legislation, detailed below:

- Water Environment (Floods Directive) (Amendment) Regulations (Northern Ireland) 2018, these amend the 2009 regulations to alter the competent authority and consultee list.
- Drainage (Environmental Impact Assessment) Regulations (Northern Ireland) 2017, these implement revised EIA regulations for drainage schemes.
- The Water Environment (Water Framework Directive) Regulations (Northern Ireland) 2017, which replace the 2003 regulations. The NIEA WFD Assessment Guidance for EIA Developments (2012) used for ES 2016 is still current.
- Water Resources (Environmental Impact Assessment) Regulations (Northern Ireland) 2017, which replace the EIA 2005 regulations and include agricultural projects. The NIEA EIA Scoping Guidance for Developments likely to impact on the Water Environment (2012) and the equivalent NIEA Guidance for Road Schemes (2012) used for ES 2016 are still current.
- Private Water Supplies Regulations (Northern Ireland) 2017, which replace the 2009 regulations.
- Water Framework Directive (Classification, Priority Substances and Shellfish Waters) Regulations (Northern Ireland) 2015, these consolidate current legislation, revised standards and additional substances.
- Groundwater Daughter Directive (2006/118/EC), these replace the original Groundwater Directive (80/66/EEC), repealed in 2013.

The most significant change in legislation/guidance associated with Road Drainage and the Water Environment relates to the change to climate change predictions, with UKCP18 replacing UKCP09 at the end of November 2018. In terms of identifying risk, the projections have increased the allowance for climate change associated with rainfall and sea levels. There is a requirement for the updating of Local Development Plans (LDPs) to take into consideration the most recent guidance that is available in relation to climate change. The two relevant documents are either UKCP18 or the new Technical *Flood Risk Guidance in relation to Allowance for Climate Change in Northern Ireland* published by DfI Water & Drainage Policy Division. The LDPs are still in draft form and as such until they are adopted the previous guidance applies. The *Flood Risk Guidance in relation to Allowance for Climate Change in Northern Ireland* guidelines include Transitional Arrangements and as the A5WTC is already in progress and adopting the new guidelines would incur delays to completion then the scheme is not required to be updated in accordance with these guidelines.

The Effect on the Road Drainage and Water Environment was assessed using DMRB Volume 11, Section 3, Part 10 HD 45/09 Road Drainage and the Water Environment. There have been no updates to this guidance since the ES 2016.

BASELINE CONDITIONS

**Water Framework Directive** – NIEA have revised boundaries of some Water Framework Directive (WFD) surface water catchment areas since ES 2016. The former 'Foyle and Faughan Estuaries'

catchment from ES 2016 has been split into two smaller areas, of which the 'Upper Foyle' is adjacent to the Proposed Scheme. The NIEA has also combined two catchments which were reported in ES 2016 as 'River Strule' and 'River Strule (Heavily Modified)' to form the single 'Strule River' catchment. The Upper Foyle and Strule River overall status in 2015 were both Moderate, which matches the overall status of the predecessor catchments reported in ES 2016.

A number of alterations have been made to WFD surface water catchments identification titles, typically to include named channels or define boundary locations.

Since ES 2016, surface water and groundwater body overall status has been re-evaluated by NIEA, with the majority of bodies unchanged. There were upgrades in overall status for seven surface waters, with downgraded overall status for two groundwater bodies, as below:

- Surface Water
  - Finn River – Poor to Moderate
  - Camowen River (Omagh) – Moderate Ecological Potential to Good
  - Eskragh Water (Eskragh) – Poor to Moderate
  - Ballygawley Water – Poor to Good
  - River Blackwater Tributary (Ballygreenan) – Poor to Moderate
  - River Blackwater Tributary (Aughnacloy) – Poor to Moderate
  - River Blackwater (Annaghroe) – Moderate to Good
- Groundwater
  - Omagh – Good to Poor
  - Aughnacloy – Good to Poor

**Water Quality Monitoring and Private Well Monitoring** - Additional project baseline data has been collected (and is scheduled to continue to be collated) in relation to the monitoring of surface water quality and private well supplies since 2016.

The NIEA has an ongoing schedule for the collection of long-term data relating to surface water quality and groundwater monitoring, with this data available from NIEA following processing.

Landholders have installed/decommissioned wells, or have plans to undertake such works before the construction of the Proposed Scheme. Therefore, with reference to ES 2016 there have been changes in overall well numbers and individual well details.

ASSESSMENT OF EFFECTS

**Water Framework Directive** - The overall status of the various catchments have generally remained static or improved since ES 2016. The assessment process took into account a combination of WFD status and other catchment characteristics to determine importance of surface water and groundwater receptors, with baseline condition updates to WFD overall status not judged to alter previous assessment outcomes.

Additionally, the previously prepared WFD Assessment (Appendix 16D of ES 2016) identified that the Proposed Scheme would not lead to any downgrade to status or prevention of achieving target status (Good) for any surface catchments. The NIEA Guidance on WFD Assessment is unchanged since ES 2016. At the pre-construction stage, there remains a requirement to review fluvial geomorphology conditions, although conditions are judged unlikely to alter.

**Water Quality Calculations** - With updates to the traffic models, traffic volumes and heavy good vehicle (HGV%) proportions will differ from those previously included within water quality calculations, as prescribed in DMRB HD 45/09. These data sources apply to accidental spillage and routine runoff calculations to establish pass/fail outcomes for drainage networks.

For accidental spillage calculations, there is a requirement to ensure that return periods likely to cause notable harm to the environment exceed 1:100 years for most drainage networks (1:200 years for networks with sensitive ecological features). For networks that are within these return periods, the reduction in risk from the installation of proposed treatment is then incorporated, to determine residual return period, post-treatment. The poorest performing individual drainage network reported in ES 2016 was S3-OF-13 (located south-west of Ballygawley, discharging into headwaters of the Roughan Burn in the River Blackwater catchment), recording a return period of 1:1110 years; substantially above the 1:200 year threshold for failure. Further contingency is provided when taking account of water quality treatment planned on all drainage networks, which would reduce the risk and increase the associated return period. Therefore, accidental spillage outcomes reported in ES 2016 are judged unlikely to alter taking account of revised traffic model data.

In relation to routine runoff calculations, all drainage networks had pass outcomes in ES 2016, achieved when assessed against the more conservative dissolved copper and zinc values, rather than the smaller bioavailable portion. The Proposed Scheme design has treatment planned for all networks, with some networks requiring additional stages of treatment in order to achieve pass, typically those discharging to smaller receiving watercourses. With the potential to define the portion of bioavailable material, if necessary, there is contingency within routine runoff pass results on all drainage networks for increased traffic flows, with no alteration to the outcome reported in ES 2016.

**Water Quality Monitoring and Private Well Monitoring –** The ongoing updates on surface water quality and private wells provides useful ES 2016 post-submission information to aid understanding of seasonal baseline conditions. The objective of these activities is to inform the adaptive monitoring programme, rather than the determination of impact significance.

There was a commitment in ES 2016 to ensure all applicable private wells were identified, monitored and individually managed pre-construction in order to ensure suitable alternative arrangements, where applicable, were undertaken prior to construction. Therefore, changes in private well data in the interim period are not judged likely to cause any alteration to the ES 2016 assessment of effects.

**Flooding and Drainage –** the only change is the application of climate change and the assessment associated with this. As described above, guidance and policy in relation to flooding and drainage has not been updated though various documents are published in draft form at the start of an approval process. Currently the A5WTC complies with policy.

CONCLUSION

The minor alterations to baseline conditions and additional monitoring data do not alter the significance outcomes of the various elements or overall conclusion of the ES 2016 Road Drainage and Water Environment assessment. No significant effects are anticipated in relation to Road Drainage and the Water Environment.

# Appendix B

## AIR QUALITY

# AIR QUALITY

## LEGISLATION AND POLICY

The Air Quality Standards (Amendment) Regulations (Northern Ireland) 2017[1] update the Air Quality Standards Regulations (Northern Ireland) 2010[2] and came into force on 9th February 2017. The regulations amend the definition of Directive 2008/50/EC10 and makes amendments to Schedule 1 (which concerns sampling points). Regulation 4 corrects a drafting error in the previous Regulations relating to the distance of traffic-oriented samplers from the roadside.

A Clean Air Strategy[3] was published by Department for Environment, Food and Rural Affairs (DEFRA) in January 2019. The Strategy[3] sets out a comprehensive set of proposals to tackle all sources of air pollution. It is identified that, *"Transport is a significant source of emissions of air pollution. The immediate air quality challenge is to reduce emissions of nitrogen oxides in the areas where concentrations of these harmful gases currently exceed legal limits."*

Section 9.5 of the Clean Air Strategy[3] identifies that a specific Air Quality Strategy for Northern Ireland is in preparation. The following key statements are outlined in the Clean Air Strategy[3]:

- *"Northern Ireland has largely seen reductions in emissions in recent years similar to those for the UK as a whole for nitrogen oxides, sulphur dioxide and volatile organic compounds*
- *Northern Ireland's geography and maritime position ensure it has a steady supply of good air; however, $NO_2$ pollution from road traffic is a significant problem, with the proportion of journeys made by public transport and active travel being fairly stable over time.*
- *Generally concentrations of $NO_2$ have been falling in recent years and except for Belfast, Northern Ireland is compliant with the limit values for $NO_2$ concentrations set out by 2008/50/EC[10]."*

The Northern Ireland Executive's draft Programme for Government (PfG)[39] was published in May 2016. The PfG contains an indicator on air quality, based on monitored levels of annual mean $NO_2$. The indicator is referenced in the Clean Air Strategy[3] and has a delivery plan that sets out a range of measures, including those focusing on transport, which are aimed at reducing congestion and promoting modal shift away from private car use.

Key indicator 37 (Improve Air Quality) states that, *"The average annual mean concentration of $NO_2$ across Northern Ireland's urban background areas has remained relatively stable over the past thirteen years, varying between 19 and 27 µg/m$^3$ since 2001."*

The UK Air Quality Action Plan was published by DEFRA[5] in 2017. This document and accompanying zone plans set out the UK Government's comprehensive approach to meeting the statutory limits for $NO_2$. Table 1 of the detailed UK Air Quality Action Plan document[9] identifies UK ambient air quality reporting zones that meet both the annual mean $NO_2$ limit value of 40 µg/m$^3$ and hourly mean $NO_2$ limit value of 200 µg/m$^3$ in 2015, to which Northern Ireland is included.

Section 7.7 of the plan outlines additional actions that the Northern Ireland Executive are committed to deliver, such as improving air quality by increasing sustainable transport, develop air quality

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39 Northern Ireland Executive (2016) *Draft Programme for Government Framework 2016-21,* May 2016 [online] https://www.northernireland.gov.uk/sites/default/files/consultations/newnigov/draft-pfg-framework-2016-21.pdf

planning guidance and to bring forward major works to improve travel times, ease congestion and support economic growth.

ES 2016 - LOCAL AIR QUALITY ASSESSMENT

Table B1 presents a summary of the local air quality assessment work completed for the ES 2016 with inclusion of $PM_{2.5}$ and revised 2015-based background pollutant concentrations incorporated into the assessment.

**Table B1 – Summary of Annual Mean NO2, PM10 and PM2.5 Concentrations – Opening Year (2028) ES 2016**

| Pollutant | | TG (16) - $NO_2$ | IAN170 - $NO_2$ | $PM_{10}$ | $PM_{2.5}$ |
|---|---|---|---|---|---|
| Annual Mean Objective (µg/m$^3$) | | 40 | 40 | 40 | 25 |
| Number of Properties above AQO | Without Scheme Exceedances | 1 | 19 | 0 | 0 |
| | With Scheme Exceedances | 1 | 4 | 0 | 0 |
| | New Exceedances | 0 | 0 | 0 | 0 |
| | Removal of Exceedances | 0 | 15 | 0 | 0 |
| Total Number of Properties | Improvement in Concentration | 7397 | 7405 | 7630 | 5949 |
| | No Change in Concentration | 116 | 103 | 1478 | 3113 |
| | Deterioration in Concentration | 2750 | 2755 | 1155 | 1201 |
| DS-DM Annual Mean Change (µg/m$^3$) | Maximum Deterioration | 11.2 | 13.0 | 3.2 | 1.7 |
| | Maximum Improvement | -12.9 | -24.8 | -4.3 | -2.3 |
| Total Receptors | | 10263 | 10263 | 10263 | 10263 |
| Ratio (Improvement to Deterioration) | | 2.7: 1 | 2.7: 1 | 6.6: 1 | 5: 1 |

The changes in $NO_2$, (with DEFRA LAQM.TG(16)[12] and IAN 170/12[7] adjustment) $PM_{10}$ and $PM_{2.5}$ annual mean concentrations with the Proposed Scheme are presented in Table B2.

**Table B2 – Magnitude of Change for Annual Mean $NO_2$, $PM_{10}$, $PM_{2.5}$ - ES 2016**

| Change in annual mean (µg/m³) | Opening Year (2028) | | | |
|---|---|---|---|---|
| | TG (16) $NO_2$ | IAN 170 - $NO_2$ | $PM_{10}$ | $PM_{2.5}$ |
| **More than 10% Increase** | 26 (0.3%) | 49 (0.5%) | 0 (0.0%) | 0 (0.0%) |
| **Between 5% and 10% Increase** | 54 (0.5%) | 99 (1.0%) | 2 (0.0%) | 2 (0.0%) |
| **Between 1% and 5% Increase** | 859 (8.4%) | 1012 (9.9%) | 104 (1.0%) | 134 (1.3%) |
| **Between 0% and 1% Increase** | 1811 (17.6%) | 1595 (15.5%) | 1049 (10.2%) | 1065 (10.4%) |
| **No Change (0.0)** | 116 (1.1%) | 103 (1.0%) | 1478 (14.4%) | 3113 (30.3%) |
| **Between 0% and 1% Decrease** | 3398 (33.1%) | 2603 (25.4%) | 5750 (56.0%) | 4405 (42.9%) |
| **Between 1% and 5% Decrease** | 3310 (32.3%) | 3371 (32.8%) | 1811 (17.6%) | 1522 (14.8%) |
| **Between 5% and 10% Increase** | 603 (5.9%) | 809 (7.9%) | 68 (0.7%) | 22 (0.2%) |
| **More than 10% Decrease** | 86 (0.8%) | 622 (6.1%) | 1 (0.0%) | 0 (0.0%) |
| **Total Receptors** | **10263** | **10263** | **10263** | **10263** |

Note: % values rounded to 1 d.p.

**Table B3 – Phase Three Local Air Quality Receptors Informing Scheme Significance in 2028 – IAN 170/12 – ES 2016**

| Magnitude of Change (µg/m³) | Annual Mean $NO_2$ | | Annual Mean $PM_{10}$ | |
|---|---|---|---|---|
| | Worsening of AQO already above AQO or creation of new exceedance | Improvement of AQO already above AQO or removal of an existing exceedance | Worsening of AQO already above AQO or creation of new exceedance | Improvement of AQO already above AQO or removal of an existing exceedance |
| **Large (>4)** | 0 | 16 | 0 | 0 |
| **Medium (>2 to 4)** | 0 | 0 | 0 | 0 |
| **Small (>0.4 to 2)** | 0 | 3 | 0 | 0 |

The summary of significance impacts on annual mean $NO_2$, $PM_{10}$ and $PM_{2.5}$ concentration is summarised in Table B4 below, with reference to updated EPUK/IAQM guidance[14] impact descriptors.

**Table B4 – Significance Impact Summary - EPUK/IAQM – Opening Year (2028) – ES 2016**

| EPUK / IAQM Significance | Pollutant | | | |
|---|---|---|---|---|
| Impact description | TG (16) $NO_2$ | IAN 170 - $NO_2$ | $PM_{10}$ | $PM_{2.5}$ |
| **Substantial beneficial** | 1 | 6 | 0 | 0 |
| **Moderate beneficial** | 80 | 612 | 1 | 0 |
| **Slight beneficial** | 585 | 808 | 68 | 22 |
| **Negligible** | 9518 | 8702 | 10192 | 10239 |
| **Slight adverse** | 55 | 86 | 2 | 2 |
| **Moderate adverse** | 24 | 49 | 0 | 0 |
| **Substantial adverse** | 0 | 0 | 0 | 0 |
| **Total Receptors** | **10263** | **10263** | **10263** | **10263** |

OBC 2017 - LOCAL AIR QUALITY ASSESSMENT

Table B5 present a summary of the local air quality assessment work completed for the OBC 2017 with inclusion of $PM_{2.5}$ and revised 2015-based background pollutant concentrations incorporated into the assessment.

**Table B5 – Summary of Annual Mean $NO_2$, $PM_{10}$ and $PM_{2.5}$ Concentrations –2028 – OBC 2017**

| Pollutant | | TG (16) - $NO_2$ | IAN170 - $NO_2$ | $PM_{10}$ | $PM_{2.5}$ |
|---|---|---|---|---|---|
| Annual Mean Objective Limit (µg/m$^3$) | | 40 | 40 | 40 | 25 |
| Number of Properties above AQO | Without Scheme Exceedances | 1 | 55 | 0 | 0 |
| | With Scheme Exceedances | 0 | 23 | 0 | 0 |
| | New Exceedances | 0 | 0 | 0 | 0 |
| | Removal of Exceedances | 1 | 32 | 0 | 0 |
| Total Number of Properties | Improvement in Concentration | 7084 | 7088 | 6178 | 5181 |
| | No Change in Concentration | 268 | 268 | 2733 | 4034 |
| | Deterioration in Concentration | 2911 | 2907 | 1352 | 1048 |
| DS-DM Annual Mean Change (µg/m$^3$) | Maximum Deterioration | 8.6 | 13.2 | 2.8 | 1.5 |
| | Maximum Improvement | -9.0 | -27.2 | -3.3 | -1.8 |
| Total Receptors | | 10263 | 10263 | 10263 | 10263 |
| Ratio (Improvement to Deterioration) | | 2.4: 1 | 2.4: 1 | 4.6: 1 | 4.9: 1 |

The changes in $NO_2$, (with DEFRA LAQM.TG(16)[12] and IAN 170/12[7] adjustment) $PM_{10}$ and $PM_{2.5}$ annual mean concentrations with the Proposed Scheme are presented in Table B6. Table B7 presents the significance impact for the Proposed Scheme, based on IAN 174/13[8].

**Table B6 - Magnitude of Change for Annual Mean $NO_2$, $PM_{10}$, $PM_{2.5}$ – OBC 2017**

| Change in annual mean (µg/m$^3$) | Opening Year (2028) | | | |
|---|---|---|---|---|
| | TG (16) $NO_2$ | IAN 170 - $NO_2$ | $PM_{10}$ | $PM_{2.5}$ |
| More than 10% Increase | 3 (0.0%) | 26 (0.3%) | 0 (0.0%) | 0 (0.0%) |
| Between 5% and 10% Increase | 29 (0.3%) | 88 (0.9%) | 2 (0.0%) | 2 (0.0%) |
| Between 1% and 5% Increase | 650 (6.3%) | 986 (9.6%) | 72 (0.7%) | 72 (0.7%) |
| Between 0% and 1% Increase | 2229 (21.7%) | 1807 (17.6%) | 1278 (12.5%) | 974 (9.5%) |
| No Change (0.0) | 268 (2.6%) | 268 (2.6%) | 2733 (26.6%) | 4034 (39.3%) |
| Between 0% and 1% Decrease | 3676 (35.8%) | 2328 (22.7%) | 4737 (46.2%) | 3721 (36.3%) |
| Between 1% and 5% Decrease | 2882 (28.1%) | 3102 (30.2%) | 1415 (13.8%) | 1447 (14.1%) |
| Between 5% and 10% Increase | 447 (4.4%) | 843 (8.2%) | 26 (0.3%) | 13 (0.1%) |
| More than 10% Decrease | 79 (0.8%) | 815 (7.9%) | 0 (0.0%) | 0 (0.0%) |
| Total Receptors | **10263** | **10263** | **10263** | **10263** |

Note: % values rounded to 1 d.p.

**Table B7 - Local Air Quality Receptors Informing Scheme Significance in 2028 (IAN 170/12) OBC 2017**

| Magnitude of Change (µg/m³) | Annual Mean $NO_2$ | | Annual Mean $PM_{10}$ | |
|---|---|---|---|---|
| | Worsening of AQO already above AQO or creation of new exceedance | Improvement of AQO already above AQO or removal of an existing exceedance | Worsening of AQO already above AQO or creation of new exceedance | Worsening of AQO already above AQO or creation of new exceedance |
| **Large (>4)** | 0 | 45 | 0 | 0 |
| **Medium (>2 to 4)** | 0 | 4 | 0 | 0 |
| **Small (>0.4 to 2)** | 0 | 5 | 0 | 0 |

The summary of significance impacts on annual mean $NO_2$, $PM_{10}$ and $PM_{2.5}$ concentration is summarised in Table B8 below, with reference to updated EPUK/IAQM guidance[14] impact descriptors.

**Table B8 - Significance Impact Summary - EPUK/IAQM – Opening Year (2028) - OBC 2017**

| EPUK / IAQM Significance | Pollutant | | | |
|---|---|---|---|---|
| Impact description | TG (16) $NO_2$ | IAN 170 - $NO_2$ | $PM_{10}$ | $PM_{2.5}$ |
| **Substantial beneficial** | 0 | 26 | 0 | 0 |
| **Moderate beneficial** | 76 | 793 | 0 | 0 |
| **Slight beneficial** | 429 | 820 | 26 | 13 |
| **Negligible** | 9728 | 8513 | 10235 | 10248 |
| **Slight adverse** | 27 | 84 | 2 | 2 |
| **Moderate adverse** | 3 | 27 | 0 | 0 |
| **Substantial adverse** | 0 | 0 | 0 | 0 |
| **Total Receptors** | **10263** | **10263** | **10263** | **10263** |

SENSITIVITY ANALYSIS ON DEFRA EMISSIONS FACTOR TOOLKITS V7 VS V8.0.1

Table B9 presents the sensitivity analysis carried out to compare the top 20 road-$NO_X$ emission rates generated by the EFT V7 dataset for road links contained in both the Without Scheme and With Scheme scenario for Phase 3 (2028), in addition to the corresponding emission rates derived using EFT V8.0.1.

**Table B9 - Comparison of Road-$NO_X$ emission rates – EFT V7 vs EFT V8.0.1**

| Road Link ID | EFT V7.0 ($gNO_X$/km/sec) | | | EFT V8.0.1 ($gNO_X$/km/sec) | | |
|---|---|---|---|---|---|---|
| | 2028 Without Scheme | 2028 With Scheme | 2028 Change | 2028 Without Scheme | 2028 With Scheme | 2028 Change |
| **Top 20 Road-$NO_X$ Emission Rates – Extracted from 2028 Without Scheme Scenario** | | | | | | |
| **10027-10801** | 0.040 | 0.041 | **0.001** | 0.048 | 0.049 | **0.001** |
| **10378-10715** | 0.036 | 0.026 | **-0.010** | 0.045 | 0.031 | **-0.013** |
| **10376-10716** | 0.036 | 0.026 | **-0.010** | 0.045 | 0.031 | **-0.013** |
| **10484-10168** | 0.040 | 0.040 | **0.000** | 0.062 | 0.048 | **-0.014** |

| Road Link ID | EFT V7.0 ($gNO_X$/km/sec) | | | EFT V8.0.1 ($gNO_X$/km/sec) | | |
|---|---|---|---|---|---|---|
| | 2028 Without Scheme | 2028 With Scheme | 2028 Change | 2028 Without Scheme | 2028 With Scheme | 2028 Change |
| **10473-10459** | 0.048 | 0.033 | **-0.015** | 0.058 | 0.037 | **-0.020** |
| **10550-10551** | 0.040 | 0.025 | **-0.015** | 0.119 | 0.062 | **-0.057** |
| **10715-10376** | 0.036 | 0.026 | **-0.010** | 0.045 | 0.031 | **-0.013** |
| **10797-10798** | 0.035 | 0.035 | **0.000** | 0.041 | 0.041 | **0.000** |
| **10798-10799** | 0.035 | 0.035 | **0.000** | 0.041 | 0.041 | **0.000** |
| **10799-10800** | 0.035 | 0.035 | **0.000** | 0.041 | 0.041 | **0.000** |
| **10800-10027** | 0.040 | 0.041 | **0.001** | 0.048 | 0.049 | **0.001** |
| **12056-10797** | 0.035 | 0.035 | **0.000** | 0.041 | 0.041 | **0.000** |
| **12057-10800** | 0.040 | 0.041 | **0.001** | 0.048 | 0.049 | **0.001** |
| **10440-10439** | 0.035 | 0.027 | **-0.008** | 0.105 | 0.064 | **-0.041** |
| **10273-10378** | 0.036 | 0.026 | **-0.010** | 0.045 | 0.031 | **-0.013** |
| **10548-10551** | 0.037 | 0.030 | **-0.007** | 0.107 | 0.075 | **-0.032** |
| **10940-10548** | 0.035 | 0.025 | **-0.010** | 0.041 | 0.027 | **-0.014** |
| **20020-20056** | 0.044 | 0.032 | **-0.012** | 0.047 | 0.034 | **-0.013** |
| **20013-20020** | 0.045 | 0.032 | **-0.013** | 0.049 | 0.035 | **-0.015** |
| **20128-20013** | 0.052 | 0.046 | **-0.006** | 0.060 | 0.051 | **-0.009** |
| **20129-20128** | 0.037 | 0.029 | **-0.008** | 0.039 | 0.032 | **-0.008** |
| **20056-20129** | 0.044 | 0.032 | **-0.012** | 0.049 | 0.035 | **-0.014** |
| **Top 20 Road-$NO_x$ Emission Rates – Extracted from 2028 With Scheme Scenario** | | | | | | |
| **10027-10801** | 0.040 | 0.041 | **0.001** | 0.048 | 0.049 | **0.001** |
| **10476-10020** | 0.031 | 0.032 | **0.001** | 0.043 | 0.044 | **0.001** |
| **10484-10168** | 0.040 | 0.040 | **0.000** | 0.062 | 0.048 | **-0.014** |
| **10473-10459** | 0.048 | 0.033 | **-0.015** | 0.058 | 0.037 | **-0.020** |
| **10590-10801** | 0.034 | 0.034 | **-0.001** | 0.044 | 0.042 | **-0.001** |
| **10636-10795** | 0.034 | 0.034 | **-0.001** | 0.044 | 0.042 | **-0.001** |
| **10797-10798** | 0.035 | 0.035 | **0.000** | 0.041 | 0.041 | **0.000** |
| **10798-10799** | 0.035 | 0.035 | **0.000** | 0.041 | 0.041 | **0.000** |
| **10799-10800** | 0.035 | 0.035 | **0.000** | 0.041 | 0.041 | **0.000** |
| **10800-10027** | 0.040 | 0.041 | **0.001** | 0.048 | 0.049 | **0.001** |
| **10801-10636** | 0.034 | 0.034 | **-0.001** | 0.044 | 0.042 | **-0.001** |
| **11152-10484** | 0.032 | 0.033 | **0.001** | 0.035 | 0.036 | **0.001** |
| **11185-11130** | 0.031 | 0.033 | **0.002** | 0.035 | 0.037 | **0.002** |
| **12056-10797** | 0.035 | 0.035 | **0.000** | 0.041 | 0.041 | **0.000** |
| **12057-10800** | 0.040 | 0.041 | **0.001** | 0.048 | 0.049 | **0.001** |
| **20020-20056** | 0.044 | 0.032 | **-0.012** | 0.047 | 0.034 | **-0.013** |
| **20013-20020** | 0.045 | 0.032 | **-0.013** | 0.049 | 0.035 | **-0.015** |
| **20128-20013** | 0.052 | 0.046 | **-0.006** | 0.060 | 0.051 | **-0.009** |

| Road Link ID | EFT V7.0 ($gNO_X$/km/sec) | | | EFT V8.0.1 ($gNO_X$/km/sec) | | |
|---|---|---|---|---|---|---|
| | 2028 Without Scheme | 2028 With Scheme | 2028 Change | 2028 Without Scheme | 2028 With Scheme | 2028 Change |
| **20056-20129** | 0.044 | 0.032 | **-0.012** | 0.049 | 0.035 | **-0.014** |
| **10332-10762** | 0.030 | 0.031 | **0.001** | 0.034 | 0.034 | **0.000** |

## UPDATED REGIONAL AIR QUALITY ASSESSMENT

Table B10 presents the regional air quality assessment, which has been updated by using the OBC 2017 traffic dataset for the opening year of 2028 and maintaining the spatial extents of the regional network ascertained from the 2016 ES.

**Table B10 - Regional Assessment – OBC 2017 with DEFRA EFT V8.0.1**

| Scenario | Total Mass Emissions (tonnes) | | | |
|---|---|---|---|---|
| | $NO_x$ | $PM_{10}$ | $PM_{2.5}$ | $CO_2$ |
| **Without Scheme Opening Year (2028)** | 137.9 | 29.0 | 16.2 | 163,520 |
| **With Scheme Opening Year (2028)** | 166.1 | 32.6 | 18.3 | 196,301 |
| **Without Scheme Design Year (2043) **** | 138.8 | 32.8 | 18.3 | 184,488 |
| **With Scheme Design Year (2043) **** | 169.7 | 37.9 | 21.3 | 229,549 |
| **Change from Without Scheme to With Scheme Opening Year (2028)** | 28.2 | 3.6 | 2.1 | 32,781 |
| **Change from Without Scheme to With Scheme Design Year (2043) **** | 30.9 | 5.1 | 2.9 | 45,060 |
| **Percentage Change (%) (With-Without 2028)** | 20.4% | 12.5% | 12.9% | 20.0% |
| **Percentage Change (%) (With-Without 2043) **** | 22.3% | 15.6% | 16.0% | 24.4% |

* 2030 used in lieu of 2043 design year

UPDATED COMPLIANCE ASSESSMENT

Table B11 presents the superseded 2013 base year and current 2015 base year PCM model data for the PCM links contained in the Proposed Scheme study area for 2019 and first full year of opening for the Scheme (2028).

**Table B11 – Change in PCM Model Annual Mean NO2 Concentrations**

| DEFRA PCM Link CENSUS ID | Road Name | 2013 Base Year (2015) PCM Model | | 2015 Base Year (2017) PCM Model | | Change in concentration between 2013 and 2015 PCM base models | |
|---|---|---|---|---|---|---|---|
| | | 2019 [1] | 2028 [2] | 2019 | 2028 | 2019 | 2028 |
| 902391 | A5 | 17.9 | 11.4 | 20.6 | 12.9 | +2.8 | +1.5 |
| 902626 | A5 | 13.7 | 8.4 | 16.5 | 9.7 | +2.8 | +1.3 |
| 902628 | A505 | 11.1 | 7.4 | 14.9 | 9.0 | +3.8 | +1.6 |
| 902644 | A5 | 20.1 | 13.4 | 27.8 | 17.2 | +7.7 | +3.8 |
| 902645 | A5 | 21.3 | 13.4 | 28.0 | 16.7 | +6.7 | +3.3 |
| 902648 | A5 | 15.6 | 9.4 | 20.4 | 12.6 | +4.8 | +3.2 |
| 902649 | A5 | 15.6 | 10.4 | 20.5 | 12.7 | +4.9 | +2.3 |
| 902659 | A5 | 16.7 | 11.4 | 23.0 | 14.7 | +6.2 | +3.3 |
| 902660 | A5 | 16.0 | 9.4 | 20.4 | 11.7 | +4.4 | +2.3 |

1 – Data interpolation, between 2015 and 2020 roadside $NO_2$ concentrations
2 – Data interpolation, between 2025 and 2030 roadside $NO_2$ concentrations

ECOLOGICAL AIR QUALITY IMPACTS – TULLY BOG SAC

Since the completion of the assessment, revised background $NO_X$ and $NO_2$ concentrations (2015-based) have been published by Defra. The updated concentrations relative to the Tully Bog SAC area were obtained for 2028. The respective 2028 values were applied to calculate the average 5x5km $NO_X$ and $NO_2$ backgrounds and respective N-Deposition background values. Conversion of $NO_x$ to $NO_2$ was carried out with the latest DEFRA calculator.

The highest 20 receptor impacts within Tully Bog SAC, given as a percentage of the relevant critical load, are presented in Table B12. A schedule of results for the Tully Bog SAC N-deposition modelling assessment exercise is provided in Appendix B (Air Quality Data CD).

**Table B12 - N-Deposition Modelling - Tully Bog SAC – 2015-based Backgrounds**

| Receptor Point | OS X | OS Y | Road N-dep kgN/ha/yr - Without Scheme | Road N-dep kgN/ha/yr - With Scheme | N-Dep Increase (With Scheme – Without Scheme) kgN/ha/yr | % increase above lower range of N-Dep Critical Load (5kgN/ha/yr) |
|---|---|---|---|---|---|---|
| **Tully_76** | 242514.1 | 375198.2 | 0.019 | 0.045 | 0.026 | 0.52% |
| **Tully_117** | 242514.1 | 375203.2 | 0.019 | 0.045 | 0.026 | 0.52% |
| **Tully_157** | 242504.1 | 375208.2 | 0.019 | 0.044 | 0.025 | 0.50% |
| **Tully_158** | 242509.1 | 375208.2 | 0.019 | 0.044 | 0.025 | 0.50% |
| **Tully_159** | 242514.1 | 375208.2 | 0.020 | 0.045 | 0.025 | 0.50% |

| Receptor Point | OS X | OS Y | Road N-dep kgN/ha/yr - Without Scheme | Road N-dep kgN/ha/yr - With Scheme | N-Dep Increase (With Scheme – Without Scheme) kgN/ha/yr | % increase above lower range of N-Dep Critical Load (5kgN/ha/yr) |
|---|---|---|---|---|---|---|
| **Tully_201** | 242504.1 | 375213.2 | 0.019 | 0.044 | 0.025 | 0.50% |
| **Tully_202** | 242509.1 | 375213.2 | 0.020 | 0.045 | 0.025 | 0.50% |
| **Tully_203** | 242514.1 | 375213.2 | 0.020 | 0.045 | 0.025 | 0.50% |
| **Tully_247** | 242504.1 | 375218.2 | 0.019 | 0.044 | 0.025 | 0.50% |
| **Tully_248** | 242509.1 | 375218.2 | 0.020 | 0.045 | 0.025 | 0.50% |
| **Tully_249** | 242514.1 | 375218.2 | 0.020 | 0.045 | 0.025 | 0.50% |
| **Tully_297** | 242514.1 | 375223.2 | 0.020 | 0.046 | 0.026 | 0.52% |
| **Tully_352** | 242514.1 | 375228.2 | 0.020 | 0.046 | 0.026 | 0.52% |
| **Tully_409** | 242514.1 | 375233.2 | 0.020 | 0.046 | 0.026 | 0.52% |
| **Tully_468** | 242509.1 | 375238.2 | 0.020 | 0.046 | 0.026 | 0.52% |
| **Tully_530** | 242509.1 | 375243.2 | 0.020 | 0.046 | 0.026 | 0.52% |
| **Tully_531** | 242514.1 | 375243.2 | 0.021 | 0.047 | 0.026 | 0.52% |
| **Tully_596** | 242514.1 | 375248.2 | 0.021 | 0.047 | 0.026 | 0.52% |
| **Tully_663** | 242514.1 | 375253.2 | 0.021 | 0.047 | 0.026 | 0.52% |
| **Tully_730** | 242509.1 | 375258.2 | 0.021 | 0.047 | 0.026 | 0.52% |

Table B13 provides a summary of the percentage of the area affected by the Proposed Scheme regarding N-deposition at Tully Bog SAC and with the 2015-based background concentrations applied.

**Table B13 – Area of Tully Bog SAC Affected by Phase Three (2028) of Proposed Scheme – 2015-based Backgrounds**

| Impact Criteria (% of Site Critical Load) | Area (as %) of Tully Bog impacted by A5WTC – 2028 |
|---|---|
| **More than 0.5%** | 0.08% |
| **Between 0.4% and 0.5%** | 1.97% |
| **Between 0.2% and 0.4%** | 52.89% |
| **Less than 0.2%** | 45.07% |
| **Total %** | 100.00% |

### *Sensitivity Analysis on DEFRA Emissions Factor Toolkit V7 vs V8.0.1 – Tully Bog SAC*

Table B14 provides the respective road-$NO_X$ emission rates generated by the EFT V7 dataset for road links adjacent to Tully Bog SAC contained in both the Without Scheme and With Scheme scenario for the opening year (2028), in addition to the corresponding emission rates derived using EFT V8.0.1. This is broken into two subsections, reflecting the existing network and additional road links that will be introduced as part of the Proposed Scheme.

**Table B14 - Comparison of Road-NOX emission rates – EFT V7 vs EFT V8.0.1 – Tully Bog SAC**

| Road Link ID | EFT V7.0 (gNOx/km/sec) | | | EFT V8.0.1 (gNOx/km/sec) | | |
|---|---|---|---|---|---|---|
| | 2028 Without Scheme | 2028 With Scheme | 2028 Change | 2028 Without Scheme | 2028 With Scheme | 2028 Change |
| **Road-$NO_x$ Emission Rates – Extracted from Tully Bog 2028 Modelling Scenarios – Existing Network** | | | | | | |
| **10241-10242** | 0.001 | 0.001 | **0.000** | 0.001 | 0.001 | **0.000** |
| **10242-11980** | 0.000 | 0.000 | **0.000** | 0.000 | 0.000 | **0.000** |
| **10274-10501** | 0.013 | 0.007 | **-0.006** | 0.013 | 0.007 | **-0.006** |
| **10501-10585** | 0.001 | 0.000 | **-0.001** | 0.001 | 0.000 | **-0.001** |
| **10501-10586** | 0.013 | 0.007 | **-0.006** | 0.013 | 0.007 | **-0.005** |
| **10523-10546** | 0.001 | 0.000 | **-0.001** | 0.001 | 0.000 | **-0.001** |
| **10546-10608** | 0.001 | 0.000 | **-0.001** | 0.001 | 0.000 | **-0.001** |
| **10585-10523** | 0.001 | 0.000 | **-0.001** | 0.001 | 0.000 | **-0.001** |
| **10586-10589** | 0.013 | 0.000 | **-0.013** | 0.013 | 0.000 | **-0.013** |
| **10589-11227** | 0.013 | 0.006 | **-0.007** | 0.013 | 0.006 | **-0.007** |
| **10608-11518** | 0.001 | 0.001 | **0.000** | 0.001 | 0.001 | **0.000** |
| **11226-10241** | 0.018 | 0.007 | **-0.011** | 0.022 | 0.008 | **-0.014** |
| **11227-11228** | 0.013 | 0.005 | **-0.007** | 0.013 | 0.006 | **-0.007** |
| **11228-10242** | 0.000 | 0.000 | **0.000** | 0.000 | 0.000 | **0.000** |
| **11228-11226** | 0.013 | 0.005 | **-0.007** | 0.013 | 0.006 | **-0.007** |
| **11518-11519** | 0.001 | 0.001 | **0.000** | 0.001 | 0.001 | **0.000** |
| **11519-11520** | 0.001 | 0.001 | **0.000** | 0.001 | 0.001 | **0.000** |
| **11520-11748** | 0.001 | 0.001 | **0.000** | 0.001 | 0.001 | **0.000** |
| **11528-11529** | 0.000 | 0.000 | **0.000** | 0.000 | 0.000 | **0.000** |
| **11531-11532** | 0.000 | 0.000 | **0.000** | 0.000 | 0.000 | **0.000** |
| **11532-11528** | 0.000 | 0.000 | **0.000** | 0.000 | 0.000 | **0.000** |
| **11665-11666** | 0.002 | 0.002 | **0.000** | 0.002 | 0.002 | **0.000** |
| **11666-11667** | 0.002 | 0.002 | **0.000** | 0.002 | 0.002 | **0.000** |
| **11667-11226** | 0.002 | 0.002 | **0.000** | 0.002 | 0.002 | **0.000** |
| **11748-11749** | 0.001 | 0.001 | **0.000** | 0.001 | 0.001 | **0.000** |
| **11749-11750** | 0.001 | 0.001 | **0.000** | 0.001 | 0.001 | **0.000** |
| **11980-11981** | 0.000 | 0.000 | **0.000** | 0.000 | 0.000 | **0.000** |
| **11981-11531** | 0.000 | 0.000 | **0.000** | 0.000 | 0.000 | **0.000** |
| **11984-11985** | 0.016 | 0.009 | **-0.007** | 0.016 | 0.010 | **-0.007** |
| **11985-10274** | 0.013 | 0.007 | **-0.006** | 0.014 | 0.007 | **-0.007** |
| **Road-$NO_x$ Emission Rates – Extracted from Tully Bog 2028 Modelling Scenarios – Proposed Scheme Links** | | | | | | |
| **20007-20151** | - | 0.005 | **0.005** | - | 0.006 | **0.006** |
| **20007-20383** | - | 0.004 | **0.004** | - | 0.005 | **0.005** |
| **20019-20153** | - | 0.001 | **0.001** | - | 0.002 | **0.002** |
| **20026-20148** | - | 0.008 | **0.008** | - | 0.009 | **0.009** |

| Road Link ID | EFT V7.0 ($gNO_X$/km/sec) | | | EFT V8.0.1 ($gNO_X$/km/sec) | | |
|---|---|---|---|---|---|---|
| | 2028 Without Scheme | 2028 With Scheme | 2028 Change | 2028 Without Scheme | 2028 With Scheme | 2028 Change |
| **20145-20151** | - | 0.002 | **0.002** | - | 0.003 | **0.003** |
| **20145-20152** | - | 0.011 | **0.011** | - | 0.010 | **0.010** |
| **20146-20007** | - | 0.001 | **0.001** | - | 0.002 | **0.002** |
| **20146-20152** | - | 0.003 | **0.003** | - | 0.003 | **0.003** |
| **20147-20154** | - | 0.002 | **0.002** | - | 0.002 | **0.002** |
| **20147-20383** | - | 0.008 | **0.008** | - | 0.009 | **0.009** |
| **20148-20147** | - | 0.008 | **0.008** | - | 0.009 | **0.009** |
| **20149-20148** | - | 0.005 | **0.005** | - | 0.006 | **0.006** |
| **20149-20383** | - | 0.004 | **0.004** | - | 0.005 | **0.005** |
| **20150-20149** | - | 0.005 | **0.005** | - | 0.006 | **0.006** |
| **20150-20154** | - | 0.010 | **0.010** | - | 0.009 | **0.009** |
| **20151-20153** | - | 0.002 | **0.002** | - | 0.003 | **0.003** |
| **20152-20282** | - | 0.015 | **0.015** | - | 0.014 | **0.014** |
| **20153-20146** | - | 0.001 | **0.001** | - | 0.002 | **0.002** |
| **20154-20366** | - | 0.012 | **0.012** | - | 0.012 | **0.012** |
| **20211-20212** | - | 0.012 | **0.012** | - | 0.011 | **0.011** |
| **20219-20220** | - | 0.013 | **0.013** | - | 0.012 | **0.012** |
| **20220-20376** | - | 0.014 | **0.014** | - | 0.013 | **0.013** |
| **20280-20281** | - | 0.016 | **0.016** | - | 0.016 | **0.016** |
| **20281-20150** | - | 0.016 | **0.016** | - | 0.016 | **0.016** |
| **20282-20283** | - | 0.015 | **0.015** | - | 0.014 | **0.014** |
| **20366-20211** | - | 0.012 | **0.012** | - | 0.012 | **0.012** |
| **20376-20145** | - | 0.014 | **0.014** | - | 0.013 | **0.013** |

Please Note: Within this appendix summary tables are presented. The associated assessment tables have not been included in the hardcopy of this report. However, a CD of this data is available on request. For a copy please contact the A5 Consultation Manager at:

A5.consultation@wsp.com or alternatively call 028 9595 3023 (UK), +44 (0)28 9042 3954 (International).

Appendix B - Air Quality Assessment Tables is also available for viewing at: http://www.a5wtc.com/

# Appendix C

## ECOLOGY AND NATURE CONSERVATION

## ECOLOGY AND NATURE CONSERVATION

INTRODUCTION

A review of the baseline environment and the guidance and legislation informing the assessment process has been undertaken since the ES 2016 to inform this ESA 2019. Any changes are outlined below.

LEGISLATION AND POLICY

Table C1 below provides a summary of all updates and / or amendments to legislation and policy that have been implemented since submission of the 2016 ES. Please note, only legislation or policies where changes have been made are listed below.

**Table C1 - updates / amendments to legislation and policy (post ES 2016 submission)**

| Legislation / policy | | Updates / amendments (post 2016 ES submission) | Comments / significance of change |
|---|---|---|---|
| **Acts and Regulations** | The Environment (Northern Ireland) Order 2002; includes provisions for declaring Areas of Special Scientific Interest (ASSI) by reason of a site's flora, fauna, geological, physiographical or other features and accordingly the area is afforded special protection. The Order replaces the provisions in the Nature Conservation and Amenity Lands (Northern Ireland) Order 1985 (as amended) | Regulation amendment:<br>The Environment (Northern Ireland) Order 2002 (Amendment) Regulations (Northern Ireland) 2010<br>The Regulation should now be referenced as:<br>**The Environment (Northern Ireland) Order 2002 (as amended)** | The amendment includes for the inclusion of fees and charges related to greenhouse gas emissions permits and operator registry costs in the list of purposes for which the Department is authorised to make a charging scheme. It also provides that the operator charges received by the enforcing authority are to be passed to the Environment Agency.<br>**This change is considered to have no material effect on the conclusions stated in the ES 2016** |
| | The Water Environment (Water Framework Directive) Regulations (Northern Ireland) 2003 which implement in Northern Ireland, Directive 2000/60/EC, The Water Framework Directive (WFD) which aims to establish a framework for the protection of inland surface waters, transitional waters, coastal waters and groundwater | Regulation updated:<br>The Water Environment (Water Framework Directive) Regulations (Northern Ireland) 2017 | The updated 2017 regulations revoke and replace the Water Environment (Water Framework Directive) (Northern Ireland) Regulations 2003; however, they continue to transpose for Northern Ireland Directive 2000/60/EC of the European Parliament establishing a framework for Community action in the field of water policy ("the WFD").<br>**These changes are considered to have no material effect on the conclusions stated in the ES 2016** |
| | The Surface Waters (Fishlife) (Classification) Regulations (Northern Ireland) 2007 which prescribe a system for classifying the quality of freshwaters which need protection or improvement in order to support fish life; | Regulation updated:<br>The Water Framework Directive (Classification, Priority Substances and Shellfish Waters) Regulations (Northern Ireland) 2015 | The Water Framework Directive (Classification, Priority Substances and Shellfish Waters) Regulations (Northern Ireland) 2015 replaces The Surface Waters (Fishlife) (Classification) Regulations (Northern Ireland) 2007. The updated regulations implement Council Directive 2008/105/EC on environmental quality standards in the field of water policy and set out the classification schemes used under the implementation of Directive 2000/60/EC which prescribe a |

| Legislation / policy | | Updates / amendments (post 2016 ES submission) | Comments / significance of change |
|---|---|---|---|
| | | | system for classifying the quality of freshwaters.<br><br>**These changes are considered to have no material effect on the conclusions stated in the ES 2016** |
| | The Environmental Liability (Prevention and Remediation) Regulations (Northern Ireland) 2009 (the Environmental Liability Regulations) which implement Directive 2004/35/EC on environmental liability with regard to the prevention and remedying of environmental damage | Regulation amendment:<br><br>The Environmental Liability (Prevention and Remediation) (Amendment) Regulations (Northern Ireland) 2015<br><br>The regulation should now be referenced as:<br><br>The Environmental Liability (Prevention and Remediation) Regulations (Northern Ireland) 2009 (as amended) | The regulations amendment implements changes introduced by Article 38 of Directive 2013/30/EU of the European Parliament and of the Council on the safety of offshore oil and gas operations and amending Directive 2004/56/EC. Article 38 of Directive 2013/30/EU extends the definition of 'environmental damage' to include damage to the environmental status of marine waters, such that that status is significantly adversely affected.<br><br>**This change is considered to have no material effect on the conclusions stated in the ES 2016** |
| | European Communities (Natural Habitats) Regulations 1997 which give effect to Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (the Habitats Directive) which enable the designation of special areas of conservation (endangered species and habitats of endangered species) as a contribution to an EU Community network to be known as NATURA 2000; | Regulation updated:<br><br>European communities (birds and natural habitats) Regulations 2011<br><br>Regulation amendment:<br><br>European communities (birds and natural habitats) (amendment) regulations 2015.<br><br>The Regulation should now be referenced as:<br><br>European communities (birds and natural habitats) Regulations 2011 (as amended) | The updated 2011 regulations revoke and replace the European Communities (Natural Habitats) Regulations 1997; however, they continue to transpose Article 6(3) of Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora ("the Habitats Directive").<br><br>The 2015 amendment updates the definitions of the Birds Directive (2009/147/EC) and the Habitats Directive (92/43/EEC) to reflect accession of the Republic of Croatia, typographical errors in the 2011 Regulations and provide other provisions to assist Ireland's management of its obligations under the Birds and Habitats Directives, including in relation to Invasive Alien Species.<br><br>**These changes are considered to have no material effect on the conclusions stated in the ES 2016** |
| | Wildlife and Natural Environment Act (Northern Ireland) 2011 (the WANE Act) | - | The WANE Act has not been updated; however, a guidance document is now available[40], which was noted to be absent in the ES 2016. |

[40] DAERA (2016) The Biodiversity Duty: Guidance for Public Bodies

| Legislation / policy | | Updates / amendments (post 2016 ES submission) | Comments / significance of change |
|---|---|---|---|
| | | | **This change is considered to have no material effect on the conclusions stated in the ES 2016** |
| **Plans and Strategies** | A Biodiversity Strategy for Northern Ireland to 2020[41]; sets out a range of targets and actions to be undertaken up to 2020. | Updates to strategy | The Strategy sets out how Northern Ireland plans to meet its international obligations and local targets to protect biodiversity and ensure that the environment can continue to support people and economy. It builds upon the first Biodiversity Strategy published in 2002 but adopts the modern and internationally agreed approach that emphasises the management of biological systems to deliver the materials and services upon which people depend – the ecosystem services approach.<br>**This change is considered to have no material effect on the conclusions stated in the ES 2016** |

Overall, whilst updates and amendments to legislation and policy have been implemented, none of these changes are considered to be significant and the conclusions as stated in the 2016 ES will remain and are not affected.

[41] Department of the Environment (2015) Valuing Nature: A Biodiversity Strategy for Northern Ireland to 2020

# Appendix D

## INTERACTIONS AND CUMULATIVE EFFECTS

# TABLE D1 –CUMULATIVE EFFECTS ON INDIVIDUAL RECEPTORS / RESOURCES (OR GROUPS OF RECEPTORS)

| Proposed Scheme Phase | Location of Human Receptor/ Resource (or group of Receptors) | Approx Chainage | Residual Environmental Effect | | | | Significance of cumulative effect |
|---|---|---|---|---|---|---|---|
| | | | Noise / Vibration | Air Quality | Visual | Land take | |
| 1 | North of Junction 1 | 100-500 | It has been concluded there would be no significant effects associated with construction related noise and vibration.<br><br>Likely to experience short – term major adverse impacts in traffic related noise following completion of the Proposed Scheme. | It has been concluded there would be no significant effects associated with air quality during construction or operation. | Likely to experience significant adverse construction impact.<br><br>Likely to experience minor and moderate adverse visual impact during operation. | Receptors within the red line boundary will experience adverse impacts as a result of land take. | Adverse (Moderate) |
| 1 | West of Magheramason | 3400-3700 | It has been concluded there would be no significant effects associated with construction | It has been concluded there would be no significant effects associated with air quality during | Likely to experience significant adverse construction impact. | Receptors within the red line boundary will experience adverse | Adverse (Moderate) |

| Proposed Scheme Phase | Location of Human Receptor/ Resource (or group of Receptors) | Approx Chainage | Residual Environmental Effect | | | | Significance of cumulative effect |
|---|---|---|---|---|---|---|---|
| | | | Noise / Vibration | Air Quality | Visual | Land take | |
| | | | related noise and vibration.<br><br>Likely to experience short – term major adverse impacts in traffic related noise following completion of the Proposed Scheme. | construction or operation. | Likely to experience minor and moderate adverse visual impact during operation. | impacts as a result of land take. | |
| 1 | South east of Bready | 7000-7300 | It has been concluded there would be no significant effects associated with construction related noise and vibration.<br><br>Likely to experience short – term major adverse impacts in traffic related noise following completion of the Proposed Scheme. | It has been concluded there would be no significant effects associated with air quality during construction or operation. | Likely to experience significant adverse construction impact.<br><br>Likely to experience minor adverse and minor beneficial visual impact during operation. | Receptors within the red line boundary will experience adverse impacts as a result of land take. | Adverse (Minor) |

| Proposed Scheme Phase | Location of Human Receptor/ Resource (or group of Receptors) | Approx Chainage | Residual Environmental Effect | | | | Significance of cumulative effect |
|---|---|---|---|---|---|---|---|
| | | | Noise / Vibration | Air Quality | Visual | Land take | |
| 1 | East of Burn Dennet Bridge | 10500 | It has been concluded there would be no significant effects associated with construction or operational related noise and vibration. | It has been concluded there would be no significant effects associated with air quality during construction or operation. | Likely to experience significant adverse construction impact.<br><br>Likely to experience minor adverse visual impact during operation. | Receptors within the red line boundary will experience adverse impacts as a result of land take. | Adverse (Not Significant) |
| 1 | West of Lowrys Lane | 11600 | It has been concluded there would be no significant effects associated with construction or operational related noise and vibration. | It has been concluded there would be no significant effects associated with air quality during construction or operation. | Likely to experience minor adverse visual impact during operation. | Receptors within the red line boundary will experience adverse impacts as a result of land take. | Adverse (Not Significant) |
| 1 | Glenmornan River Crossing | 12700-13200 | It has been concluded there would be no significant effects associated with | It has been concluded there would be no significant effects associated with air | Likely to experience significant adverse | Receptors within the red line boundary will experience | Adverse (Minor) |

| Proposed Scheme Phase | Location of Human Receptor/ Resource (or group of Receptors) | Approx Chainage | Residual Environmental Effect | | | | Significance of cumulative effect |
|---|---|---|---|---|---|---|---|
| | | | Noise / Vibration | Air Quality | Visual | Land take | |
| | | | construction or operational related noise vibration. | quality during construction or operation. | construction impact.<br><br>Likely to experience minor and moderate adverse visual impact during operation. | adverse impacts as a result of land take. | |
| 1 | Ballymagorry | 13000-15200 | It has been concluded there would be no significant effects associated with construction related noise and vibration.<br><br>Likely to experience short – term major adverse impacts in traffic related noise following completion of the Scheme. | It has been concluded there would be no significant effects associated with air quality during construction or operation. | Likely to experience significant adverse construction impact.<br><br>Likely to experience minor, moderate and major adverse visual impacts during operation. | Receptors within the red line boundary will experience adverse impacts as a result of land take. | Adverse (Moderate) |

| Proposed Scheme Phase | Location of Human Receptor/ Resource (or group of Receptors) | Approx Chainage | Residual Environmental Effect | | | | Significance of cumulative effect |
|---|---|---|---|---|---|---|---|
| | | | Noise / Vibration | Air Quality | Visual | Land take | |
| 2 | Area surrounding Strabane | 15900-18500 | It has been concluded there would be no significant effects associated with construction related noise and vibration.<br><br>Likely to experience short and long term major adverse impacts in traffic related noise following completion of the Scheme, including potential transboundary effects.<br><br>Likely to experience a major increase in night time noise during operation. | It has been concluded there would be no significant effects associated with air quality during construction or operation. | Likely to experience significant adverse construction impact.<br><br>Likely to experience minor, moderate and major adverse visual impact, including potential transboundary effects, during operation. | Receptors within the red line boundary will experience adverse impacts as a result of land take. | Adverse (Moderate) |

| Proposed Scheme Phase | Location of Human Receptor/ Resource (or group of Receptors) | Approx Chainage | Residual Environmental Effect | | | | Significance of cumulative effect |
|---|---|---|---|---|---|---|---|
| | | | Noise / Vibration | Air Quality | Visual | Land take | |
| 2 | Urney Road and Glenfinn Park | 18500-19700 | It has been concluded there would be no significant effects associated with construction related noise and vibration.<br><br>Likely to experience a major increase in night time noise during operation. | It has been concluded there would be no significant effects associated with air quality during construction or operation. | Likely to experience significant adverse construction impact.<br><br>Likely to experience minor, moderate and major adverse visual impact during operation. | Receptors within the red line boundary will experience adverse impacts as a result of land take. | Adverse (Moderate) |
| 2 | Strahans Road | 20400 | It has been concluded there would be no significant effects associated with construction or operational related noise and vibration. | It has been concluded there would be no significant effects associated with air quality during construction or operation. | Likely to experience significant adverse construction impact.<br><br>Likely to experience major adverse visual impact during operation. | Receptors within the red line boundary will experience adverse impacts as a result of land take. | Adverse (Minor) |

| Proposed Scheme Phase | Location of Human Receptor/ Resource (or group of Receptors) | Approx Chainage | Residual Environmental Effect | | | | Significance of cumulative effect |
|---|---|---|---|---|---|---|---|
| | | | Noise / Vibration | Air Quality | Visual | Land take | |
| 2 | Sion Mills | 22500-27600 | It has been concluded there would be no significant effects associated with construction related noise and vibration.<br><br>Likely to experience short and long term major adverse impacts in traffic related noise following completion of the Scheme.<br><br>Likely to experience a major increase in night time noise during operation. | It has been concluded there would be no significant effects associated with air quality during construction or operation. | Likely to experience significant adverse construction impact.<br><br>Likely to experience minor and moderate adverse visual impact during operation.<br><br>Likely to experience minor beneficial visual impact during operation. | Receptors within the red line boundary will experience adverse impacts as a result of land take. | Adverse (Moderate) |
| 2 | East of Glebe | 27400 | It has been concluded there would be no significant effects | It has been concluded there would be no significant effects | Likely to experience minor adverse visual impact | Receptors within the red line boundary will | Adverse (Minor) |

| Proposed Scheme Phase | Location of Human Receptor/ Resource (or group of Receptors) | Approx Chainage | Residual Environmental Effect | | | | Significance of cumulative effect |
|---|---|---|---|---|---|---|---|
| | | | Noise / Vibration | Air Quality | Visual | Land take | |
| | | | associated with construction related to noise and vibration.<br><br>Likely to experience a major increase in short-term traffic related noise during operation. | associated with air quality during construction or operation. | during operation. | experience adverse impacts as a result of land take. | |
| 2 | East of Junction 9 – Victoria Bridge | 31300-32000 | It has been concluded there would be no significant effects associated with construction related to noise and vibration.<br><br>Likely to experience short – term major adverse impacts in traffic related noise following completion of the Scheme. | It has been concluded there would be no significant effects associated with air quality during construction or operation. | Likely to experience significant adverse construction impact.<br><br>Likely to experience minor adverse visual impact during operation. | Receptors within the red line boundary will experience adverse impacts as a result of land take. | Adverse (Minor) |

| Proposed Scheme Phase | Location of Human Receptor/ Resource (or group of Receptors) | Approx Chainage | Residual Environmental Effect | | | | Significance of cumulative effect |
|---|---|---|---|---|---|---|---|
| | | | Noise / Vibration | Air Quality | Visual | Land take | |
| 2 | Derg Road | 34000 | It has been concluded there would be no significant effects associated with construction or operational related noise and vibration. | It has been concluded there would be no significant effects associated with air quality during construction or operation. | Likely to experience significant adverse construction impact.<br><br>Likely to experience minor adverse visual impact during operation. | Receptors within the red line boundary will experience adverse impacts as a result of land take. | Adverse (Not Significant) |
| 2 | Junction 10 – Newtonstewart | 37250 | It has been concluded there would be no significant effects associated with construction or operational related noise and vibration. | It has been concluded there would be no significant effects associated with air quality during construction or operation. | Likely to experience significant adverse construction impact.<br><br>Likely to experience minor and moderate adverse visual impact during operation. | Receptors within the red line boundary will experience adverse impacts as a result of land take. | Adverse (Minor) |

| Proposed Scheme Phase | Location of Human Receptor/ Resource (or group of Receptors) | Approx Chainage | Residual Environmental Effect | | | | Significance of cumulative effect |
|---|---|---|---|---|---|---|---|
| | | | Noise / Vibration | Air Quality | Visual | Land take | |
| 2 | Newtownstewart | 38400-39800 | It has been concluded there would be no significant effects associated with construction related noise and vibration.<br><br>Likely to experience short and long term major adverse impacts in traffic related noise following completion of the Scheme. | It has been concluded there would be no significant effects associated with air quality during construction or operation. | Likely to experience significant adverse construction impact.<br>Likely to experience minor adverse visual impact during operation. | Receptors within the red line boundary will experience adverse impacts as a result of land take. | Adverse (Minor) |
| 2 | South west of Newtonstewart | 39250-39800 | It has been concluded there would be no significant effects associated with construction or operational related noise and vibration. | It has been concluded there would be no significant effects associated with air quality during construction or operation. | Likely to experience significant adverse construction impact.<br><br>Likely to experience minor and | Receptors within the red line boundary will experience adverse impacts as a result of land take. | Adverse (Minor) |

| Proposed Scheme Phase | Location of Human Receptor/ Resource (or group of Receptors) | Approx Chainage | Residual Environmental Effect | | | | Significance of cumulative effect |
|---|---|---|---|---|---|---|---|
| | | | Noise / Vibration | Air Quality | Visual | Land take | |
| | | | | | moderate adverse visual impact during operation. | | |
| 2 | Properties west of Sperrin Area of Outstanding Natural Beauty | 44000 | It has been concluded there would be no significant effects associated with construction or operational related noise and vibration. | It has been concluded there would be no significant effects associated with air quality during construction or operation. | Likely to experience significant adverse construction impact.<br><br>Likely to experience minor adverse visual impact during operation. | Receptors within the red line boundary will experience adverse impacts as a result of land take. | Adverse (Not Significant) |
| 2 | Mountjoy | 47000-47750 | It has been concluded there would be no significant effects associated with construction related noise and vibration. | It has been concluded there would be no significant effects associated with air quality during construction or operation. | Likely to experience significant adverse construction impact.<br><br>Likely to experience minor adverse | Receptors within the red line boundary will experience adverse impacts as a result of land take. | Adverse (Minor) |

| Proposed Scheme Phase | Location of Human Receptor/ Resource (or group of Receptors) | Approx Chainage | Residual Environmental Effect | | | | Significance of cumulative effect |
|---|---|---|---|---|---|---|---|
| | | | Noise / Vibration | Air Quality | Visual | Land take | |
| | | | Likely to experience short – term major adverse impacts in traffic related noise following completion of the Scheme. | | visual impact during operation. | | |
| 2 | Fairywater Flyover | 50100-50400 | It has been concluded there would be no significant effects associated with construction or operational related noise and vibration. | It has been concluded there would be no significant effects associated with air quality during construction or operation. | Likely to experience minor adverse visual impact during operation. | Receptors within the red line boundary will experience adverse impacts as a result of land take. | Adverse (Not Significant) |
| 2 | Earthworks north of Gillygooley Road | 50700 | It has been concluded there would be no significant effects associated with construction or operational related noise and vibration. | It has been concluded there would be no significant effects associated with air quality during construction or operation. | Likely to experience significant adverse construction impact.<br><br>Likely to experience | Receptors within the red line boundary will experience adverse impacts as a result of land take. | Adverse (Minor) |

| Proposed Scheme Phase | Location of Human Receptor/ Resource (or group of Receptors) | Approx Chainage | Residual Environmental Effect | | | | Significance of cumulative effect |
|---|---|---|---|---|---|---|---|
| | | | Noise / Vibration | Air Quality | Visual | Land take | |
| | | | | | minor and moderate adverse visual impact during operation. | | |
| 2 | Omagh | 53000-54500 | It has been concluded there would be no significant effects associated with construction related noise and vibration.<br><br>Some receptors likely to experience short and long term major adverse impacts in traffic related noise following completion of the Scheme. | It has been concluded there would be no significant effects associated with air quality during construction or operation. | Likely to experience significant adverse construction impact.<br><br>Likely to experience minor adverse visual impact during operation. | Receptors within the red line boundary will experience adverse impacts as a result of land take. | Adverse (Minor) |

| Proposed Scheme Phase | Location of Human Receptor/ Resource (or group of Receptors) | Approx Chainage | Residual Environmental Effect | | | | Significance of cumulative effect |
|---|---|---|---|---|---|---|---|
| | | | Noise / Vibration | Air Quality | Visual | Land take | |
| 2 | Earthworks north of Beagh Road | 54750-55200 | It has been concluded there would be no significant effects associated with construction or operational related noise and vibration. | It has been concluded there would be no significant effects associated with air quality during construction or operation. | Likely to experience significant adverse construction impact.<br><br>Likely to experience moderate adverse visual impact during operation. | Receptors within the red line boundary will experience adverse impacts as a result of land take. | Adverse (Minor) |
| 2 | Beagh Road | 55500 | It has been concluded there would be no significant effects associated with construction or operational related noise and vibration. | It has been concluded there would be no significant effects associated with air quality during construction or operation. | Likely to experience significant adverse construction impact.<br><br>Likely to experience minor and moderate adverse visual impact during operation. | Receptors within the red line boundary will experience adverse impacts as a result of land take. | Adverse (Minor) |

| Proposed Scheme Phase | Location of Human Receptor/ Resource (or group of Receptors) | Approx Chainage | Residual Environmental Effect | | | | Significance of cumulative effect |
|---|---|---|---|---|---|---|---|
| | | | Noise / Vibration | Air Quality | Visual | Land take | |
| 2 | Drumragh River Crossing | 56500 | It has been concluded there would be no significant effects associated with construction or operational related noise and vibration. | It has been concluded there would be no significant effects associated with air quality during construction or operation. | Likely to experience minor adverse visual impact during operation. | Receptors within the red line boundary will experience adverse impacts as a result of land take. | Adverse (Not Significant) |
| 1B | South Doogary | 62400-62800 | It has been concluded there would be no significant effects associated with construction or operational related noise and vibration. | It has been concluded there would be no significant effects associated with air quality during construction or operation. | Likely to experience significant adverse construction impact.<br><br>Likely to experience minor and moderate adverse visual impact during operation. | Receptors within the red line boundary will experience adverse impacts as a result of land take. | Adverse (Minor) |

| Proposed Scheme Phase | Location of Human Receptor/ Resource (or group of Receptors) | Approx Chainage | Residual Environmental Effect | | | | Significance of cumulative effect |
|---|---|---|---|---|---|---|---|
| | | | Noise / Vibration | Air Quality | Visual | Land take | |
| 1B | Drumconelly Road | 64000-64700 | It has been concluded there would be no significant effects associated with construction or operational related noise and vibration. | It has been concluded there would be no significant effects associated with air quality during construction or operation. | Likely to experience significant adverse construction impact.<br><br>Likely to experience minor adverse visual impact during operation. | Receptors within the red line boundary will experience adverse impacts as a result of land take. | Adverse (Not Significant) |
| 1B | Satellite Compound north of Rarone Road | 66000-66500 | It has been concluded there would be no significant effects associated with construction or operational related noise and vibration. | It has been concluded there would be no significant effects associated with air quality during construction or operation. | Likely to experience significant adverse construction impact.<br><br>Likely to experience minor, moderate and large adverse visual impact during operation. | Receptors within the red line boundary will experience adverse impacts as a result of land take. | Adverse (Minor) |

| Proposed Scheme Phase | Location of Human Receptor/ Resource (or group of Receptors) | Approx Chainage | Residual Environmental Effect | | | | Significance of cumulative effect |
|---|---|---|---|---|---|---|---|
| | | | Noise / Vibration | Air Quality | Visual | Land take | |
| 1B | Rarone Road and Aughter Point Road | 66750-67200 | It has been concluded there would be no significant effects associated with construction or operational related noise and vibration. | It has been concluded there would be no significant effects associated with air quality during construction or operation. | Likely to experience very large adverse construction impact.<br><br>Likely to experience minor adverse visual impact during operation. | Receptors within the red line boundary will experience adverse impacts as a result of land take. | Adverse (Not Significant) |
| 1B | Moylagh | 68500-69000 | It has been concluded there would be no significant effects associated with construction or operational related noise and vibration. | It has been concluded there would be no significant effects associated with air quality during construction or operation. | Likely to experience significant adverse construction impact.<br><br>Likely to experience minor, moderate and major adverse visual impact during operation. | Receptors within the red line boundary will experience adverse impacts as a result of land take. | Adverse (Minor) |

| Proposed Scheme Phase | Location of Human Receptor/ Resource (or group of Receptors) | Approx Chainage | Residual Environmental Effect | | | | Significance of cumulative effect |
|---|---|---|---|---|---|---|---|
| | | | Noise / Vibration | Air Quality | Visual | Land take | |
| 1B | Routing Burn Crossing | 71750 | It has been concluded there would be no significant effects associated with construction or operational related noise and vibration. | It has been concluded there would be no significant effects associated with air quality during construction or operation. | Likely to experience significant adverse construction impact.<br><br>Minor and moderate adverse visual impact during operation. | Receptors within the red line boundary will experience adverse impacts as a result of land take. | Adverse (Minor) |
| 1B | Newtownsaville | 73500-74000 | It has been concluded there would be no significant effects associated with construction related noise and vibration.<br><br>Likely to experience short – term major adverse impacts in traffic related noise following | It has been concluded there would be no significant effects associated with air quality during construction or operation. | Likely to experience significant adverse construction impact.<br>Likely to experience minor, moderate and major adverse visual impact during operation. | Receptors within the red line boundary will experience adverse impacts as a result of land take. | Adverse (Moderate) |

| Proposed Scheme Phase | Location of Human Receptor/ Resource (or group of Receptors) | Approx Chainage | Residual Environmental Effect | | | | Significance of cumulative effect |
|---|---|---|---|---|---|---|---|
| | | | Noise / Vibration | Air Quality | Visual | Land take | |
| | | | completion of the Scheme. | | | | |
| 1B | West of Tycanny Hill | 77100-77400 | It has been concluded there would be no significant effects associated with construction or operational related noise and vibration. | It has been concluded there would be no significant effects associated with air quality during construction or operation. | Likely to experience significant adverse construction impact.<br><br>Likely to experience moderate and major adverse visual impact during operation. | Receptors within the red line boundary will experience adverse impacts as a result of land take. | Adverse (Minor) |
| 1B | Earthworks north of Glenhoy Road | 79600 | It has been concluded there would be no significant effects associated with construction or operational related noise and vibration. | It has been concluded there would be no significant effects associated with air quality during construction or operation. | Likely to experience minor adverse visual impact during operation. | Receptors within the red line boundary will experience adverse impacts as a result of land take. | Adverse (Not Significant) |

| Proposed Scheme Phase | Location of Human Receptor/ Resource (or group of Receptors) | Approx Chainage | Residual Environmental Effect | | | | Significance of cumulative effect |
|---|---|---|---|---|---|---|---|
| | | | Noise / Vibration | Air Quality | Visual | Land take | |
| | | | | | | | |
| 1B | Area surrounding Glenhoy Road | 80000-80400 | It has been concluded there would be no significant effects associated with construction or operational related noise and vibration. | It has been concluded there would be no significant effects associated with air quality during construction or operation. | Likely to experience significant adverse construction impact.<br><br>Likely to experience minor, moderate and large adverse visual impact during operation. | Receptors within the red line boundary will experience adverse impacts as a result of land take. | Adverse (Minor) |
| 1B | Junction 15 - Ballygawley | 83100-84400 | It has been concluded there would be no significant effects associated with construction or operational related noise and vibration. | It has been concluded there would be no significant effects associated with air quality during construction or operation. | Likely to experience significant adverse construction impact.<br><br>Likely to experience | Receptors within the red line boundary will experience adverse impacts as a result of land take. | Adverse (Minor) |

| Proposed Scheme Phase | Location of Human Receptor/ Resource (or group of Receptors) | Approx Chainage | Residual Environmental Effect | | | | Significance of cumulative effect |
|---|---|---|---|---|---|---|---|
| | | | Noise / Vibration | Air Quality | Visual | Land take | |
| | | | | | minor and moderate adverse visual impact during operation. | | |
| 3 | South of Lisginny | 86700 | It has been concluded there would be no significant effects associated with construction or operational related noise and vibration. | It has been concluded there would be no significant effects associated with air quality during construction or operation. | Likely to experience significant adverse construction impact.<br><br>Likely to experience major adverse visual impact during operation. | Receptors within the red line boundary will experience adverse impacts as a result of land take. | Adverse (Minor) |
| 3 | Junction 16 – Aughnacloy North | 88400 | It has been concluded there would be no significant effects associated with construction or operational related noise and vibration. | It has been concluded there would be no significant effects associated with air quality during construction or operation. | Likely to experience significant adverse construction impact.<br><br>Likely to experience | Receptors within the red line boundary will experience adverse impacts as a result of land take. | Adverse (Minor) |

| Proposed Scheme Phase | Location of Human Receptor/ Resource (or group of Receptors) | Approx Chainage | Residual Environmental Effect | | | | Significance of cumulative effect |
|---|---|---|---|---|---|---|---|
| | | | Noise / Vibration | Air Quality | Visual | Land take | |
| | | | | | minor and major adverse visual impact during operation. | | |
| 3 | East of Aughnacloy | 92200 | It has been concluded there would be no significant effects associated with construction or operational related noise and vibration. | It has been concluded there would be no significant effects associated with air quality during construction or operation. | Likely to experience significant adverse construction impact.<br><br>Likely to experience slight and moderate adverse visual impact during operation. | Receptors within the red line boundary will experience adverse impacts as a result of land take. | Adverse (Minor) |

# TABLE D2 – LIST OF DEVELOPMENTS CONSIDERED FOR CUMULATIVE EFFECTS

| Other Committed Development considered in Cumulative Effects | Application reference number | Description | Scoped in or out | Justification for inclusion on 2019 ESA |
|---|---|---|---|---|
| Lifford Strabane Riverine Project. | J/2013/0281/RM | Construction of spine access road, internal circulation and service roads, upgrade of Lifford Road roundabout, new pedestrian facilities and undertake ancillary site works. | In | Adjacent to the Proposed Scheme. |
| Three Rivers Development. | J/2011/0433/O | Major mixed use cross border development to include an Employment and Learning Campus; Tourism Developments including Riverine Wetland Park; Pedestrian Bridge and Linear Park; Community Facilities and Commercial Retail Park. | In | Included in 2016 ES. |
| N14/15 to A5 Link Road. | No application number | New link road from the A5WTC at Junction 7 to the existing N15 in County Donegal. This would include the construction of a new multi-span structure across the Finn River and associated floodplain. | In | Included in 2016 ES. |
| North West Greenway Network (Route 3). | LA11/2018/1109/F | Construction of a 3m wide (width may vary as shown on the drawings) shared pedestrian and cyclist Greenway Path at Strabane By Pass (A5), and the widening of existing path infrastructure at Derry Road, Canal Basin, John Wesley Street and Main Street, Strabane, to provide the 3m wide (width may vary) Greenway. | In | Adjacent to the Proposed Scheme. |
| Quarrying in the Townland of Urbalreagh. | LA11/2018/0226/F | Application includes retention of works carried out at sand & gravel quarry, with associated works and access. Proposed western and southern extensions to previously extracted areas as well as a new haul road and realignment of existing internal road. | In | Adjacent to / within the Proposed Scheme footprint. |

| Other Committed Development considered in Cumulative Effects | Application reference number | Description | Scoped in or out | Justification for inclusion on 2019 ESA |
|---|---|---|---|---|
| Lands 220 NW of No. 30 Baronscourt Road Newtownstewart (extension of time period of quarrying activities) | LA11/2016/0582/F | Variance of conditions 1 & 11 on planning approval J/2006/1066/F to allow an extension of time for extraction until 2024. | In | In proximity to the Proposed Scheme. |
| Gold Mine at Southern Edge of Sperrin Mountains | LA10/2017/1249/F | Underground valuable minerals mining and exploration including new portal (tunnel entrance), decline (ramp), paste backfill plant, secure explosives store, fuelling and small service maintenance facilities, refuge stations and ancillary infrastructure, mine workings and paste backfill and waste rock placed in the workings. | In | Located approximately 17km east of the Proposed Scheme but scoped in due to nature of works. |
| Lisanelly College, Omagh. | LA10/2016/0711/RM | Development of five core school buildings, shared facilities, sports pitches, associated ancillary accommodation, cycle parking areas, car and bus parking areas, associated site preparation, ancillary works and access points to Gortin Road and Strathroy Road. | In | In proximity to the Proposed Scheme. |
| Masterplan for Land Adjacent to Junction 7, Urney Road, Carricklee. | No application number | Development of the land adjacent to Junction 7 on Urney Road into a park as part of a masterplan commission. | In | Adjacent to the Proposed Scheme. |
| Strathroy Link. | No application number | New single-carriageway link road connecting the B48 Derry Road to U1526 Strathroy Road. | In | In proximity to the Proposed Scheme. |

| Other Committed Development considered in Cumulative Effects | Application reference number | Description | Scoped in or out | Justification for inclusion on 2019 ESA |
|---|---|---|---|---|
| Poultry Shed, 116 Caledon Road, Aughnacloy. | LA09/2016/1760/F | Additional free range poultry shed with 2no feed bins and a storage shed (poultry shed to contain 16,000 free range egg laying hens giving a total site capacity of 32,000 free range egg laying hens). | In | In proximity to the Proposed Scheme. |
| Henhouse, Carnteel Road, Aughnacloy. | LA09/2017/0757/F | Proposed free range henhouse (layers) max 10000 birds with 2 meal bins and litter shed. | In | In proximity to the Proposed Scheme. |
| Poultry Sheds, 43 Errigal Road, Ballygawley. | LA09/2018/1617/F | Proposed 1 no. additional broiler breeder laying poultry shed including link to existing with 2 no. additional feed bins and associated site works, (New Shed to contain 8000 egg laying hens and 800 roosters, taking the total site capacity to 29000 egg laying hens and 2900 Roosters). | In | In proximity to the Proposed Scheme. |
| Poultry Shed, Crevenagh Road, Omagh. | LA10/2016/0973/F | Proposed free range poultry shed with 2no feed bins and a standby generator building (Poultry shed to contain 16000 free range egg laying hens). | In | In proximity to the Proposed Scheme. |
| Housing Development, Beltany Grove, Omagh. | LA10/2017/0257/F | Proposed housing development comprising of 16 no. two storey dwellings, 2 no. detached garages and associated works. | In | In proximity to the Proposed Scheme. |
| Anaerobic Digestion Plant, Doogary Road, Omagh. | LA10/2017/1193/F | Proposed development of a 500Kw centralised anaerobic digestion plant, combine heat and power plant (CHP), wheel wash, weighbridge, equipment store, silage clamps, new access and ancillary equipment and site works (additional information including Air Quality Analysis, | In | Adjacent to the Proposed Scheme. |

| Other Committed Development considered in Cumulative Effects | Application reference number | Description | Scoped in or out | Justification for inclusion on 2019 ESA |
|---|---|---|---|---|
| | | Roads and satellite farm info, Odour info, Technical data and covering letters). | | |
| Housing Development, Tamlaght Road, Omagh. | LA10/2018/0217/F | Proposed housing development consisting of 25 no. dwellings (14 no. semi-detached and 11 no. detached), amenity space, landscaping, vehicle/pedestrian access with associated site works (Amended Scheme). | In | In proximity to the Proposed Scheme. |
| Housing Development, Bradley's Way, Strabane. | LA11/2016/0663/F | Demolition of 2 no partially constructed dwelling houses constructed under permission J/2004/0074/F and construction of 23 no dwelling houses consisting of 5 no detached and 18 no semi detached together with relocation of existing housing development entrance granted under J/2004/0074/f (Amended plans and additional information received). | In | In proximity to the Proposed Scheme. |
| Land at Former IAWS, Woodside Road, Newbuildings. | LA11/2019/0007/RM | Demolition of existing buildings, site remediation, repositioning of existing vehicular access on Woodside Road and the erection of 71 residential units and associated car parking provided both in-curtilage and on-street, together with the provision of centrally located public open space. This application seeks permission for an amended layout to that approved under Outline Planning Permission ref: LA11/2016/0753/O. | In | Adjacent to the Proposed Scheme. |
| Former Strabane Hospital, Derry Road, Strabane. | LA11/2017/0299/F | Proposed private housing development consisting of 24 Semi Detached dwellings and associated roads. | In | In proximity to the Proposed Scheme. |

| Other Committed Development considered in Cumulative Effects | Application reference number | Description | Scoped in or out | Justification for inclusion on 2019 ESA |
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| Sites 10 – 19 Victoria Meadows, Magheramason. | LA11/2017/0996/F | Erection of 10 dwellings (Change of house types on sites 10-19). No change has been made to the existing PSD determined road layout. | In | In proximity to the Proposed Scheme. |
| Housing Development, Tullyvar Road, Aughnacloy. | M/2015/0097/F | Housing development consisting of 40 units of detached semi detached terrace apartments state road and foul water treatment plant. | In | In proximity to the Proposed Scheme. |
| Residential Development, lands to the east of 1 – 3 Lismore Park, Sion Mills. | LA11/2017/1064/F | Proposed housing development consisting of 7 no. 4 person 2 bedroom general needs houses, 3 no. 2 person 1 bedroom general needs apartments, 2 no. 5 person 3 bedroom general needs houses, 1 no. 5 person 3bedroom complex needs house and 1 no. 3 person 2 bedroom complex needs house. | In | In proximity to the Proposed Scheme. |
| Residential Development, site at Victoria Meadows, Magheramason. | LA11/2016/0590/F | Erection of 14 dwellings (amendment to previously approved housing layout approved under J/2007/0200/F reducing proposed numbers by 5 dwellings). | In | In proximity to the Proposed Scheme. |
| Wind Turbine, Strahans Road, Strabane. | LA11/2015/0572/F | Erection of wind turbine with 40m hub height and 54m rotor diameter. | In | In proximity to the Proposed Scheme. |
| Freestand Restaurant, Junction of Railway Street and Park Road, Strabane. | LA11/2015/0423/F | Erection of a freestand restaurant with associated drive thru car parking landscaping and associated works. Installation of 2no. COD with associated canopies and external play area. | In | In proximity to the Proposed Scheme. |

| Other Committed Development considered in Cumulative Effects | Application reference number | Description | Scoped in or out | Justification for inclusion on 2019 ESA |
|---|---|---|---|---|
| Synthetic Football Pitch, lands south east of Mountjoy United FC, Lisnagirr Road, Omagh. | LA10/2016/1289/F | Proposed Development of Synthetic Football Pitch, New Car Park, External Lighting and Associated Ancillary Works (amended plans). | In | In proximity to the Proposed Scheme. |
| Residential Development, Newtownsaville Road, Omagh. | K/2014/0497/F | Proposed development of 11 no. detached dwellings including garages plus associated works. | In | In proximity to the Proposed Scheme. |
| Hazardous Substances. | A_2011_0686_HSC | No information available. | Out | Included in 2016 ES. but no information available. |
| Bunderg Road Powerline Spur. | J/2013/0048/F | Overhead power line development consisting of a 11Kw rural spur adjacent to 41 Bunderg Road, Newtonstewart. | Out | Included in 2016 ES but has since been constructed. |
| Bunderg Road Wind Turbine. | J/2011/0269/F | 250kw wind turbine to the north of Bunderg Road to serve a farm. | Out | Included in 2016 ES. Permission since refused. |
| Strabane Footbridge. | J/2008/0612/F; and J/2011/0381/F | Footbridge linking Meeting House Street with recreation grounds at Melvin Strabane, 350m south east of Strabane Bridge; and<br>Alteration to planning conditions no.s 2 & 4 of J/2008/0612/F. | Out | Included in 2016 ES but has since been constructed. |
| Momeen Wind Turbines. | LA11/2018/0937/TBA | Six no. wind turbines with an overall blade tip height of up to 135 metres and all associated foundations and hard standing areas. Other development includes upgrade of existing and provision of new site access roads and associated drainage, construction of electrical substation | Out | Not deemed to have potential cumulative impacts due to distance and location. |

| Other Committed Development considered in Cumulative Effects | Application reference number | Description | Scoped in or out | Justification for inclusion on 2019 ESA |
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| | | compound and underground cabling to facilitate electrical connection to the national grid. | | |
| High and Intermediate Pressure Gas Pipelines | LA08/2016/1328/F | Construction of an underground gas pipe line and associated infrastructure comprising: a new 85 bar High Pressure (HP) cross-country gas transmission pipeline, approximately 78km in length and varying between 300-400mm diameter; New Intermediate Pressure (IP) gas pipelines, (approximately 107km and varying between 250-315mm diameter) laid primarily in the public road, 7 Above Ground Installations (AGI) and 8 District Pressure Governors (DPG); temporary ancillary development comprising temporary construction compounds, temporary pipe storage areas and temporary construction accesses. | Out | Constructed in 2018. |
| OH Wooden Poles. | LA09/2017/0648/F; and LA09/2016/1424/F | Construction of a new 33kV overhead powerline of wood pole heavey construction with 3x200mm AAAC conductor and oppc fibre approximately 2.91km in length; and<br>Section of Overhead Line, starting 180 m east of 196 Omagh Road,Garvaghy, Co Tyrone, BT70 2DV and heading in a south west direction towards 24 Knockmany Road, Augher. | Out | Type of development will not result in cumulative effects. |
| Omagh Hospital. | K/2012/0260/F | New enhanced local hospital, incorporating a range of health services, car parking, emergency heli-pad, and associated site works at lands forming part of Tyrone and Fermanagh Hospital Complex 1 Donaghanie Road Omagh. | Out | Omagh Hospital has already been constructed. |
| Retail Outlet, Newbuildings. | LA11/2018/1200/F | Proposed provision of a single storey store to gable of existing retail outlet. | Out | Type of development/works will not result in cumulative effects. |

| Other Committed Development considered in Cumulative Effects | Application reference number | Description | Scoped in or out | Justification for inclusion on 2019 ESA |
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| Dwelling & Garage Extension, 108 Stoneypath, Derry. | LA11/2018/0604/F | Proposed first floor extension to dwelling & garage. | Out | Type of development/works will not result in cumulative effects. |
| Semi-detached Dwellings, 74 Victoria Road, Newbuildings. | LA11/2018/0058/F | Proposed 4 no. 2 storey semi-detached dwellings with parking and associated works. | Out | Development considered too small for cumulative effects. |
| Single Storey Extension, 22 Foyle Crescent, Newbuildings. | LA11/2018/0619/F | Proposed single storey rear extension. | Out | Type of development/works will not result in cumulative effects. |
| Single Storey Extension, 23 Foyle Crescent, Newbuildings. | LA11/2018/1159/F | Single storey rear extension to dwelling. | Out | Type of development/works will not result in cumulative effects. |
| Extension Works, 2 Ballyorr Drive, Newbuildings. | LA11/2017/1007/F | New single storey rear extension to replace existing storey flat roof extension, reconfiguration of 1st floor windows to existing dwelling and extension to existing single storey garage. | Out | Type of development/works will not result in cumulative effects. |
| Commercial Units Use Change, Units 4 & 6 Ballyore Business Park. | LA11/2018/0038/F | Change of use from commercial business units to provide tile showroom, storage and distribution in units 4&6 with ancillary sales in unit 6. | Out | Type of development/works will not result in cumulative effects. |
| Industrial Unit Use Change, Unit 1 Ballyore Business Park. | LA11/2018/0042/F | Change of use from industrial unit to provide dog grooming business. | Out | Type of development/works will not result in cumulative effects. |

| Other Committed Development considered in Cumulative Effects | Application reference number | Description | Scoped in or out | Justification for inclusion on 2019 ESA |
|---|---|---|---|---|
| PVC Banner, 89c Ballyore Industrial Estate, Newbuildings. | LA11/2017/1097/A | PVC Banner on 2 walls (fixed with studs). | Out | Type of development/works will not result in cumulative effects. |
| Two Storey Rear and Front Extensions, 115 Victoria Road Magheramason. | LA11/2017/0061/F | Proposed 2 storey rear and front extension to existing detached 2 storey dwelling. | Out | Type of development/works will not result in cumulative effects. |
| Sites 24 & 25 Victoria Meadows, Magheramason. | LA11/2018/1094/F | Proposed change of house type on sites 24 & 25 from 2 no. 2.5 storey dwellings with adjoining link to 2 no. detached 2.5 storey dwellings. | Out | Type of development/works will not result in cumulative effects. |
| Dwelling and Garage Development, lands between 32 and 34 Dunnalong Road, L'Derry. | LA11/2018/1142/O | Proposed site for detached dwelling and garage. | Out | Type of development/works will not result in cumulative effects. |
| Dwelling Replacement, site 170m north east of 188 Victoria Road, Bready. | LA11/2017/0975/F | Proposed 2 storey detached replacement dwelling. | Out | Type of development/works will not result in cumulative effects. |
| Livestock Shed Development, land adjacent and to the east of 18 Cloughboy Road, Strabane. | LA11/2017/0152/F | Proposed new livestock shed at existing farm. | Out | Development considered too small for cumulative effects. |
| Garage Works, site 25m east of 227 Victoria Road, Bready. | LA11/2016/0392/F | Proposed split level dwelling with integral garage. | Out | Development considered too small for cumulative effects. |
| Replacement Agricultural Farm Yard, site 289m south west of 33 Ballybeeny Road, Bready. | LA11/2016/0995/O | Proposed replacement agricultural farm yard. | Out | Type of development/works will not result in cumulative effects. |

| Other Committed Development considered in Cumulative Effects | Application reference number | Description | Scoped in or out | Justification for inclusion on 2019 ESA |
|---|---|---|---|---|
| Single Storey Extension, 5 Grange Road, Bready. | LA11/2018/0978/F | Single storey side extension to provide two additional bedrooms. | Out | Type of development/works will not result in cumulative effects. |
| Extension Works and Garage, 279 Victoria Road, L'derry. | LA11/2018/0411/F | Proposed first floor extension to rear of dwelling, car port to side of dwelling and a one and a half storey detached garage. | Out | Type of development/works will not result in cumulative effects. |
| Mobile Home Farm Dwelling Retention, site 140m north east of 8 Willow Road, Bready. | LA11/2017/0657/F | Retention of single storey mobile home farm dwelling (Temporary permission being sought for a period of 4 years). | Out | Application deemed refusal. |
| Two Storey Extension, 308 Victoria Road, Strabane. | LA11/2016/0147/F | Erection of two storey extension to allow bigger kitchen with extra bedroom on top (above). | Out | Type of development/works will not result in cumulative effects. |
| Cluster Dwelling Development, lands at rear of no. 320 Victoria Road, Burndennet. | LA11/2017/0775/O | Proposed site for cluster dwelling under policy CTY 2A of PPS21. | Out | Development considered too small for cumulative effects. |
| Single Storey Extension, 8 Dennet View, Burndennet. | LA11/2017/0524/F | Single storey rear extension to dwelling. | Out | Type of development/works will not result in cumulative effects. |
| Single Storey Extension, 36 Ballyheather Road, Ballymagorry. | LA11/2018/0844/F | Single story rear and side extensions to house. | Out | Type of development/works will not result in cumulative effects. |
| Two Storey Traditional Farmhouse, 390 Victoria Road, Ballymagorry. | LA11/2016/0350/F | Insitu replacement two storey traditional farmhouse using existing access. | Out | Type of development/works will not result in cumulative effects. |

| Other Committed Development considered in Cumulative Effects | Application reference number | Description | Scoped in or out | Justification for inclusion on 2019 ESA |
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| Farm Dwelling and Garage, site 110m north of Fox Lodge Cricket Club, Ballymagorry. | LA11/2017/0611/RM | Site for dwelling and garage on a farm. | Out | Type of development/works will not result in cumulative effects. |
| Infill Dwelling and Garage, site adjacent to 74 Park Road, Ballymagorry. | LA11/2017/0383/F | Infill dwelling and garage. | Out | Development considered too small for cumulative effects. |
| Rear Extension, 41 Park Road, Strabane. | LA11/2018/1130/F | Proposed rear extension to dwelling with minor internal alterations. | Out | Type of development/works will not result in cumulative effects. |
| Extension Works, 51 Woodend Road, Strabane. | LA11/2016/0341/F | Proposed one and a half storey extension to rear and side of dwelling with domestic garage/store and ancillary accommodation. | Out | Type of development/works will not result in cumulative effects. |
| Dwelling Development, lands between 11 and 13 Berryhill Road, Ballymagorry. | LA11/2018/0316/RM | Proposed dwelling (ridge height 7.5M.) and domestic garage. | Out | Development considered too small for cumulative effects. |
| Roadside Service Station Development, lands to the north east (and adjacent to) 46 Woodend Road, Ballymagorry. | LA11/2017/0461/O | Site for roadside service station to provide fuel for cars and lorries and other associated services. | Out | Development considered too small for cumulative effects. |
| New Dwelling and Garage, 46 Woodend Road, Strabane. | LA11/2016/0152/F | New dwelling and garage (retention of). | Out | Development considered too small for cumulative effects. |
| Dwelling and Garage, site adjacent to and south east of 61 Woodend Road, Strabane. | LA11/2018/0698/O | Proposed erection of dwelling and domestic garage. | Out | Development considered too small for cumulative effects. |

| Other Committed Development considered in Cumulative Effects | Application reference number | Description | Scoped in or out | Justification for inclusion on 2019 ESA |
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| Single Storey Extension, 24 Glenside, Strabane. | LA11/2018/0333/F | Single storey rear extension. | Out | Type of development/works will not result in cumulative effects. |
| Extension and Window Works, 44 Glenside, Strabane. | LA11/2017/0556/F | Proposed single storey extension to rear of dwelling and provision of bay window to front of dwelling. | Out | Type of development/works will not result in cumulative effects. |
| Two Storey Extension, 39a Glenside, Strabane. | LA11/2016/0154/F | Proposed two storey extension to southwest side of dwelling incorporating study, dining room, extension on ground floor and new bathroom, extension to front bedroom with ensuite and conversion of existing bathroom into ensuite to serve existing rear bedroom. | Out | Type of development/works will not result in cumulative effects. |
| Extension and Window Works, 53 Glenside, Strabane. | LA11/2018/0143/F | Single storey extension to rear and proposed bay window/canopy to front elevation. | Out | Type of development/works will not result in cumulative effects. |
| Dwelling and Garage, land to the rear of 74 Derry Road, Strabane. | LA11/2017/0236/F | Proposed new dwelling and domestic garage. | Out | Development considered too small for cumulative effects. |
| New Dwelling Development, land to rear of 70 & 72 Derry Road, Strabane. | LA11/2016/0608/F | Proposed new dwelling. | Out | Development considered too small for cumulative effects. |
| Wastewater Treatment Works, 24 Park Road, Strabane. | LA11/2018/1008/F | Construction and replacement of the preliminary treatment of wastewater treatment works. This includes the addition of submersible pumps, screw pumps and screens. | Out | Type of development/works will not result in cumulative effects. |

| Other Committed Development considered in Cumulative Effects | Application reference number | Description | Scoped in or out | Justification for inclusion on 2019 ESA |
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| Two Storey Extension and Alterations,<br>75 Derry Road, Strabane. | LA11/2016/0618/F | 2 storey extension to rear of dwelling and alterations to existing. | Out | Type of development/works will not result in cumulative effects. |
| Extension Works, 25 Tulacorr Gardens, Strabane. | LA11/2016/0043/F | Retention of Single-Storey Rear Extension and Proposed 2-Storey Side Extension to Provide Additional Living Space. | Out | Type of development/works will not result in cumulative effects. |
| Demolition and Extension, 49 Derry Road, Strabane. | LA11/2017/1037/F | Demolition of conservatory and proposed single storey extension to rear of dwelling (dining room). | Out | Type of development/works will not result in cumulative effects. |
| Demolition and Extension works, 42 Derry Road, Strabane. | LA11/2016/0416/F | Proposed demolition of existing dwelling to facilitate extension and alteration of existing supermarket (amended plan 03rev2) and site servicing details submitted). | Out | Type of development/works will not result in cumulative effects. |
| Sign Erection, location of New Council Boundary Sign c.45m from 47 Derry Road at DCSDC Offices, Strabane. | LA11/2017/0087/A | Freestanding sign indicating entry to Derry City & Strabane District Council Area. | Out | Application deemed refusal. |
| Lay-by Parking Removal, site of former Strabane Hospital, Derry Road, Strabane. | LA11/2016/0856/F | Amendment to private streets determination as approved under J/2006/0721/F, to remove lay-by parking adjacent to Strabane District Council Offices. | Out | Type of development/works will not result in cumulative effects. |
| Ambulance Garage Erection, lands adjacent to Strabane Ambulance Station and opposite Glenside Adult Training Centre Derry Road, Strabane. | LA11/2017/0581/F | Erection of 3 bay ambulance garage. | Out | Development considered too small for cumulative effects. |

| Other Committed Development considered in Cumulative Effects | Application reference number | Description | Scoped in or out | Justification for inclusion on 2019 ESA |
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| Modular Building Works, Glenside ATC 45a Derry Road, Strabane. | LA11/2017/0762/F | Demolition of existing modular building and replacement with new enlarged modular building. | Out | Type of development/works will not result in cumulative effects. |
| Signage Upgrades, ASDA Strabane Superstore, 2 Branch Road, Strabane. | LA11/2016/0533/A | Illuminated signage to replace existing Replacement vinyl overlays Replacement mounted panels and twin post panels Totem reclad. | Out | Type of development/works will not result in cumulative effects. |
| Demolition and Replacement works, 17 Park Road, Strabane. | LA11/2016/0324/F | Demolition of existing single storey bungalow, including rear hall, utility, toilet and store and erection of replacement storey and half house with single storey hall, utility, w.c. and boiler house to rear. | Out | Type of development/works will not result in cumulative effects. |
| Storage Warehouse, canal link 55m north west / to rear of Tulach Na Greine, Derry Road, Strabane. | LA11/2018/0671/O | Proposed storage warehouse for electrical goods. | Out | Development considered too small for cumulative effects. |
| Signage Upgrades, location of New Council Boundary Sign c.107m from entrance to filling station, 19 Lifford Road, Strabane. | LA11/2017/0074/A | Freestanding sign indicating entry into Derry City & Strabane District Council Area. | Out | Application deemed refusal. |
| Extension Works, 19 Lifford Road, Strabane. | LA11/2017/0036/F | Proposed extension/alterations to restaurant and fast food take-a-way. Extension to kitchen/stores and new toilets. | Out | Type of development/works will not result in cumulative effects. |
| Flood Alleviation and Safety Fencing Installation, land immediately east of 19 Lifford Road, Strabane. | LA11/2016/0162/F | Installation of flood alleviation channel (retain site levels elsewhere), erection of safety fencing and undertake associated site works (temporary permission). | Out | Type of development/works will not result in cumulative effects. |

| Other Committed Development considered in Cumulative Effects | Application reference number | Description | Scoped in or out | Justification for inclusion on 2019 ESA |
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| Advertising Hoarding, 11 Lifford Road, Strabane. | LA11/2018/0608/A | 1 no. '48 sheet' advertising hoarding. | Out | Type of development/works will not result in cumulative effects. |
| Access Ramp & Steps and Existing Yard Alterations, Fire Station Railway Street, Strabane. | LA11/2017/0204/F | Construction of access ramp & steps, alterations to existing enclosed yard to rear to provide indoor gym facility. | Out | Type of development/works will not result in cumulative effects. |
| Vehicle Sales/Repairs Building Works, 195 Lower Main Street, Strabane. | LA11/2017/1081/F | Retention of unauthorised works comprising of vehicle sales/repairs building incorporating ground floor reception. Offices, stores, toilets, staff canteen and first floor store and office. Ground floor valeting/wash bay, 39pprox.39ng of existing hardstandings, closure of in site entrance, erection of new security fence/gates and associated works. | Out | Type of development/works will not result in cumulative effects. |
| Single Storey Extension, 143 Lower Main Street, Strabane. | LA11/2017/0444/F | Proposed single storey rear extension to dwelling. | Out | Type of development/works will not result in cumulative effects. |
| Extension and Roof Works, 143 Lower Main Street, Strabane. | LA11/2018/0173/F | Extension to rear of dwelling – change of roof type to that approved under LA11/2017/0444 – duo pitch changed to mono pitch. | Out | Type of development/works will not result in cumulative effects. |
| Extension and Enlargement Works, 19 Railway Street, Strabane. | LA11/2018/0889/F | Single storey extension to off licence to include demolition of rear wall and part side wall and enlargement of sales area with additional store, including ancillary facilities. | Out | Type of development/works will not result in cumulative effects. |
| Public Realm Improvements, several locations in and around Strabane. | LA11/2018/0015/F | Public realm improvements including resurfacing of footways with granite and concrete paving, granite kerbing, enhancements to street tree planting, street | Out | Type of development/works will not result in cumulative effects. |

| Other Committed Development considered in Cumulative Effects | Application reference number | Description | Scoped in or out | Justification for inclusion on 2019 ESA |
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| | | lighting and street furniture; demolition & removal of the public toilets in Market Street and the protruding wall at no 3 Railway Street; and a reconfiguration of the existing small embankments along Market Street adjacent to the Butcher street Car Park. | | |
| Residential Development, site immediately southeast of LIDL Store Bradley Way, Strabane. | LA11/2018/0281/F | 2 no additional 3 Bed Semi detached houses to be accessed via a non adopted private drive adjacent to the sites 9 & 10 Mourne Manor. | Out | Development considered too small for cumulative effects. |
| Projecting Signs Works, Strabane Bus Station Bradley Way, Strabane. | LA11/2018/0708/A | 2 no. projecting signs to bus station 1 no. totem sign to the site. | Out | Type of development/works will not result in cumulative effects. |
| Extension Works, 46 Carrick Strand, Strabane. | LA11/2018/0635/F | Proposed extension (sun lounge replacement) and external deck area. | Out | Type of development/works will not result in cumulative effects. |
| Single Storey Extension, 12 Lampton Court, Strabane. | LA11/2018/0307/F | Proposed single storey extension to rear of dwelling for new kitchen. | Out | Type of development/works will not result in cumulative effects. |
| Single Storey Extension and Alteration Works, 9 Carricklynn Avenue, Strabane. | LA11/2018/0920/F | Single storey rear extension together with internal alterations to existing dwelling house. | Out | Type of development/works will not result in cumulative effects. |
| One Storey Extension, 19 Carricklynn Avenue, Strabane. | LA11/2018/0502/F | Proposed one storey extension to existing dwelling. | Out | Type of development/works will not result in cumulative effects. |
| Conservatory and Garden Works, 40 Carricklynn Avenue, Strabane. | LA11/2016/0923/F | Retention of – conversion of conservatory to sunroom and proposed 1.8m high garden wall to east boundary. | Out | Type of development/works will not result in cumulative effects. |

| Other Committed Development considered in Cumulative Effects | Application reference number | Description | Scoped in or out | Justification for inclusion on 2019 ESA |
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| Single Storey Extension, 32 Carricklynn Ave, Strabane. | LA11/2018/0548/F | Proposed single storey rear extension. | Out | Type of development/works will not result in cumulative effects. |
| Window and Garage Works, 7 Jefferson Court, Strabane. | LA11/2016/0625/F | Proposed bay window and change from attached garage to playroom. | Out | Type of development/works will not result in cumulative effects. |
| Garage and Utility Room Works, 34 Castletown Court, Strabane. | LA11/2017/1148/F | Proposed detached garage and utility room. | Out | Type of development/works will not result in cumulative effects. |
| Sun Room and Bedroom Works, 62 Summerhill Court, Strabane. | LA11/2017/0125/F | Proposed sun room to rear elevation and additional first storey bedroom with en-suite to side elevation. | Out | Type of development/works will not result in cumulative effects. |
| Single Storey Extension, 41 Summerhill Court, Strabane. | LA11/2018/0801/F | Single storey rear extension to dwelling. | Out | Type of development/works will not result in cumulative effects. |
| Photovoltaic Ground Systems Development, lands approx. 140m to the north of 19 Strahans Road. | LA11/2017/0027/F | Proposed installation of 13 no photovoltaic ground systems providing 41 approx. 250KW of renewable energy. | Out | Type of development/works will not result in cumulative effects. |
| Single Storey Replacement, rear of 19 Strahans Road, Strabane. | LA11/2018/1203/F | Single storey replacement farm building. | Out | Type of development/works will not result in cumulative effects. |
| Access to AD Plant, 153 m. east of 19 Strahans Road, Strabane. | LA11/2017/0460/F | Proposed new access to existing approved AD plant. | Out | Type of development/works will not result in cumulative effects. |

| Other Committed Development considered in Cumulative Effects | Application reference number | Description | Scoped in or out | Justification for inclusion on 2019 ESA |
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| House Type Change, land between 9 and 11 Strathans Road, Strabane. | LA11/2016/0245/F | Change of house type from previously approved application. To include increase in ridge height of 500mm. | Out | Type of development/works will not result in cumulative effects. |
| Dwelling Upgrades and New Access, 14 Castletown Road, Strabane. | LA11/2017/0692/F | Adaptations to existing dwelling, provision of ramped access to front and rear doors into dwelling. | Out | Type of development/works will not result in cumulative effects. |
| Anaerobic Digester Feedstock Updates, west of Orchard Road Industrial Estate, Strabane. | LA11/2016/0432/F | An application under section 54 of the Planning Act (NI) 2011 to vary condition 2 of Planning permission J/2013/0285/F to include additional European waste catalogue (EWC) codes to be accepted as feedstock for an approved 500kw anaerobic digester at lands to the northeast of existing concrete works and west of Orchard Road Industrial Estate. Strabane. | Out | Type of development/works will not result in cumulative effects. |
| Reconfiguration and Extension to Building and Car Park, Allstate NI Strabane Orchard Road Industrial Estate. | LA11/2016/0722/F | Extension to existing building to create new entrance lobby area plus kitchen and canteen areas; internal reconfiguration of layout and provision of new mezzanine to accommodate additional staff. Reconfiguration of existing car parking spaces and provision of additional new spaces. | Out | Type of development/works will not result in cumulative effects. |
| Waste Storage, Frylite Ltd Orchard Road Industrial Estate, Strabane. | LA11/2018/0215/F | Variation of conditions within the existing planning permission ref: J/2010/0118/F namely: Condition 2: the addition of further EWC codes; and Condition 7 – removal of the restriction on the external storage of waste. | Out | Type of development/works will not result in cumulative effects. |
| Proposed Package Treatment Plant and Dwelling Extension and Conversion, 12 Knockroe Road, Strabane. | LA11/2018/0699/F | Proposed single storey rear extension and attic conversion to include additional windows to both sides of existing dwelling and proposed package treatment plant. | Out | Type of development/works will not result in cumulative effects. |

| Other Committed Development considered in Cumulative Effects | Application reference number | Description | Scoped in or out | Justification for inclusion on 2019 ESA |
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| New Dwelling and Existing Dwelling Change, 155m west of 14 Knockroe Road, Gallony, Strabane. | LA11/2017/1022/F | Erection of dwelling. Proposed (change of house type from that approved under J/1991/0081 single storey dwelling to chalet type dwelling). | Out | Development considered too small for cumulative effects. |
| Commercial Yard Shed Development, lands 65m. north east of no. 25 Orchard Road, Ballyfatten, Strabane. | LA11/2018/0096/F | Proposed erection of shed at established commercial yard to provide secure internal storage as a replacement for existing shipping containers on site. | Out | Type of development/works will not result in cumulative effects. |
| Factory Unit Development, site 3 Strabane Business Park Melmount Road Strabane. | LA11/2018/0364/F | Factory unit to manufacture modular buildings. | Out | Type of development/works will not result in cumulative effects. |
| Sun Room Demolition and Replacement, 15a Peacock Road, Sion Mills. | LA11/2017/0931/F | Demolition of existing rear sun room and replacement with larger sun room. | Out | Type of development/works will not result in cumulative effects. |
| Dwelling Demolition and Extension, 105 Melmount Road, Sion Mills, Strabane. | LA11/2017/0555/F | Demolition of the existing dwelling and erection of a new extension to the existing shop (to include retail space and store). | Out | Type of development/works will not result in cumulative effects. |
| Car Workshop Façade, 105 Melmount Road, Sion Mills. | LA11/2019/0076/F | Proposed new façade to front elevation of existing car workshop. | Out | Type of development/works will not result in cumulative effects. |
| New Dwellings, land south of 62 Primrose Park, Sion Mills, Strabane. | LA11/2018/0645/F | New dwellings comprising of 2 number 1&1/2 storey detached houses, one with a separate domestic garage. | Out | Development considered too small for cumulative effects. |

| Other Committed Development considered in Cumulative Effects | Application reference number | Description | Scoped in or out | Justification for inclusion on 2019 ESA |
|---|---|---|---|---|
| Extension Works, 52 Primrose Park, Sion Mills, Strabane. | LA11/2017/0812/F | Proposed two storey extension to existing dwelling incorporating utility room, shower room and sun room with improvements to existing kitchen/dining at ground floor level and two en-suite bedrooms at first floor level with associated alteration to part of the existing dwelling to provide access to same. | Out | Type of development/works will not result in cumulative effects. |
| New Dwellings Development, rear of 12 & 13 The Beeches & rear of 14 Ballyfatten Park, Sion Mills. | LA11/2018/1038/O | Proposed site for 4 no. semi detached dwellings. | Out | Development considered too small for cumulative effects. |
| Single Storey Extension, 18 Ballyfatten Park, Sion Mills. | LA11/2017/0281/F | Proposed single storey bedroom extension to rear of dwelling. | Out | Type of development/works will not result in cumulative effects. |
| Single Storey Extension, 5 Coronation Park, Sion Mills. | LA11/2016/0941/F | Proposed single storey rear bedroom extension to dwelling for disabled person. | Out | Type of development/works will not result in cumulative effects. |
| Rear Extension, 40 Sycamore Avenue, Sion Mills. | LA11/2018/0339/F | Rear extension to existing dwelling to provide bedroom and bathroom. | Out | Type of development/works will not result in cumulative effects. |
| Wood Pellet Storage Container Upgrade, 5 Sion Terrace, Sion Mills. | LA11/2018/1056/F | Retention of existing domestic metal shed containing heating boiler with wood pellet storage container behind at the rear garden. | Out | Type of development/works will not result in cumulative effects. |
| Dwelling Rear Extension, 38 Sycamore Avenue, Sion Mills. | LA11/2016/0071/F | Rear extension to dwelling. | Out | Type of development/works will not result in cumulative effects. |

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|---|---|---|---|---|
| Rear Extension Works, 10 Coronation Park, Sion Mills. | LA11/2017/0549/F | Provision of single storey rear extension incorporating a bedroom and shower room & ramp to front. | Out | Type of development/works will not result in cumulative effects. |
| Ramped Access and Internal Alterations, 18 Sperrin View, Glebe. | LA11/2018/1091/F | Proposed internal alterations to existing bathroom and addition of ramped access to front door. | Out | Type of development/works will not result in cumulative effects. |
| Single Storey Extension, 1 School Terrace, Glebe. | LA11/2018/0461/F | Single storey extensions to side and rear of existing dwelling. | Out | Type of development/works will not result in cumulative effects. |
| Single Storey Rear Extension, 7 School Terrace, The Glebe, Sion Mills. | LA11/2016/0766/F | Proposed single storey rear extension and associated works. | Out | Type of development/works will not result in cumulative effects. |
| Extension and Storage Shed Works, 14 School Terrace, Glebe. | LA11/2018/0171/F | Proposed extension to curtilage of existing dwelling and the erection of a detached storage shed for Domestic use tractor and associated machinery. | Out | Type of development/works will not result in cumulative effects. |
| Two Storey Dwelling, site adjacent to 21 Garden Road, Glebe. | LA11/2016/0466/F | Proposed 2 storey "clachan Style" dwelling on a farm. | Out | Development considered too small for cumulative effects. |
| Sunroom Works, 33 Garvan Park, Glebe. | LA11/2018/0092/F | Proposed sunroom to rear of dwelling. | Out | Type of development/works will not result in cumulative effects. |
| Extension and Dwelling Type Change, 22A Seein Road, Sion Mills. | LA11/2016/0980/F | Proposed extensions and change of use from dwelling to provide day care/nursery facilities. | Out | Type of development/works will not result in cumulative effects. |

| Other Committed Development considered in Cumulative Effects | Application reference number | Description | Scoped in or out | Justification for inclusion on 2019 ESA |
|---|---|---|---|---|
| Daycare/Nursery Extensions, 22A Seein Road, Sion Mills. | LA11/2017/0767/F | Proposed extensions to existing daycare/nursery facilities. | Out | Type of development/works will not result in cumulative effects. |
| Play Area Room Development, site 75m south east of no. 16 Fyfin Road, Victoria Bridge, Strabane. | LA11/2017/0442/F | The proposed development is for the erection of a single storey building ancillary to the existing play area. The building will be used by the local Community Association in Victoria Bridge. The purpose of the building is to play snooker, hold monthly meetings. | Out | Type of development/works will not result in cumulative effects. |
| Shop Unit Extension and Renovation, Devines Shop, 12 Fyfin Road, Victoria Bridge, Strabane. | LA11/2018/0392/F | Proposed extension/renovation of existing shop unit to provide off sales and café seating area, store and offices. | Out | Type of development/works will not result in cumulative effects. |
| New Broiler Breeder Poultry Houses, land 46 approx. 450m north of 102 Mulvin Road, Strabane. | LA11/2017/0955/F | Proposed 2no. Additional broiler breeder poultry houses with link to existing & 4no. Feed bins (to contain in total 16000 egg laying hens & 1600 roosters, giving a total site capacity of 35,200 birds). | Out | Type of development/works will not result in cumulative effects. |
| Replacement Dwelling, The Mount 38 Urbalreagh Road, Victoria Bridge, Strabane. | LA11/2018/0408/F | Replacement dwelling. | Out | Type of development/works will not result in cumulative effects. |
| Single Storey Extension and Internal Alterations, The Mount 38 Urbalreagh Road, Victoria Bridge, Strabane. | LA11/2016/0953/F | Proposed single storey extension to the side and rear of ex dwelling and internal alterations to layout. | Out | Type of development/works will not result in cumulative effects. |
| Dwelling demolition and Replacement Works, The Mount | LA11/2018/0144/F | Demolition of rear 2 storey return, to existing dwelling, and replacement with new extended part single part 2 storey | Out | Type of development/works will not result in cumulative effects. |

| Other Committed Development considered in Cumulative Effects | Application reference number | Description | Scoped in or out | Justification for inclusion on 2019 ESA |
|---|---|---|---|---|
| 38 Urbalreagh Road, Victoria Bridge, Strabane. | | rear return extension and internal alterations. (revised design to approval LA11/2016/0953/F). | | |
| Dwelling and Garage, Infill site between numbers 10 & 12 Derg Road, Victoria Bridge, Strabane. | LA11/2018/0958/O | One & half storey dwelling and domestic garage. | Out | Type of development/works will not result in cumulative effects. |
| Building Change of Use, 5-7 Millbrook Road, Newtownstewart. | LA11/2016/0221/F | Proposed change of use of tea room / restaurant to dwelling and change of use of caravan park service building / office to dwelling. | Out | Type of development/works will not result in cumulative effects. |
| Development of Two Storey Extension, 26 Deerpark Road, Newtownstewart. | LA11/2018/0153/F | Removal of existing single & two storey rear return and provision of new two-storey extension. | Out | Type of development/works will not result in cumulative effects. |
| Biodiesel Manufacture Updates, 200m NW of 26 Deerpark Road, Ardstraw. | LA11/2019/0087/F | Section 54 application to seek a variation of condition 2 of approval LA11/2018/0175/F to remove the restriction on European Waste Code 07 01 08 relating to Glycerol residue from biodiesel manufacture from non-waste vegetable oils only. | Out | Type of development/works will not result in cumulative effects. |
| Anaerobic Digester Updates, 200m NW of 26 Deerpark Road, Ardstraw. | LA11/2018/0175/F | This is a Section 54 Application to seek a variation of condition 11 which restricts feed stock (European Waste Codes EWC'S) accepted by the anaerobic digester. This proposal wants to amend this condition to include a significant number additional waste codes(EWC's)/feed stocks. These can be viewed in detail on the EWC Codes document on the Planning Portal. | Out | Type of development/works will not result in cumulative effects. |
| Proposed Agricultural Silo.,26 Deerpark Road, Newtownstewart. | LA11/2018/0795/F | Proposed Agricultural Silo. | Out | Type of development/works will not result in cumulative effects. |

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|---|---|---|---|---|
| Extension Works, 37 Deerpark Road, Ardstraw. | LA11/2018/0378/F | Removal of existing two storey rear extension and replaced with new two storey extension to dwelling to provide new kitchen, bedroom and bathroom. | Out | Type of development/works will not result in cumulative effects. |
| Agricultural Barn Conversion and Extension, 38 Baronscourt Road, Newtownstewart. | LA11/2018/0357/F | Conversion and 2 storey extension/alterations to existing agricultural barn to provide lettable tourist accommodation (Bunk House) & provision of a micro-brewery. | Out | Type of development/works will not result in cumulative effects. |
| Farm Single Dwelling Development, proposed site approx. 40m northwest of: 26 Oldcastle Road, Newtownstewart. | LA11/2018/0084/RM | Proposed erection of a single dwelling on a farm. | Out | Development considered too small for cumulative effects. |
| Two Storey House and Garage Development, 100m north east of 16 Old Castle Road, Newtownstewart. | LA11/2016/0199/O | Two storey detached house with separate double garage. | Out | Development considered too small for cumulative effects. |
| Single Storey Garage Extension, 6 Old Castle Road, Newtownstewart. | LA11/2019/0091/F | Proposed single storey garage extension to side of existing dwelling. | Out | Type of development/works will not result in cumulative effects. |
| Play Area Works, St Patricks Primary School, 59 Dublin Street, Newtownstewart. | LA11/2018/1061/F | Covered Play Area. | Out | Type of development/works will not result in cumulative effects. |
| Demolition and Extension Works, 17 Gortgranagh Road, Newtownstewart. | LA11/2017/1082/F | Demolition of existing single storey living room on north west elevation and removal of existing shed to north west of existing dwelling. Building new one & three quarter storey extension on north west elevation. | Out | Type of development/works will not result in cumulative effects. |

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| Extension and Alterations, 145 Beltany Road, Omagh. | LA10/2017/0229/F | Proposed extension and alterations to provide bedroom and bathroom suitable for assisted living accommodation. | Out | Type of development/works will not result in cumulative effects. |
| Sign Improvements, 134 Beltany Road, Omagh. | LA10/2017/0184/A | Revamp of existing gantry totem sign and new gable wall sign. | Out | Type of development/works will not result in cumulative effects. |
| Single Storey Extension, 16 Killynure Road, Omagh. | LA10/2016/0289/F | Proposed single storey extension to rear of dwelling to include a snug, lobby, and WC. | Out | Type of development/works will not result in cumulative effects. |
| Bowling Alley and Restaurant Development, 190m NW of 15 Broadford Road, Omagh. | LA10/2017/1256/F | 4 lane bowling alley with associated restaurant and site works accessing Broadford Road. | Out | Type of development/works will not result in cumulative effects. |
| Demolition and Extension, 114 Castletown Road, Omagh. | LA10/2018/0255/F | Demolition of existing sun lounge and extending out kitchen on rear elevation of existing house. | Out | Type of development/works will not result in cumulative effects. |
| Rear Extension, 128 Castletown Road, Mountjoy. | LA10/2017/0913/F | Proposed rear extension to dwelling to provide an additional bedroom and en-suite bathroom. | Out | Type of development/works will not result in cumulative effects. |
| Sun Room Works, 18 Dunteige Road, Mountjoy. | LA10/2018/0965/F | Addition of sunroom onto west elevation of existing dwelling. | Out | Type of development/works will not result in cumulative effects. |
| Dwelling Extensions, 135 Castletown Road, Mountjoy. | LA10/2018/0739/F | Extensions to front and rear elevations of dwelling. | Out | Type of development/works will not result in cumulative effects. |

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|---|---|---|---|---|
| Clothes Shop and Storage, 86 - 88 Beltany Road, Mountjoy. | LA10/2018/1590/F | Retention of clothes shop and associated storage. | Out | Type of development/works will not result in cumulative effects. |
| Dwelling Type Change, 17 Lisnagirr Road, Mountjoy, Omagh. | LA10/2018/0507/F | Dwelling - Change of house type to that previously approved under planning approval K/2009/0164/F (replacement dwelling). | Out | Type of development/works will not result in cumulative effects. |
| Church Toilet Replacement and Access Provision, Holy Trinity Church, Lislimnaghan Rash Road, Omagh. | LA10/2018/1344/F | Provision of level access to church doors to replace existing stone steps plus replacement external toilet building with level access. | Out | Type of development/works will not result in cumulative effects. |
| Emergency Flood Relief Lane, site access 540m north of 14 Todds Road, Omagh, accessing Drumlegagh Road, South Omagh. | LA10/2016/0284/F | Proposed emergency flood relief lane to serve 14 Todds Road, Lisnagir, Omagh, and flood locked land. | Out | Type of development/works will not result in cumulative effects. |
| Dwelling and Garage, site adjacent to and north west of 20 Drumlegagh Road, South Omagh. | LA10/2019/0183/O | Proposed dwelling and domestic garage in gap site under CTY 8 of PPS21. | Out | Development considered too small for cumulative effects. |
| Building Use Change, Unit 10 Beltany Business Park, 46 Beltany Road, Omagh. | LA10/2016/0796/F | Retention of part change of use to offices and staff facilities ancillary to existing manufacturing use. | Out | Type of development/works will not result in cumulative effects. |
| Roof Replacement and Entrance Lobby, Omagh Academicals Rugby Club Mellon | LA10/2016/0518/F | Proposed new entrance lobby and covered area. Replacement of ex flat roofs with new pitched insulated metal roof cladding. | Out | Type of development/works will not result in cumulative effects. |

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| Playing Fields, Derry Road, Omagh. | | | | |
| Biomass Boiler Works, 46 Beltany Road, Omagh. | LA10/2018/1265/F | Retention of wood pellet storage silo and biomass boiler and tank enclosure. | Out | Type of development/works will not result in cumulative effects. |
| Dwelling Extension, 20 Beltany Grove, Beltany Road, Omagh. | LA10/2016/0561/F | Proposed rear extension to dwelling. | Out | Type of development/works will not result in cumulative effects. |
| Car Sales Yard, 24 Beltany Road, Omagh. | LA10/2016/1218/F | Retention of car sales yard (amended plan and supporting information). | Out | Type of development/works will not result in cumulative effects. |
| Residential Development, lands approx. 55 m south east of 8 Mullagharan Road, Omagh. | LA10/2016/0449/F | Erection of 2no detached dwellings and 2no Detached domestic garages. | Out | Development considered too small for cumulative effects. |
| Dairy Farm Works, 35 Aughnamoyle Road, Omagh. | LA10/2017/0693/F | Replacement milking parlour and cubicle shed for 112 dairy cows, complete with cattle crush, collection pen and feeding passages and underground slurry tank with the existing buildings reused for storage of animal feedstuff and machinery. | Out | Type of development/works will not result in cumulative effects. |
| Single Storey Rear Extension, 14 Mullaghmenagh Meadows, Omagh. | LA10/2017/0285/F | Single storey rear extension to two storey semi-detached dwelling. | Out | Type of development/works will not result in cumulative effects. |
| Dwelling and Garage Development, 3 Mullaghmenagh Avenue, Omagh. | LA10/2017/1110/F | Proposed two storey dwelling with detached domestic garage. | Out | Development considered too small for cumulative effects. |

| Other Committed Development considered in Cumulative Effects | Application reference number | Description | Scoped in or out | Justification for inclusion on 2019 ESA |
|---|---|---|---|---|
| Dwelling and Garage Development, approx. 25m SE of 9 Mullaghmenagh Avenue, Mullaghmena, Upper Omagh. | LA10/2019/0079/F | Proposed two storey dwelling and detached domestic garage. | Out | Development considered too small for cumulative effects. |
| Housing Type Change, sites 4 and 9 of housing development immediately east of Mullaghmena Avenue and behind 16 Gillygooley Road, Omagh. | LA10/2016/0240/F | Change of house types from that approved under K/2010/0395/F on sites 4 and 9: Site 4 - Change of house type from Type A1 to Type E with single storey sun room to rear and domestic garage. Site 9 - Change of house type from Type A to Type C (handed) and domestic garage. | Out | Type of development/works will not result in cumulative effects. |
| Housing Type Change, site 7 housing development immediately east of Mullaghmena Avenue, Gillygooley Road, Omagh. | LA10/2018/0412/F | Change of house type - 2 storey detached dwelling with detached domestic garage - from that approved under K/2010/0395. | Out | Type of development/works will not result in cumulative effects. |
| Housing Type Change, site 6 housing development immediately east of Mullaghmena Avenue, Gillygooley Road, Omagh. | LA10/2017/0686/F | 1 no. dwelling and garage; change of house type from K/2010/0395/F (Housing development). | Out | Type of development/works will not result in cumulative effects. |
| Studio Extension and Other Provisions, IMC Cinema, Gillygooley Road, Omagh. | LA10/2016/0153/F | The provision of two additional cinema studios, with new toilet and shop facilities, new ticket/box office and new foyer to increase the variety and quality of films for public viewing. | Out | Type of development/works will not result in cumulative effects. |
| Hours of Operation and Wall Cladding Variations, Gillygooley Road, Omagh. | LA10/2018/0333/F | To vary condition 2 (Hours of operation) and condition 5 (wall cladding) of approval LA10/2016/0505/F (manufacturing Unit). | Out | Type of development/works will not result in cumulative effects. |

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|---|---|---|---|---|
| Manufacturing Unit Development, former Acheson and Glover yard (accessing Gillygooley Road Omagh), 150 metres south of Omagh Cinema, Gillygooley Road, Omagh. | LA10/2016/0505/F | Proposed manufacturing unit for the production of concrete precast piles and storage of same. | Out | Type of development/works will not result in cumulative effects. |
| Concrete Mixing Plant Works, 19 Gillygooley Road, Omagh. | LA10/2018/0407/F | Retention of concrete mixing plant and cement store to rear of existing production building, steel tying shed and standby generator, including new office building. | Out | Type of development/works will not result in cumulative effects. |
| Change of House Type, site 5 Housing development immediately east of Mullaghmena Avenue, Gillygooley Road, Omagh. | LA10/2016/1032/F | Proposed dwelling (Change of house type from previous approval K/2010/0395/F). | Out | Type of development/works will not result in cumulative effects. |
| Machine Shop Industrial Shed extension, 6 Gillygooly Road, Omagh. | LA10/2018/1106/F | Extension to existing machine shop industrial shed to provide storage and covered laydown area - indicated as building C on submission. | Out | Type of development/works will not result in cumulative effects. |
| Dwelling and Garage Development, 40m SE of 37 Mullaghmena Road, Omagh. | LA10/2017/0721/RM | Proposed dwelling and domestic garage. | Out | Development considered too small for cumulative effects. |
| Mobile Playroom Development, 120 Tamlaght Road, Omagh. | LA10/2018/0688/F | Proposed mobile playroom. | Out | Development considered too small for cumulative effects. |
| Dwelling Development, lands between 140 and 144 Tamlaght Road, Omagh. | LA10/2018/1190/RM | Dwelling with garage and associated site works. | Out | Development considered too small for cumulative effects. |

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|---|---|---|---|---|
| Garage and Garden Store, No 53 Bracken Road, Ballygowan, Omagh. | LA10/2018/0013/F | 1 1/2 storey garage with storage and a garden store. | Out | Type of development/works will not result in cumulative effects. |
| Extension and Access Realignment, 53 Bracken Road, Omagh. | LA10/2017/0364/F | Extension to curtilage of dwelling approved under LA10/2016/0721/F to include retention of imported topsoil, reprofiling and landscaping to from domestic garden. Also minor realignment of site access driveway. | Out | Type of development/works will not result in cumulative effects. |
| Two Storey Building Extension, 30m south west of 149 Tamlaght Road, Omagh. | LA10/2017/1337/F | Retention of 2 storey building for ball store, washroom & disperser, toilets, associated stores, office & plant. | Out | Type of development/works will not result in cumulative effects. |
| Extension Works, 10 Lambrook Close, Omagh. | LA10/2017/0790/F | One and a half storey side extension to two storey dwelling, providing additional bedroom and living space. | Out | Type of development/works will not result in cumulative effects. |
| Three Storey Apartment Development, adjacent to 1-6 Lambrook Grove, Omagh. | LA10/2018/1514/F | Proposed 3 storey block of 6 apartments. | Out | Development considered too small for cumulative effects. |
| Residential Development, between 6 Lambrook Drive and 50 Lambrook Grove, Omagh. | LA10/2018/1520/F | Proposed 8 no. houses. | Out | Development considered too small for cumulative effects. |
| New Signage, Donnelly Vauxhall, 95 Dromore Road, Omagh. | LA10/2016/0761/A | New Vauxhall C.I. signage comprising 1 no. off totem sign, 1 no. off entrance sign, 4 no. sets letters (built up), 4 no. off moulded logo, 1 no. off fascia sign, 1 no. off directional sign. | Out | Type of development/works will not result in cumulative effects. |

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| Rear Single Storey Kitchen Extension, 1 Rylands Cottages, Omagh. | LA10/2016/0352/F | Rear single storey kitchen extension. | Out | Type of development/works will not result in cumulative effects. |
| Agricultural Shed, approx. 90m south west of Sedennen House, 4 Loughmuck Road, Omagh. | LA10/2017/1248/F | Retention of agricultural shed. | Out | Type of development/works will not result in cumulative effects. |
| Highways Application Variations, approx. 160m west of 1-19 Coolnagard Way, Omagh. | LA10/2017/0671/F | Variation of condition no. 6 (submission of drawing for boundary treatment) and conditions nos. 8, 9, 10 and 11 (development of link road to Old Dromore Road, right turn lane at Clanabogan/Old Dromore Rd junction lower, traffic signalised junction Old Dromore Road/Clanabogan Road, junction -upper, bus stop Clanabogan Road), K/2007/0368/F for 201 dwelllings to allow works to be carried out prior to occupation. | Out | Type of development/works will not result in cumulative effects. |
| Farm Dwelling and Garage, 50m west of 55 Clanabogan Road, Omagh. | LA10/2017/0795/O | Farm dwelling and garage. | Out | Development considered too small for cumulative effects. |
| Domestic Dwelling, 50m south of 109 Kevlin Road, Omagh. | LA10/2018/0885/RM | Proposed domestic dwelling. | Out | Development considered too small for cumulative effects. |
| Golf Driving Range Works, lands approx. 100m NW of 16 Blackfort Road, Omagh. | LA10/2017/0777/F | Driving range to include 6 no. driving bays with equipment store, toilet and ball dispenser store, car parking facility, with golf netting to public road and associated landscaping. | Out | Type of development/works will not result in cumulative effects. |

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|---|---|---|---|---|
| Milking Parlour Development, approx 70m SW of 18 Lissan Road, Omagh. | LA10/2017/0058/F | Proposed new milking parlour with underground slurry tank. | Out | Type of development/works will not result in cumulative effects. |
| Dwelling and Garage Development, between 35 and 39 Blackfort Road, Drumragh, Omagh. | LA10/2018/1325/O | Site for dwelling and garage within gap site. | Out | Development considered too small for cumulative effects. |
| House Design Change, lands approx. 280m north of 80 Blackfort Road, Omagh. | LA10/2016/1224/F | Change of house design from that approved under K/2013/0322/F. | Out | Type of development/works will not result in cumulative effects. |
| Ground Floor Extension, 52 Doogary Road, Omagh. | LA10/2017/0243/F | Proposed ground floor extension to provide an increased production floor, changing facilities, canteen and office entrance with first floor offices and boardroom facilities. | Out | Type of development/works will not result in cumulative effects. |
| Replacement Dwelling, approx 100m north of the Nook Doogary Avenue, Doogary, Omagh. | LA10/2016/0927/O | Replacement dwelling. | Out | Type of development/works will not result in cumulative effects. |
| Vegetation Clearance Application Variations, Tamnamore Powerline. | LA10/2016/0199/F | Alteration to Planning Condition 8 on existing Planning Application M/2011/0500/F (overhead line and substation)' no tree or hedge removal during bird breeding season'. To permit Trees and Hedging to be removed/cut under controlled conditions. | Out | Type of development/works will not result in cumulative effects. |
| Change of Building Use, 112 Doogary Road, Omagh. | LA10/2017/0677/F | Proposed partial change of use from bed and breakfast to cattery. | Out | Type of development/works will not result in cumulative effects. |

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| Storage and Shed Retention, approx 100m south west of no.151 Doogary Road, Omagh. | LA10/2017/0518/F | Proposed retention of replacement storage and refurbishment shed (for agricultural machinery). | Out | Type of development/works will not result in cumulative effects. |
| Agricultural Shed Replacement, 63 Seskinore Road, Omagh. | LA10/2016/0530/F | Proposed replacement agricultural shed for the storage of farm machinery. | Out | Type of development/works will not result in cumulative effects. |
| Distribution Building Extension, 56 Seskinore Road, Omagh. | LA10/2018/0390/F | Proposed extension to existing distribution building to provide additional storage accommodation. | Out | Type of development/works will not result in cumulative effects. |
| Dwelling to House of Multiple Occupancy Change, 33 Tullyrush Road, Beragh. | LA10/2016/0623/F | Change of use from a private dwelling to a house of multiple occupancy. The proposal is to provide supported living accommodation for 4 no. residents within the existing property. External alterations to the dwelling will include replacement front and rear external doors and new ramps/level access to front and rear entrances. | Out | Type of development/works will not result in cumulative effects. |
| Garage Conversion and Extension, 33 Tullyrush Road, Omagh. | LA10/2017/1003/F | Conversion and extension of garage to provide a self-contained, one bedroom, supported living unit. | Out | Type of development/works will not result in cumulative effects. |
| Storage Shed Retention, 56 Tullyrush Road, Omagh. | LA10/2018/0046/F | Retention of domestic storage shed. | Out | Type of development/works will not result in cumulative effects. |
| Site Level Raising to Dwelling, 70m south of 96 Seskinore Road, Seskinore, Omagh. | LA10/2016/0319/F | Proposed amendment to previous approval K/2015/0070/F (dwelling) to allow raising of site level. | Out | Type of development/works will not result in cumulative effects. |

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|---|---|---|---|---|
| Two Storey Dwelling Replacement and car port, 102 Seskinore Road, Omagh. | LA10/2017/0410/F | Proposed replacement two storey dwelling incorporating an attached car port. | Out | Type of development/works will not result in cumulative effects. |
| Replacement Garage, 1 Rarone Road, Omagh. | LA10/2017/0231/F | Replacement garage. | Out | Type of development/works will not result in cumulative effects. |
| Domestic Garage Retention, 140m south of 158 Moylagh Road, Seskinore, Beragh. | LA10/2018/0682/F | Retention of domestic garage. | Out | Type of development/works will not result in cumulative effects. |
| New Access, adjacent to 168 Moylagh Road, Seskinore, Omagh. | LA10/2018/1541/F | New access to 170 Moylagh Road, Seskinore, Omagh. | Out | Type of development/works will not result in cumulative effects. |
| Farm Building Development, 41 Curr Road Gortaclare, Beragh, Omagh. | LA10/2018/0854/F | Proposed farm building for the storage of bales and machinery. | Out | Development considered too small for cumulative effects. |
| Dwellings and Domestic Garages, lands 125 metres north east of 124 Moylagh, Gortaclare, Omagh. | LA10/2018/1001/F | Proposed two number detached dwellings and domestic garages. | Out | Development considered too small for cumulative effects. |
| Residential Development, lands 125m NE of 124 Moylagh Road, Gortaclare, Omagh. | LA10/2019/0156/F | Proposed 2 no. detached dwellings and domestic garages. | Out | Development considered too small for cumulative effects. |
| Change of House Type, approx. 70m east of 124 Moylagh Road, Gortaclare, Omagh. | LA10/2017/0180/F | Proposed 2 No Two Storey Dwellings with Detached Domestic Garages (Change of House Type from Previous Approval K/2013/0219/F). | Out | Type of development/works will not result in cumulative effects. |

| Other Committed Development considered in Cumulative Effects | Application reference number | Description | Scoped in or out | Justification for inclusion on 2019 ESA |
|---|---|---|---|---|
| Demolition and Replacement of Retail Units, 62 – 64 Curr Road, Beragh. | LA10/2017/0992/F | Demolition of existing retail shop premises, car sales unit, repair garages and the erection of replacement retail unit to include hot food deli, seating area and all associated site works. | Out | Type of development/works will not result in cumulative effects. |
| Poultry Shed Application Variations, land opposite 57 Legacurry Road, Killadroy, Beragh. | LA10/2018/1573/F | Section 54 application to vary condition 7 (erection of a mesh fence) of planning approval LA10/2015/0587/F (Proposed free range poultry shed with 2No feed bins and a standby generator building); Reducing the height of the mesh fence to be erected from 1.8 metres to a minimum of 1.35 metres. | Out | Type of development/works will not result in cumulative effects. |
| Single Dwelling House Development and Two Existing Stone Barns Renovation, 76 Killadroy Road, Beragh. | LA10/2016/0084/F | Proposed development is to replace the existing two storey house, adjacent agricultural shed and two storey stone barn with new build single dwelling house and two existing stone barns renovated as part of new court yard entrance to the new house. | Out | Type of development/works will not result in cumulative effects. |
| Dwelling and Garage, site opposite and 40m south of 39 Greenmount Road, Sixmilecross. | LA10/2019/0170/RM | Proposed off site replacement dwelling and garage accessed from Greenmount Road. | Out | Type of development/works will not result in cumulative effects. |
| Internal Alterations, Extension and Ramp Access, 122 Killadroy Road, Beragh. | LA10/2016/0435/F | Proposed internal alterations and rear extension with ramp access. | Out | Type of development/works will not result in cumulative effects. |
| Domestic Garage, 5 Tullanafoile Road, Tullanafoile, Newtownsaville. | LA10/2017/0942/F | Proposed domestic garage. | Out | Type of development/works will not result in cumulative effects. |

| Other Committed Development considered in Cumulative Effects | Application reference number | Description | Scoped in or out | Justification for inclusion on 2019 ESA |
|---|---|---|---|---|
| Residential Development, 50m north of 211 Newtownsaville Road, Eskra. | LA10/2019/0229/RM | Proposed two storey dwelling, garage and associated works. | Out | Development considered too small for cumulative effects. |
| Single Storey Dwelling and Garage, 150m SE of junction of Dunbiggan Road and School Road Newtownsaville, Omagh. | LA10/2016/0908/F | Single storey dwelling and detached garage on an active farm. | Out | Application deemed refusal. |
| Dwelling Replacement and New Garage, 90m west of 15 Dunbiggan Road, Eskra. | LA10/2017/0661/F | Proposed replacement dwelling and provision of domestic garage (existing dwelling to be retained and used for dry storage in association with adjoining agricultural holding). | Out | Type of development/works will not result in cumulative effects. |
| Single Storey Gable Extension, 270 Newtownsaville Road, Augher. | LA09/2016/1183/F | Proposed single storey gable extension to provide disabled facilities grant extension. | Out | Type of development/works will not result in cumulative effects. |
| Replacement Dwelling, 36 Glenhoy Road, Augher. | LA09/2018/1538/F | Replacement dwelling. | Out | Type of development/works will not result in cumulative effects. |
| Dwelling Development, approx 32m south of 37 Errigal Road, Ballygawley. | LA09/2018/0148/O | Proposed dwelling in a gap site under policy CTY8 of PPS21. | Out | Development considered too small for cumulative effects. |
| Extension and Door Installation Works, 54 Errigal Road, Ballygawley. | LA09/2018/1167/F | Extension to front elevation for orangery and installation of sliding doors to right side elevation. | Out | Type of development/works will not result in cumulative effects. |
| New Dwelling and Garage, land adjacent to and NE of no. 69 Glenhoy Road, Ballygawley. | LA09/2016/1530/F | Erection of dwelling and domestic garage on a farm. | Out | Development considered too small for cumulative effects. |

| Other Committed Development considered in Cumulative Effects | Application reference number | Description | Scoped in or out | Justification for inclusion on 2019 ESA |
|---|---|---|---|---|
| Biomass Boiler Sheds Retention, land approx. 90m east of 300m north of 53 Annaghilla Road, Augher. | LA09/2018/0949/F | Proposed retention of 5 no. biomass boiler sheds including 1 no. fuel bin. | Out | Type of development/works will not result in cumulative effects. |
| Church Extension, St Matthew's Church of Ireland 25 Ballynasaggart Road, Ballygawley. | LA09/2016/1801/F | Single storey extension to side elevation of existing church hall. | Out | Type of development/works will not result in cumulative effects. |
| Extension Works, 37 Feddan Road, Dungannon. | LA09/2018/1280/F | Side extension and associated works to dwelling. | Out | Type of development/works will not result in cumulative effects. |
| Replacement Dwelling, Hillview 40 Crew Road, Ballygawley. | LA09/2016/1055/F | Replacement Dwelling. | Out | Type of development/works will not result in cumulative effects. |
| Dwelling and Garage, 70m west of 33a Crew Road, Ballygawley. | LA09/2018/0903/RM | Erection of dwelling and garage on a farm. | Out | Development considered too small for cumulative effects. |
| Farm Dwelling and Garage, 40m north west of 11 Ballynasaggart Road, Carran. | LA09/2017/0872/RM | Erection of farm dwelling and associated domestic garage. | Out | Development considered too small for cumulative effects. |
| Replacement Dwelling, 42 Ballynany Road, Aughnacloy. | LA09/2018/1535/F | Proposed replacement dwelling on an approved site. | Out | Type of development/works will not result in cumulative effects. |

| Other Committed Development considered in Cumulative Effects | Application reference number | Description | Scoped in or out | Justification for inclusion on 2019 ESA |
|---|---|---|---|---|
| Single Storey Dwelling, 200m NE of 159 Tullyvar Road, Ballygawley. | LA09/2016/1550/F | Single Storey Dwelling with Disability Adaptations under Policy CTY6 Development in the Countryside. | Out | Development considered too small for cumulative effects. |
| Farm Dwelling, 300m south east of 115 Tullyvar Road, Ballygally. | LA09/2017/1326/F | Proposed new farm dwelling with adjoining garage and stables. | Out | Development considered too small for cumulative effects. |
| Dwelling and Garage, approx 40m NW of 111 Tullyvar Road, Aughnacloy. | LA09/2016/0219/F | Erection of dwelling and domestic garage on a farm. | Out | Development considered too small for cumulative effects. |
| House Type Change, 80m east of 99 Tullyvar Road, Aughnacloy (10 Lissenderry Aughnacloy). | LA09/2017/0206/F | Change of house type approved in M/2013/0222/F. | Out | Type of development/works will not result in cumulative effects. |
| Outbuildings Conversion and Extension, 99 Tullyvar Road, Aughnacloy. | LA09/2018/0029/F | Proposed conversion of and extension to existing outbuildings to provide 2 self catering holiday units. | Out | Type of development/works will not result in cumulative effects. |
| Aughnacloy College, 23 Carnteel Road, Aughnacloy. | LA09/2016/0859/F | New 3G sports pitch to replace existing grass playing field and tennis courts, to include 5m high ballstop fencing and 12m high ballcatch netting with 15m high floodlighting columns and associated landscaping works. | Out | Type of development/works will not result in cumulative effects. |
| Single Storey Extension, 38 Caledon Road, Aughnacloy. | LA09/2016/0438/F | Proposed single storey extension to rear of dwelling to provide family room and conversion of existing attached garage to bedroom and en-suite. | Out | Type of development/works will not result in cumulative effects. |
| Farm Dwelling and Garage, land approx 40m. west of 89 Caledon Road, Aughnacloy. | LA09/2019/0173/O | Proposed dwelling and domestic garage on a farm. | Out | Development considered too small for cumulative effects. |

| Other Committed Development considered in Cumulative Effects | Application reference number | Description | Scoped in or out | Justification for inclusion on 2019 ESA |
|---|---|---|---|---|
| Proposed Housing Development, lands at Tullyvar Road, Aughnacloy. | LA09/2016/0253/PAD | Proposed Housing Development. | Out | At pre-application decision stage. |
| Euro Oils, lands east of 19 Lifford Road, Strabane. | LA11/2015/0407/PAD | Euro Oils (Strabane) Ltd. | Out | At pre-application decision stage. |
| Residential Development, brownfield land located adjacent to Woodside Road Newbuildings. | LA11/2015/0744/PAD | Residential development on brownfield land. | Out | At pre-application decision stage. |
| Rear and Side Extension, 72 Woodside Road, Newbuildings. | A/2015/0097/F | Rear and side single storey extension to living and kitchen areas of existing dwelling. | Out | Type of development/works will not result in cumulative effects. |
| Demolition, Extension and Conversion Works, 85 Victoria Road, Newbuildings. | A/2015/0169/F | Demolition of existing conservatory erection of new sunroom conversion of attached garage into utility room associated interior alterations & erection of new car port. | Out | Type of development/works will not result in cumulative effects. |
| Residential Development, opposite no 1 Gortgranagh Road, Newtonstewart. | J/2014/0045/F | Proposed erection of two no 1 1/2 storey detached dwelling and 2 no semi detached dwellings with domestic garage. | Out | Development considered too small for cumulative effects. |
| Car Wash Retention, 60m North East of 3 Bradley Way, Magirr, Strabane. | J/2014/0061/F | Retention of car wash. | Out | Type of development/works will not result in cumulative effects. |
| Building Change of Use, Sollus centre, 231 Victoria Road, Bready. | J/2014/0092/F | Proposed change of use to part of existing conference room to 'Snack Shop'. | Out | Type of development/works will not result in cumulative effects. |

| Other Committed Development considered in Cumulative Effects | Application reference number | Description | Scoped in or out | Justification for inclusion on 2019 ESA |
|---|---|---|---|---|
| Dwelling and Garage Development, land between No 9 & 11 Strahans Road, Strabane. | J/2014/0152/RM | Development of small infill site for domestic dwelling and garage. | Out | Development considered too small for cumulative effects. |
| Building Change of Use, units 7 and 8 The Pavilion Retail Park, 41 Railway Street, Strabane. | J/2014/0173/LDE | Change of use to cafe/restaurant. | Out | Type of development/works will not result in cumulative effects. |
| Garage Demolition and Dwelling Change of Use, 74 Railway Road, Strabane. | J/2014/0180/F | Proposed demolition of garage and change of use from dwelling to office. | Out | Type of development/works will not result in cumulative effects. |
| Ramped Access Provision and Garage Conversion, 31, Urbalreagh Road, Strabane. | J/2014/0215/F | New ramped access to rear conversion of existing garage to bedroom ensuite and utility. | Out | Type of development/works will not result in cumulative effects. |
| Car Park Retention, within the Strabane Academy site. | J/2014/0219/F | Retention of car parking spaces. | Out | Type of development/works will not result in cumulative effects. |
| Two Storey Dwelling Development, on lands adjoining (North) of 9 Strahans Road, Strabane. | J/2014/0227/RM | Erection of two storey dwelling with detached domestic garage. | Out | Development considered too small for cumulative effects. |
| Replacement Two Storey Dwelling, 19 Bellspark Road, Sion Mills. | J/2014/0230/F | Proposed replacement two storey dwelling. | Out | Type of development/works will not result in cumulative effects. |

| Other Committed Development considered in Cumulative Effects | Application reference number | Description | Scoped in or out | Justification for inclusion on 2019 ESA |
|---|---|---|---|---|
| Single Storey Extension, 16 Carricklynn Avenue, Strabane. | J/2014/0232/F | Proposed single storey extension to gable of dwelling. | Out | Type of development/works will not result in cumulative effects. |
| Extension Works, Khiva House, 53 Urney Road, Strabane. | J/2014/0233/F | Removal of existing extension to original building and alterations and extension to existing building to provide new training rooms. Temporary on-site facilities to be provided on-site for the duration of the contract. | Out | Type of development/works will not result in cumulative effects. |
| Single Storey Rear Extension, 83 Derry Road, Strabane. | J/2014/0234/F | Proposed single storey rear extension to existing dwelling. | Out | Type of development/works will not result in cumulative effects. |
| Domestic Garage Extension, 1 Breenvale, Victoria Bridge. | J/2014/0236/F | Proposed domestic garage to existing dwelling. | Out | Type of development/works will not result in cumulative effects. |
| Petrol Station Development, ASDA Store, Railway Street Strabane. | J/2014/0242/F | Proposed petrol filling station (no retail kiosk) with associated site and access works. | Out | Type of development/works will not result in cumulative effects. |
| Floodlight Improvements to Games Area, Ballyfatten Muga, Meadow Crescent, Sion Mills. | J/2014/0244/F | Provision of 4 no. floodlights to existing multi use games area. | Out | Type of development/works will not result in cumulative effects. |
| Single Storey Extension and Ramp, 2 Meadow Crescent, Sion Mills. | J/2014/0251/F | Single storey extension to rear of dwelling and ramp to front entrance. | Out | Type of development/works will not result in cumulative effects. |
| Dwelling and Garage Replacement, 320m east of 8 Grangefoyle Road, Bready. | J/2014/0253/RM | Proposed single storey replacement dwelling and single storey detached garage. | Out | Type of development/works will not result in cumulative effects. |

| Other Committed Development considered in Cumulative Effects | Application reference number | Description | Scoped in or out | Justification for inclusion on 2019 ESA |
|---|---|---|---|---|
| Single Storey to Two Storey Dwelling, 61 Fyfin Road, Breen, Victoria Bridge. | J/2014/0268/F | Demolition of existing single storey dwelling and replacement with a two storey dwelling in same location. | Out | Type of development/works will not result in cumulative effects. |
| Quarry Restoration, lands adjacent to and 120m NW of an existing Concrete works Strahans Road, Strabane. | J/2014/0295/F | Proposed quarry restoration by way of infilling with inert and excavated waste material weighbridge wheelwash site office site works and new access. | Out | Type of development/works will not result in cumulative effects. |
| Dwelling and Garage Development, site immediately NE of 15 Garden Road, Sion Mills. | J/2014/0339/O | Proposed dwelling and domestic garage. | Out | Development considered too small for cumulative effects. |
| Single Storey Extension, 12 Glenside, Strabane. | J/2014/0341/F | Proposed single storey extension to rear of existing dwelling. | Out | Type of development/works will not result in cumulative effects. |
| Overhead Line, 102 Mulvin Road, Strabane. | J/2015/0002/F | 4 span 3 phase 11kv overhead line. | Out | Type of development/works will not result in cumulative effects. |
| New Access, land 50m south of 23 Peacock Road, Sion Mills. | J/2015/0003/F | New vehicular access to a yard which makes concrete products. | Out | Type of development/works will not result in cumulative effects. |
| Single Storey Extension, 35 Summerhill Court, Strabane. | J/2015/0010/F | Proposed single storey extension to gable and rear of an existing dwelling. | Out | Type of development/works will not result in cumulative effects. |

| Other Committed Development considered in Cumulative Effects | Application reference number | Description | Scoped in or out | Justification for inclusion on 2019 ESA |
|---|---|---|---|---|
| Play Area, site 35m south east of 16 Fyfin Road, Victoria Bridge. | J/2015/0019/F | Proposed play area including security fencing and access gates on existing green site. | Out | Type of development/works will not result in cumulative effects. |
| Irish Language Centre, 1 Daisy Park, Sion Mills. | J/2015/0067/O | Demolition of existing buildings and construction of Irish language Centre and associated works. | Out | Type of development/works will not result in cumulative effects. |
| Pig Fattening House, farmland adjoining farmyard north- north west of 37 Derrpark Road, Ardstraw. | J/2015/0080/F | Proposed pig fattening house with 2 no feed bins and 1 no waste management tank together with associated landscaping works (House to accommodate 1400 pigs). | Out | Application deemed refusal. |
| Wind Turbine Erection, lands 225m NW of 39 Legacurry Road, Seskinore, Omagh. | K/2014/0259/F | Erection of a single wind turbine 30.4m hub height with 14.55m blades associated access and 2 no. electricity cabinets (225kw). | Out | Type of development/works will not result in cumulative effects. |
| Workshop Retention, 1B Lisnagirr Road, Omagh. | K/2014/0273/F | Retention of existing workshop. | Out | Type of development/works will not result in cumulative effects. |
| Slurry Store Works, 100m SE of 4 Routingburn Road, Kilnaheery, Beragh. | K/2014/0306/LDP | Removal of topsoil from the proposed site (to be re-laid over the adjacent field), formation of concrete foundations and floor slab for the slurry store, erection of prefabricated reinforced concrete walls, excavation for and construction of an underground slurry pumping tank adjacent to the slurry store and access extension. | Out | Type of development/works will not result in cumulative effects. |
| Single Storey Extension, 8 Lambrook Close, Omagh. | K/2014/0312/F | Single storey extension to rear of dwelling. | Out | Type of development/works will not result in cumulative effects. |

| Other Committed Development considered in Cumulative Effects | Application reference number | Description | Scoped in or out | Justification for inclusion on 2019 ESA |
|---|---|---|---|---|
| Storage Shed Extension, 168 Doogary Road, Omagh. | K/2014/0406/F | Proposed extension to provide covered open machinery storage shed. | Out | Type of development/works will not result in cumulative effects. |
| Signage Updates, 168 Doogary Road, Omagh. | K/2014/0407/A | Proposed 10mm thick Foamex letters overlaid with coloured vinyl advertising signage. | Out | Type of development/works will not result in cumulative effects. |
| Residential Development, lands adjacent to and NE of 220 Newtownsaville Road and opposite 217 217a and 219 Newtownsaville Road, Newtownsaville. | K/2014/0495/F | Proposed development of 4 detached dwellings and garages and associated works. | Out | Development considered too small for cumulative effects. |
| Dwelling Alterations and Extension, 35 Augherpoint Road, Omagh. | K/2014/0508/F | Single storey side extension and alterations to dwelling. | Out | Type of development/works will not result in cumulative effects. |
| Dwelling Extension and Alterations, 8 Rylands Cottages, Omagh. | K/2014/0510/F | Proposed extension and alterations to dwelling (revised site plan submitted). | Out | Type of development/works will not result in cumulative effects. |
| Sunroom Extension, 33 Blackfort Road, Omagh. | K/2014/0534/LDP | Construction of a single storey sunroom to the side of the existing two-storey house. | Out | Type of development/works will not result in cumulative effects. |
| Storage and Refurbishment Shed, approx 100m SW of No 151 Doogary Road, Omagh. | K/2014/0545/F | Proposed replacement storage and refurbishment shed. | Out | Type of development/works will not result in cumulative effects. |

| Other Committed Development considered in Cumulative Effects | Application reference number | Description | Scoped in or out | Justification for inclusion on 2019 ESA |
|---|---|---|---|---|
| Garage to Dwelling Conversion, 3 Mullaghmenagh Meadows, Omagh. | K/2015/0074/LDE | Conversion of existing garage to form part of dwelling. | Out | Type of development/works will not result in cumulative effects. |
| Dwelling and Shed Replacement, no 6 Tully Road, Omagh. | K/2015/0094/F | Proposed replacement dwelling and domestic shed. | Out | Type of development/works will not result in cumulative effects. |
| Filing Station and Associated Infrastructure, 40m south of Grange Park, Ballygawley. | LA09/2015/0036/F | Filling station shop with off-license canopy car wash valet store and associated site works. | Out | Type of development/works will not result in cumulative effects. |
| Two Storey Dwelling Replacement, 301 Glenhoy Road, Augher. | LA09/2015/0128/F | Proposed two storey replacement dwelling with detached garage. | Out | Type of development/works will not result in cumulative effects. |
| Dwelling and Garage Development, lands adjoining (north and east) 11 Ballynasaggart Road, Curran, Ballygawley. | LA09/2015/0229/O | Site for a dwelling and associated domestic garage on a farm (ridge height not exceeding 7.5m). | Out | Development considered too small for cumulative effects. |
| Filing Station and Associated Infrastructure, site of former Customs Station, Monaghan Road, Aughnacloy and adjacent to Blackwater River. | LA09/2015/0465/F | Proposed Filling Station Vehicle Wash Shop Restaurant and ATM. | Out | Type of development/works will not result in cumulative effects. |
| Dwelling and Garage, 100m south of 48 Tullywinny Road, Ballygawley. | LA09/2015/0685/O | Proposed dwelling and garage. | Out | Development considered too small for cumulative effects. |

| Other Committed Development considered in Cumulative Effects | Application reference number | Description | Scoped in or out | Justification for inclusion on 2019 ESA |
|---|---|---|---|---|
| House Type Change, 100m east of 99 Tullyvar Road, Aughnacloy. | LA09/2015/0845/F | Change of house type under construction approved M/2013/0225/F. | Out | Type of development/works will not result in cumulative effects. |
| Dwelling Demolition and Replacement, 96 Glenhoy Road, Ballygawley. | LA09/2015/1077/F | New replacement dwelling and demolition of existing dwelling. | Out | Type of development/works will not result in cumulative effects. |
| Dwelling and Garage, Tullyvar Road, Aughnacloy. | LA09/2015/1136/PAD | Dwelling and garage. | Out | Development considered too small for cumulative effects. |
| Agricultural Shed Revised Access, 180m SSE of no 1 Tullybrae Manor, Aughnacloy. | LA09/2015/1170/F | Agricultural shed for storage of farm machinery (revised access). | Out | Type of development/works will not result in cumulative effects. |
| Building Change of Use, 33 Tullybryan Road, Ballygawley. | LA09/2016/0124/F | Change of use from first floor storage facility to pilates studio above existing double garage. | Out | Type of development/works will not result in cumulative effects. |
| Change of House Type, opposite 55 Tullyrush Road, Tullyheeran, Beragh. | LA10/2015/0301/F | Proposed change of house type as previously approved under K/2003/1327/F. | Out | Type of development/works will not result in cumulative effects. |
| Licensed Guest Inn Restaurant and Bedroom Changes, 70m south east of no.2 Camowen Road, Ranelly. | LA10/2015/0611/F | Renewal of planning approval K/2010/0453/F for proposed licensed guest inn consisting of restaurant and 8no. bedrooms. | Out | Type of development/works will not result in cumulative effects. |
| Dwelling and Garage, site 30m SE and adjacent to 17 Augher Point Road, Sixmilecross. | LA10/2015/0703/F | Proposed dwelling and domestic garage. | Out | Development considered too small for cumulative effects. |

| Other Committed Development considered in Cumulative Effects | Application reference number | Description | Scoped in or out | Justification for inclusion on 2019 ESA |
|---|---|---|---|---|
| Replacement Dwelling, 42 Springhill Road, Newtownsaville. | LA10/2015/0807/O | Proposed replacement dwelling. | Out | Type of development/works will not result in cumulative effects. |
| Replacement Dwelling, 42 Springhill Road, Newtownsaville. | LA10/2016/0405/RM | Proposed replacement dwelling. | Out | Type of development/works will not result in cumulative effects. |
| Replacement Dwelling, approx 270m north of 49 Bracken Road, Ballygowan. | LA10/2016/0721/F | Proposed replacement dwelling (one and a half storey). | Out | Type of development/works will not result in cumulative effects. |
| Replacement Dwelling, 61 Victoria Road, Derry. | LA11/2015/0011/F | Replacement one and a half storey dwelling with detached garage. | Out | Type of development/works will not result in cumulative effects. |
| Building Change of Use, vacant commercial unit to site adjacent to the north of Nos 5 & 6 Woodside Road, Newbuildings. | LA11/2015/0021/F | Proposed change of use of vacant commercial unit to an inert construction and demolition waste facility at site adjacent to the north of 5 & 6 Woodside Road Newbuildings. | Out | Application deemed refusal. |
| Concrete Batching Plant, Adjacent to the north of 5 & 6 Woodside Road and north of 1 Rock Park, Newbuildings. | LA11/2015/0026/F | Concrete batching plant to be installed along with the installation of aggregate storage bins and concrete silos for the manufacture of commercial concrete provision of landscaping to the perimeter of the site. | Out | Application deemed refusal. |

| Other Committed Development considered in Cumulative Effects | Application reference number | Description | Scoped in or out | Justification for inclusion on 2019 ESA |
|---|---|---|---|---|
| Residential Development, 19 Woodend Park, Strabane. | LA11/2015/0028/PAD | Development of 8 apartments in 2 separate blocks. | Out | Development considered too small for cumulative effects. |
| Single Storey Extension, 6 Dennett View, Burndennett. | LA11/2015/0038/F | Single storey extension to gable of existing dwelling. | Out | Type of development/works will not result in cumulative effects. |
| New Dwelling, site immediately N.E. of 86 Derry Road, Strabane. | LA11/2015/0046/F | Proposed Dwelling. | Out | Development considered too small for cumulative effects. |
| Single Storey Extension, 19 Glenfinn Park, Strabane. | LA11/2015/0049/F | Proposed single storey extension to front of dwelling and detached domestic garage to rear. | Out | Type of development/works will not result in cumulative effects. |
| Single Storey Extension, 21 Drumenny Road, Burndennet. | LA11/2015/0076/F | Proposed single storey rear extension to dwelling to form granny flat. | Out | Type of development/works will not result in cumulative effects. |
| New Dwelling, 25m west of 20 Peacock Road, Sion Mills. | LA11/2015/0223/F | Proposed new dwelling and integral drying area. | Out | Development considered too small for cumulative effects. |
| Building Change of Use, site 100m North of 51 Dock Street, Strabane. | LA11/2015/0226/F | Proposed part change of use from covered market to 3 no industrial units and 3 no storage units. | Out | Type of development/works will not result in cumulative effects. |
| New Sign, Ballyore Business Park, Newbuildings. | LA11/2015/0265/A | Free Standing totem sign illuminated by base floodlighting. | Out | Type of development/works will not result in cumulative effects. |

| Other Committed Development considered in Cumulative Effects | Application reference number | Description | Scoped in or out | Justification for inclusion on 2019 ESA |
|---|---|---|---|---|
| Sign Upgrades, Strabane Retail Park, 2 Branch Road, Strabane. | LA11/2015/0300/A | Four sets of internally illuminated "COSTA" letters (one on each elevation) with 2 no. 2.0m dia Costa roundels (one to the north-west elevation and the south-east). Costa branded sandblast effect for window graphics. | Out | Type of development/works will not result in cumulative effects. |
| Fabric Awnings, 2 Branch Road, Strabane. | LA11/2015/0320/F | 4no retractable fabric awnings two situated on the north west elevation and two on the south west elevation awning to project 1.5m from the building. | Out | Type of development/works will not result in cumulative effects. |
| Two Storey Extension, 115 Victoria Road, Magheramason. | LA11/2015/0415/F | Two storey rear extension to detached dwelling and alterations to front porch and front attached garage. | Out | Type of development/works will not result in cumulative effects. |
| Totem Sign, land at junction of Railway Street and Park Road, Strabane. | LA11/2015/0424/A | Installation of 1no. totem sign. | Out | Type of development/works will not result in cumulative effects. |
| Fascia Signs, land at junction of Railway Street and Park Road, Strabane. | LA11/2015/0425/A | 7no fascia signs. | Out | Type of development/works will not result in cumulative effects. |
| Signage Works, land at Railway Street and Park Road, Strabane. | LA11/2015/0426/A | Various site signage to include 1no gateway 9no freestanding signs 1no side by side directional 15no dot signs and 2no double sided banner units. | Out | Type of development/works will not result in cumulative effects. |
| Building Change of Use, Villas Bar, 77 Victoria Road, Newbuildings. | LA11/2015/0429/F | Part change of use from existing off-licence and storage area to hot food outlet and retail provision of external smoking areas to side and rear of existing public house provision of new entrance porch to rear and internal alterations. | Out | Type of development/works will not result in cumulative effects. |

| Other Committed Development considered in Cumulative Effects | Application reference number | Description | Scoped in or out | Justification for inclusion on 2019 ESA |
|---|---|---|---|---|
| Dwelling and Garage Development, site immediately north east of 15 Garden Road, Sion Mills. | LA11/2015/0471/F | Proposed dwelling and domestic garage. | Out | Development considered too small for cumulative effects. |
| New Link Road, land north of (and including) River Mourne east of (and including) The River Foyle and West of the Lifford Road Roundabout and Barnhill Road (A5) and including Lifford Road from Lifford Bridge to Lifford Road Roundabout. | LA11/2015/0494/PAD | Phase 1a: New Link Road New Roundabout Junction Replace flood embankment and construct flood wall Upgrade Lifford Road roundabout. Phase 1b: Internal access parking and public realm Foodstore uses (within the conditioned maximums). | Out | Type of development/works will not result in cumulative effects. |
| Rear Extension, 54 Foyle Crescent, Newbuildings. | LA11/2015/0500/F | Single storey rear extension to dwelling. | Out | Type of development/works will not result in cumulative effects. |
| Rear Extension and Dwelling Alterations, 370 Victoria Road, Cloughcor, Strabane. | LA11/2015/0513/F | Alterations and rear extension to dwelling. | Out | Type of development/works will not result in cumulative effects. |
| Shop Sign, Unit 2 Pavillion Retail Park, Railway Street, Strabane. | LA11/2015/0515/A | Shop sign. | Out | Type of development/works will not result in cumulative effects. |
| Residential Dwelling, 4 Primrose Park, Sion Mills. | LA11/2015/0603/O | 2 no 2 storey dwelling houses with domestic garages. | Out | Development considered too small for cumulative effects. |

| Other Committed Development considered in Cumulative Effects | Application reference number | Description | Scoped in or out | Justification for inclusion on 2019 ESA |
|---|---|---|---|---|
| Two Storey Dwelling, land at rear of 10 Dunnalong Road, Magheramason. | LA11/2015/0613/O | Erect a detached 2 storey dwelling facing Victoria Road using existing vehicular access to provide access to property. | Out | Development considered too small for cumulative effects. |
| Single Storey Rear Extension, 1 Larch Drive, Sion Mills. | LA11/2015/0754/F | Single storey rear extension to dwelling consisting of bedroom & shower room. | Out | Type of development/works will not result in cumulative effects. |
| Powder Coating Unit and Repair Store, lands to the North West of Fab Plus Orchard Way Industrial Estate, Orchard Way, Strabane. | LA11/2015/0788/F | Proposed powder coating unit and repair store. | Out | Type of development/works will not result in cumulative effects. |
| Dwelling Extension, 28 Foyle Crescent, Newbuildings. | LA11/2015/0808/F | Proposed 2 storey side and rear extension to dwelling. | Out | Type of development/works will not result in cumulative effects. |
| Residential Development, immediately west of 7 Meadow Crescent, Sion Mills. | LA11/2015/0813/F | Terrace of 3 No two storey houses (amended proposal) | Out | Development considered too small for cumulative effects. |
| Residential Development, Brownfield land located adjacent to Woodside Road, Newbuildings. | LA11/2016/0051/PAN | We seek planning permission for a residential development. The site sits within Newbuildings settlement boundary and is adjacent to existing residential development. Former commercial land uses on site (IAWS Premises) have now ceased trading leaving the site unused and buildings vacant. | Out | Development considered too small for cumulative effects. |
| Permission for Use of Building, 96 Urney Road, Strabane. | LA11/2016/0101/LDE | The existing building was erected as a convenience shop unit and associated storage. Since approximately 2005 a portion of the store was converted to a fast food takeaway | Out | Type of development/works will not result in cumulative effects. |

| Other Committed Development considered in Cumulative Effects | Application reference number | Description | Scoped in or out | Justification for inclusion on 2019 ESA |
|---|---|---|---|---|
| | | and has been trading as such since that date. This application is for a certificate of lawfulness for the fast food takeaway portion of the building. | | |
| Signage Works, ASDA Strabane, 2 Branch Road, Strabane. | LA11/2016/0236/A | Signage to consist of both illuminated and non-illuminated associated to the new canopy and totem with recycling signage. 4 no Canopy Signs (2no illuminated 2 no non-illuminated) 4 no Disc Signs 1 no Totem Sign 1 no Recycling Sign | Out | Type of development/works will not result in cumulative effects. |
| Replacement Dwelling, lands 230m south of 11 Old Bridge Road, Newtownstewart. | LA11/2016/0352/F | Off site replacement dwelling with the existing mill building replaced with domestic garage and workshop | Out | Type of development/works will not result in cumulative effects. |
| New Dwelling on Farmland, approx. 40m north west of Oldcastle Road, Newtownstewart. | LA11/2016/0407/O | Proposed site for dwelling on a farm. | Out | Development considered too small for cumulative effects. |
| Environmental Statement Request, Kellys Sand & Gravel, Newtownstewart. | LA11/2016/0693/DETEIA | Request to determine whether an Environmental Statement is required | Out | Type of development/works will not result in cumulative effects. |
| Roof Conversion, 50 Urney Road, Strabane. | LA11/2016/0713/F | Proposed conversion of flat roof to pitched roof to existing rear return. | Out | Type of development/works will not result in cumulative effects. |
| Proposed Sectional Dwelling, adjacent 42 Old Chapel Road, Derrycreevy, Aughnacloy. | M/2014/0228/F | Proposed erection of sectional dwelling. | Out | Type of development/works will not result in cumulative effects. |

| Other Committed Development considered in Cumulative Effects | Application reference number | Description | Scoped in or out | Justification for inclusion on 2019 ESA |
|---|---|---|---|---|
| Residential Dwelling Development, 230m north of 60 Tullanafoile Road, Garavaghy, Dungannon. | M/2014/0262/RM | Proposed dwelling Max Ridge Height 8m with front and side returns and detached domestic garage | Out | Development considered too small for cumulative effects. |
| New Service Station, lands bounded by the A4 Annaghilla Road, A5 Tullyvar Road and Tullybryan Road, Ballygawley. | M/2014/0512/O | Provision of a service station to include fuel provision cafe shop tourist information toilets picnic area parking car wash and provision for park and share | Out | Type of development/works will not result in cumulative effects. |
| Replacement Dwelling, approx 100m SW of 68 Glenhoy Road, Ballygawley. | M/2014/0585/F | Proposed replacement dwelling with attached car port and domestic garage. | Out | Type of development/works will not result in cumulative effects. |
| New Access, 92 Glenhoy Road, Ballygawley. | M/2014/0589/F | New access. | Out | Type of development/works will not result in cumulative effects. |
| Dwelling and Garage Design Change, opposite 18 Feddan Road, Ballygawley. | M/2014/0591/F | Proposed revised design for dwelling and garage under construction approved under M/2007/1444/RM. | Out | Type of development/works will not result in cumulative effects. |

# TABLE D3 –CUMULATIVE EFFECTS FROM DIFFERENT PROJECTS

| Project | Distance from Proposed Scheme (m) | Map Reference | Cumulative Effects |
|---|---|---|---|
| Lifford Strabane Riverine Project<br>J/2013/0281/RM | 0 | 1 (Sheet 1) | The proposed Lifford Strabane Riverine Project comprises 47 acres of public space, parkland and community buildings, to include a new footbridge over the River Foyle proposed to provide a direct link between Lifford and Strabane.<br>Should construction of the Lifford Strabane Riverine Project occur during construction of Phase 2 (2023-2025) of the Proposed Scheme, there may be cumulative transboundary effects with regards to noise, air quality and visual during construction. However, these will be short term. The development is likely to have beneficial effects on health and well-being, local business and the sense of community, and overall, it is considered that the schemes will bring operational benefits to the area.<br>The Department will continue liaison with the promotors of the Riverine Project to minimise impacts. Overall, it has therefore been concluded that the cumulative effects with the Proposed Scheme would be not significant. |
| Three Rivers Development<br>J/2011/0433/O | 0 | 2 (Sheet 1) | The potential effects of the Three Rivers Development was assessed as part of the ES 2016 within Chapter 17- Interactions and Cumulative Effects. As there have been no relevant changes to the development's application, the conclusions of the ES 2016 still apply. It should be noted that the agreed planning conditions of the Three Rivers Development limits the scale of the development until the Proposed Scheme is constructed. This is to ensure the capacity of the road network is not exceeded. |
| N14/15 to A5 Link Road<br>no application number | 0 | 3 (Sheet 1) | The potential effects of the N14/15 Development were assessed as part of the ES 2016 within Chapter 17- Interactions and Cumulative Effects. As there have been no relevant changes to the development's application, the conclusions of the ES 2016 still apply. Both governments have agreed that this Link will be constructed at the same time as Phase 2 as the Link is a critical element of the future road network. |

| Project | Distance from Proposed Scheme (m) | Map Reference | Cumulative Effects |
|---|---|---|---|
| North West Greenway Network (Route 3)<br>LA11/2018/1109/F | 25 | 4 (Sheet 1) | The planning application involves construction of a 3m wide shared pedestrian and cyclist Greenway Path at Strabane By Pass (A5), and the widening of existing path infrastructure at Derry Road, Canal Basin, John Wesley St and Main St Strabane.<br>The Greenway Path (Route 3) site is located immediately east of the Proposed Scheme where it crosses the Mourne River in the north of Strabane. The application is currently undergoing consultation, and pending the application decision, it is anticipated construction would commence in October 2019 and run until July 2021. It is intended that construction of the Scheme in this location will take place during Phase 2 between 2023-2025. The construction stages of the two developments will therefore not overlap, and no cumulative effects will occur.<br>The Greenway Path will form part of the urban and road network of Strabane, so it's unlikely to have any adverse cumulative effects with the Proposed Scheme once in operation. Due to encouraging cycling and walking, the development is likely to have beneficial effects on health and well-being, air quality and noise. The development may also boost local business and the sense of community.<br>Overall, it has therefore been concluded that the cumulative effects with the Proposed Scheme would be not significant. |
| Quarrying in the Townland of Urbalreagh<br>LA11/2018/0226/F | 0 | 5 (Sheet 1 and 2) | The main works under consideration at the Quarrying in the Townlands of Urbalreagh site include a western and southern extension to previously extracted areas, a new haul road and realignment of existing internal road.<br>The site is east of Ardstraw in the immediate vicinity of Derg Road and the River Derg adjacent to and within the Proposed Scheme footprint. The construction of the Proposed Scheme in this location will take place during Phase 2 between 2023-2025. If planning permission is granted, it is proposed that works at the quarry will commence immediately for a duration of 3-3.5 years. Therefore, there is potential for an overlap with the construction period of the Proposed Scheme. The quarry works will be completed by the time the Proposed Scheme is in operation. Furthermore, it is |

| Project | Distance from Proposed Scheme (m) | Map Reference | Cumulative Effects |
|---|---|---|---|
| | | | planned in the long term that the extension areas will be restored to their former agricultural use.<br><br>There may be a cumulative impact on air quality as a result of dust and particulates being produced by construction activity and excavation works at the same time. Measurements at the existing quarry show dust at sensitive receptors to be below threshold levels. Furthermore, mitigation measures identified for the Proposed Scheme result in construction related dust and emissions not constituting a significant environmental effect.<br><br>There may be a cumulative impact on noise and vibration; the impact of extraction works on nearby receptors is anticipated to be slight, and the construction of bridge over the River Derg as part of the Proposed Scheme is identified as a location at high vibration risk. Provided identified mitigation measures are implemented, there will be no significant effects on noise and vibration.<br><br>The construction activity of the Proposed Scheme would introduce new vehicles to the area which may result in a cumulative impact with traffic movements of the quarry site. However, it is expected that the annual number of vehicle movements in and out of the main quarry access would not change as a result of the works, and mitigation proposed during construction of the Proposed Scheme includes traffic management.<br><br>Contamination of the ground water and watercourses which drain into the Foyle ASSI and SAC has been identified as a risk due to quarry works. This SAC is also identified as high importance area with respect to the Proposed Scheme. If protective and mitigation measures are implemented effectively, the significance of the pollution risk on the Foyle ASSI and SAC is likely to be neutral.<br><br>There are residential properties in this area which are anticipated to experience slight, moderate and large adverse visual impacts during construction of the Proposed Scheme. The visual impacts caused by the quarry works are identified as negligible to moderate, with earth bunds proposed as the main mitigation measure. Despite this proposed mitigation, it is likely that residential properties will experience a slight adverse cumulative visual effect. |

| Project | Distance from Proposed Scheme (m) | Map Reference | Cumulative Effects |
|---|---|---|---|
| | | | Overall, it has therefore been concluded that the cumulative effects with the Proposed Scheme would be not significant. |
| Lands 220 NW of No. 30 Baronscourt Road Newtownstewart (extension of time period of quarrying activities)<br><br>LA11/2016/0582/F | 225 | 6 (Sheet 2) | The planning application for the Lands 220 NW site involves extending the time period of previously approved works to excavate sand and gravel up to February 2024 and allowing the pit face to be worked on during the bird breeding season provided confirmation of no Sand Martins are present from an ecologist.<br><br>The site is located 250m north of Junction 10: Newtownstewart of the Proposed Scheme. It is intended that construction of the Proposed Scheme in this location will take place during Phase 2 between 2023-2025. Therefore, there may be overlap between construction activity of the Proposed Scheme and the works at Lands 200 NW, but there will be no overlap once the Proposed Scheme is in operation.<br><br>Lands 220 NW currently operates as an extraction site. The construction activity of the Proposed Scheme would introduce new vehicles to the area which may result in a cumulative impact with regards to traffic congestion and driver stress. Mitigation proposed during construction of the Proposed Scheme includes maintaining existing access or provision of temporary localised diversions.<br><br>The introduction of equipment and workers from the Proposed Scheme may increase noise and vibration levels, which could cause a cumulative impact with Lands 220 NW. The Proposed Scheme at Junction 10: Newtownstewart is not located in an area where construction noise would exceed threshold levels, nor will experience significant vibration following the implementation of mitigation.<br><br>The impact on air quality may also be exacerbated due to dust and particulates being produced by construction activity and excavation works, as well as emissions from vehicles. Mitigation measures identified for the Proposed Scheme result in construction related dust and emissions not constituting a significant environmental effect. |

| Project | Distance from Proposed Scheme (m) | Map Reference | Cumulative Effects |
|---|---|---|---|
| | | | Overall, due to the small nature of works at Lands 220 NW, the limited number of receptors in proximity to the site and the mitigation proposed the cumulative effects with the Proposed Scheme during operation would be not significant. |
| Gold Mine at Southern Edge of Sperrin Mountains<br>LA10/2017/1249/F | 13,688 | 7 (Sheet 2) | The planning application is for the underground valuable minerals mining, surface level development including processing plant and other associated development and ancillary works. The site is located on the southern edge of the Sperrin Mountains within the Sperrin Mountain Area of Outstanding Natural Beauty, approximately 17km east of the Proposed Scheme at Newtownstewart. Although the commencement date of the works is unknown, with the scheme currently at consultation stage, once construction starts it will last a period of approximately 24 months. There is potential that the construction phase of the Gold Mine development may overlap with the Proposed Scheme. The Gold Mine is located at a distance which will not amount to any cumulative effects with the Proposed Scheme once in operation.<br>The introduction of equipment and workers from the Proposed Scheme and the Gold Mine development may increase noise and vibration levels, which could cause a cumulative impact on human receptors, and ecological receptors such as bird assemblages. Newtownstewart is not located in an area where construction noise would exceed threshold levels, nor will experience significant vibration following the implementation of mitigation.<br>There may be permanent loss of some areas of blanket bog over both Schemes which is significant at the local (scale).<br>Overall, due to the distance of the sites from each other, the limited number of receptors in proximity to the site and the mitigation proposed, the cumulative effects with the Proposed Scheme would be not significant. |

| Project | Distance from Proposed Scheme (m) | Map Reference | Cumulative Effects |
|---|---|---|---|
| Lisanelly College, Omagh<br>LA10/2016/0711/RM | 1,466 | 8 (Sheet 2 and 3) | The planning application is for development of five core school buildings, shared facilities, sports pitches, associated ancillary accommodation, cycle parking areas, car and bus parking areas, associated site preparation, ancillary works and access points to Gortin Road and Strathroy Road.<br>The site is located approximately 1.5km east of the Proposed Scheme on the land west of Gortin Road in the centre of Omagh. Construction work has commenced and is due to be completed by 2021/22. Phase 2 of the Proposed Scheme commences in 2023, therefore there is no potential for cumulative effects during construction. It is not anticipated that Lisanelly College will result in any cumulative effects with the Proposed Scheme once in operation due to the distance and nature of the development.<br>The construction of Lisanelly College could result in changes to water levels on the River Strule which could impact flood water levels. Both the Proposed Scheme and Lisanelly College consider effects of climate change based on increasing 100 year flows by 20%.<br>Overall, it has therefore been concluded that the cumulative effects with the Proposed Scheme would be not significant. |
| Masterplan for Land Adjacent to Junction 7, Urney Road, Carricklee<br>no application number | 0 | 9 (Sheet 1) | The proposal is for the development of the land adjacent to Junction 7 on Urney Road. Derry City and Strabane Council are liaising with the Department on the development of the Masterplan for the area. Given this information, it has been concluded that the cumulative effects with the Proposed Scheme would be not significant. |
| Strathroy Link Road | 1,119 | 10 (Sheet 2 and 3) | The project is for the development of a new single-carriageway link road connecting the B48 Derry Road to U1526 Strathroy Road. The development is approximately 1.3km to the east of the Proposed Scheme near Gillygooley Road, Omagh. The link road is under construction and estimated for completion in 2019. Phase 2 of the Proposed Scheme which covers the area around Omagh is due for construction |

| Project | Distance from Proposed Scheme (m) | Map Reference | Cumulative Effects |
|---|---|---|---|
| | | | between 2023 – 2025. As such it has therefore been concluded that the cumulative effects with the Proposed Scheme would be not significant. |
| Poultry Shed, 116 Caledon Road, Aughnacloy<br>LA09/2016/1760/F | 1,002 | 11 (Sheet 3) | The planning application is for development of an additional free range poultry shed with 2 no. feed bins and a storage shed (poultry shed to contain 16,000 free range egg laying hens giving a total site capacity of 32,000 free range egg laying hens).<br>The site is located approximately 1 km south east of the Proposed Scheme on the land south of Caledon Road, Aughnacloy. Permission was granted for the Proposed Scheme in June 2017. Phase 3 of the Proposed Scheme commences in 2026 - 2028, therefore there is no potential for cumulative effects during construction. It is not anticipated that the Poultry Shed at 116 Caledon Road will result in any cumulative effects with the Proposed Scheme once in operation due to the distance and nature of the development.<br>Overall, it has therefore been concluded that the cumulative effects with the Proposed Scheme would be not significant. |
| Henhouse, Carnteel Road, Aughnacloy<br>LA09/2017/0757/F | 1,200 | 12 (Sheet 3) | The planning application is for development of a free range henhouse (layers) max 10000 birds with 2 no. meal bins and litter shed.<br>The site is located approximately 1.2 km north east of the Proposed Scheme on the land south east of 87 Carnteel Road, Aughnacloy. Permission was granted for the Proposed Scheme in December 2017. Phase 3 of the Proposed Scheme commences in 2026 - 2028, therefore there is no potential for cumulative effects during construction. It is not anticipated that the Henhouse at Carnteel Road will result in any cumulative effects with the Proposed Scheme once in operation due to the distance and nature of the development.<br>Overall, it has therefore been concluded that the cumulative effects with the Proposed Scheme would be not significant. |

| Project | Distance from Proposed Scheme (m) | Map Reference | Cumulative Effects |
|---|---|---|---|
| Poultry Sheds, 43 Errigal Road, Ballygawley<br><br>LA09/2018/1617/F | 350 | 13 (Sheet 3) | The planning application is for development of 1 no. additional broiler breeder laying poultry shed including a link to the existing one with 2 no. additional feed bins and associated site works, (The new shed will contain 8000 egg laying hens and 800 roosters, taking the total site capacity to 29000 egg laying hens and 2900 Roosters).<br><br>The site is located approximately 350m north of the Proposed Scheme on the land north west of 43 Errigal Road, Ballygawley. The application was received in December 2018 and consultations have subsequently been issued. Phase 1B of the Proposed Scheme commences in 2020 - 2023, therefore there is potential for cumulative effects during construction.<br><br>The construction activity of the Proposed Scheme would introduce new vehicles to the area which may result in a cumulative impact with regards to traffic congestion and driver stress. Mitigation proposed during construction of the Proposed Scheme includes maintaining existing access or provision of temporary localised diversions.<br><br>The introduction of equipment and workers from the Proposed Scheme may increase noise and vibration levels, which could cause a cumulative impact with the Poultry Sheds at Errigal Road. The Proposed Scheme near Errigal Road is not located in an area where construction noise would exceed threshold levels, nor will experience significant vibration following the implementation of mitigation.<br><br>The impact on air quality may also be exacerbated due to dust and particulates being produced by construction activity and excavation works, as well as emissions from vehicles. Mitigation measures identified for the Proposed Scheme result in construction related dust and emissions not constituting a significant environmental effect.<br><br>There may be some cumulative effects experienced during operation with the Proposed Scheme and the development at Errigal Road in terms of a negative visual impact within the local landscape and potential noise effects associated with the increased traffic from the Proposed Scheme and during operation of the Poultry Sheds. |

| Project | Distance from Proposed Scheme (m) | Map Reference | Cumulative Effects |
|---|---|---|---|
| | | | Overall, it has therefore been concluded that the cumulative effects with the Proposed Scheme would be minor. |
| Poultry Shed, Crevenagh Road, Omagh<br>LA10/2016/0973/F | 420 | 14 (Sheet 2 and 3) | The planning application is for development a free range poultry shed with 2 no. feed bins and a standby generator building (Poultry shed to contain 16000 free range egg laying hens).<br>The site is located approximately 420m north east of the Proposed Scheme on the land south east of 103 Crevenagh Road. Permission was granted for the Proposed Scheme in January 2017. Phase 1B of the Proposed Scheme commences in 2020 - 2023, therefore there is limited potential for cumulative effects during construction.<br>There may be some cumulative effects experienced during operation with the Proposed Scheme and the development at Crevenagh Road in terms of a negative visual impact within the local landscape and potential noise effects associated with the increased traffic from the Proposed Scheme and during operation of the Poultry Shed.<br>Overall, it has therefore been concluded that the cumulative effects with the Proposed Scheme would be not significant. |
| Housing Development, Beltany Grove, Omagh<br>LA10/2017/0257/F | 300 | 15 (Sheet 2 and 3) | The planning application is for a housing development comprising of 16 no. two storey dwellings, 2 no. detached garages and associated works.<br>The site is located approximately 300m east of the Proposed Scheme on the land adjacent to and north west of 40 Beltany Grove, Omagh. Permission was granted for the Proposed Scheme in September 2018. Phase 2 of the Proposed Scheme commences in 2023 - 2025, therefore there is limited potential for cumulative effects during construction. It is not anticipated that the Housing Development at Beltany Grove will result in any cumulative effects with the Proposed Scheme once in operation due to the nature of the development. |

| Project | Distance from Proposed Scheme (m) | Map Reference | Cumulative Effects |
|---|---|---|---|
| | | | Overall, it has therefore been concluded that the cumulative effects with the Proposed Scheme would be not significant. |
| Anaerobic Digestion Plant, Doogary Road, Omagh<br>LA10/2017/1193/F | 0 | 16 (Sheet 2 and 3) | The planning application is for a 500Kw centralised anaerobic digestion plant, combined heat and power plant (CHP), wheel washing, weighbridge, equipment store, silage clamps, new access and ancillary equipment and site.<br>The site is located adjacent to the Proposed Scheme on the land north east of 80 Doogary Road, Omagh. The application was received in November 2017 and is currently under consideration. Phase 2 of the Proposed Scheme commences in 2023 - 2025, therefore there is potential for cumulative effects during construction.<br>The construction activity of the Proposed Scheme would introduce new vehicles to the area which may result in a cumulative impact with regards to traffic congestion and driver stress. Mitigation proposed during construction of the Proposed Scheme includes maintaining existing access or provision of temporary localised diversions.<br>The introduction of equipment and workers from the Proposed Scheme may increase noise and vibration levels, which could cause a cumulative impact with the Anaerobic Digestion Plant at Doogary Road. The Proposed Scheme near Doogary is not located in an area where construction noise would exceed threshold levels, nor will experience significant vibration following the implementation of mitigation.<br>The impact on air quality may also be exacerbated due to dust and particulates being produced by construction activity and excavation works, as well as emissions from vehicles. Mitigation measures identified for the Proposed Scheme result in construction related dust and emissions not constituting a significant environmental effect.<br>There may be some cumulative effects experienced during operation with the Proposed Scheme and the development at Doogary Road in terms of a negative visual |

| Project | Distance from Proposed Scheme (m) | Map Reference | Cumulative Effects |
|---|---|---|---|
| | | | impact within the local landscape and potential noise effects associated with the increased traffic from the Proposed Scheme and during operation of the Anaerobic Digestion Plant.<br><br>Overall, it has therefore been concluded that the cumulative effects with the Proposed Scheme would be minor. |
| Housing Development, Tamlaght Road, Omagh<br><br>LA10/2018/0217/F | 325 | 17 (Sheet 2 and 3) | The planning application is for a housing development consisting of 25 no. dwellings (14 no. semi-detached and 11 no. detached), amenity space, landscaping, vehicle/pedestrian access with associated site works.<br><br>The site is located approximately 325m to the north east of the Proposed Scheme on the lands immediately adjoining and north west of the junction between Tamlaght Road and Brookmount Road, Omagh. Permission was granted for the application in January 2019. Phase 2 of the Proposed Scheme commences in 2023 - 2025, therefore it is unlikely there would be cumulative effects during construction. It is not anticipated that the Housing Development at Tamlaght Road will result in any cumulative effects with the Proposed Scheme once in operation due to the nature of the development.<br><br>Overall, it has therefore been concluded that the cumulative effects with the Proposed Scheme would be not significant. |
| Housing Development, Bradley's Way, Strabane<br><br>LA11/2016/0663/F | 360 | 18 (Sheet 1) | The planning application is for the demolition of 2 no. partially constructed dwelling houses constructed under permission J/2004/0074/F and construction of 23 no. dwelling houses consisting of 5 no detached and 18 no semi detached together with the relocation of the existing housing development entrance granted under J/2004/0074/F.<br><br>The site is located approximately 360m to the south east of the Proposed Scheme on the lands immediately south east of the LIDL Store on Bradley's Way, Strabane. Permission was granted for the application in April 2017. Phase 2 of the Proposed Scheme commences in 2023 - 2025, therefore it is unlikely there would be cumulative effects during construction. It is not anticipated that the Housing Development at |

| Project | Distance from Proposed Scheme (m) | Map Reference | Cumulative Effects |
|---|---|---|---|
| | | | Bradley's Way will result in any cumulative effects with the Proposed Scheme once in operation due to the nature of the development.<br><br>Overall, it has therefore been concluded that the cumulative effects with the Proposed Scheme would be not significant. |
| Land at Former IAWS, Woodside Road, Newbuildings<br><br>LA11/2019/0007/RM | 0 | 19 (Sheet 1) | The planning application is for the demolition of existing buildings, site remediation, repositioning of existing vehicular access on Woodside Road and the erection of 71 residential units and associated car parking provided both in-curtilage and on-street, together with the provision of centrally located public open space. The application is an amended layout to that approved under Outline Planning Permission Ref: LA11/2016/0753/O.<br><br>The site is located adjacent to the Proposed Scheme on the Lands at the former IAWS site, Woodside Road, Newbuildings. The planning application was submitted in December 2018 and is currently under consideration. Phase 1A of the Proposed Scheme commences in 2019 - 2022, therefore, there may be overlap between construction activity of the Proposed Scheme and the works at Lands at Former IAWS, but there will be no overlap once the Proposed Scheme is in operation.<br><br>The construction activity of the Proposed Scheme would introduce new vehicles to the area which may result in a cumulative impact with regards to traffic congestion and driver stress. Mitigation proposed during construction of the Proposed Scheme includes maintaining existing access or provision of temporary localised diversions.<br><br>The introduction of equipment and workers from the Proposed Scheme may increase noise and vibration levels, which could cause a cumulative impact with the Land at Former IAWS site. Human receptors north of Junction 1 have been identified to experience an adverse noise and visual impact during the construction phase.<br><br>The impact on air quality may also be exacerbated due to dust and particulates being produced by construction activity and excavation works, as well as emissions from vehicles. Mitigation measures identified for the Proposed Scheme result in |

| Project | Distance from Proposed Scheme (m) | Map Reference | Cumulative Effects |
|---|---|---|---|
| | | | construction related dust and emissions not constituting a significant environmental effect.<br><br>There may be some cumulative effects experienced during operation with the Proposed Scheme and the development at the Land at Former IAWS, Woodside Road in terms of a negative visual impact within the local landscape.<br><br>Overall, following implementation of the mitigation proposed, the cumulative impacts with the Proposed Scheme are expected to be minor. |
| Former Strabane Hospital, Derry Road, Strabane<br><br>LA11/2017/0299/F | 460 | 20 (Sheet 1) | The planning application is for the proposed development of private housing consisting of 24 no. semi detached dwellings and associated roads.<br><br>The site is located approximately 460m to the south east of the Proposed Scheme on the site of the former Strabane Hospital, Derry Road, Strabane. Permission was granted for the application in October 2018. Phase 2 of the Proposed Scheme commences in 2023 - 2025, therefore it is unlikely there would be cumulative effects during construction. It is not anticipated that the Housing Development on the former Strabane Hospital site will result in any cumulative effects with the Proposed Scheme once in operation due to the nature of the development.<br><br>Overall, it has therefore been concluded that the cumulative effects with the Proposed Scheme would be not significant. |
| Sites 10 – 19 Victoria Meadows, Magheramason<br><br>LA11/2017/0996/F | 80 | 21 (Sheet 1) | The planning application is for the erection of 10 no. dwellings with a change of house types on sites 10-19 from the initial application LA11/2018/0396/F. No change has been made to the existing PSD determined road layout.<br><br>The site is located approximately 80m to the east of the Proposed Scheme at Sites 10 – 19 Victoria Meadows, Victoria Road, Mangheramason. Permission was granted for the application in February 2018. Phase 1A of the Proposed Scheme commences in 2019 - 2022, therefore it is likely there would be cumulative effects in terms of noise, air quality and visual during construction. However, these will be short term and localised. It is not anticipated that Sites 10 – 19 Victoria Meadows, Magheramason will |

| Project | Distance from Proposed Scheme (m) | Map Reference | Cumulative Effects |
|---|---|---|---|
| | | | result in any cumulative effects with the Proposed Scheme once in operation due to the nature of the development.<br><br>Overall, it has therefore been concluded that the cumulative effects with the Proposed Scheme would be not significant. |
| Housing Development, Tullyvar Road, Aughnacloy<br><br>M/2015/0097/F | 270 | 22 (Sheet 3) | The planning application is for the development of 40 units of detached, semi detached, terrace, apartments, a state road and a foul water treatment plant.<br><br>The site is located approximately 270m to the south of the Proposed Scheme at 46 Tullyvar Road, Aughnacloy. Permission was granted for the application in September 2017. Phase 3 of the Proposed Scheme commences in 2026 - 2028, therefore it is unlikely there would be cumulative effects during construction. It is not anticipated that the development at Tullyvar Road will result in any cumulative effects with the Proposed Scheme once in operation due to the nature of the development.<br><br>Overall, it has therefore been concluded that the cumulative effects with the Proposed Scheme would be not significant. |
| Residential Development, lands to the east of 1 - 3 Lismore Park, Sion Mills<br><br>LA11/2017/1064/F | 280 | 23 (Sheet 1 and 2) | The planning application if for the proposed development of 14 no. houses, consisting of 7 no. 4 person 2 bedroom general needs houses, 3 no. 2 person 1 bedroom general needs apartments, 2 no. 5 person 3 bedroom general needs houses, 1 no. 5 person 3 bedroom complex needs house and 1 no. 3 person 2 bedroom complex needs house.<br><br>The site is located approximately 280m to the east of the Proposed Scheme at the lands to the east of 1-3 Lismore Park, Sion Mills. Permission was granted for the application in March 2018. Phase 2 of the Proposed Scheme commences in 2023 – 2025, therefore it is unlikely there would be cumulative effects during construction. It is not anticipated that the lands to the east of 1 - 3 Lismore Park will result in any cumulative effects with the Proposed Scheme once in operation due to the nature of the development.<br><br>Overall, it has therefore been concluded that the cumulative effects with the Proposed Scheme would be not significant. |

| Project | Distance from Proposed Scheme (m) | Map Reference | Cumulative Effects |
|---|---|---|---|
| Residential Development, Victoria Meadows, Magheramason<br><br>LA11/2016/0590/F | 50 | 24 (Sheet 1) | The planning application is for the erection of 14 dwellings (amendment to previously approved housing layout approved under J/2007/0200/F reducing proposed numbers by 5 dwellings).<br><br>The site is located approximately 50m to the east of the Proposed Scheme at the site at Victoria Meadows, Magheramason. Permission was granted for the application in February 2017. Phase 1A of the Proposed Scheme commences in 2019 - 2022, therefore it is unlikely there would be cumulative effects during construction. It is not anticipated that the site at Victoria Meadows, Magheramason will result in any cumulative effects with the Proposed Scheme once in operation due to the nature of the development.<br><br>Overall, it has therefore been concluded that the cumulative effects with the Proposed Scheme would be not significant. |
| Wind Turbine, Strahans Road, Strabane<br><br>LA11/2015/0572/F | 255 | 25 (Sheet 1) | The planning application is for the erection of a wind turbine with 40m hub height and 54m rotor diameter.<br><br>The site is located approximately 255m east of the Proposed Scheme at the site 273m north east of 7 Strahans Road, Strabane. The application is currently under consideration. Phase 2 of the Proposed Scheme commences in 2023 – 2025, therefore it is unlikely there would be cumulative effects during construction.<br><br>There may be some cumulative effects experienced during operation with the Proposed Scheme and the development at Strahans Road in terms of a negative visual impact within the local landscape.<br><br>Overall, it has therefore been concluded that the cumulative effects with the Proposed Scheme would be not significant. |

| Project | Distance from Proposed Scheme (m) | Map Reference | Cumulative Effects |
|---|---|---|---|
| Freestand Restaurant, Junction of Railway Street and Park Road, Strabane<br><br>LA11/2015/0423/F | 230 | 26 (Sheet 1) | The planning application is for the erection of a freestand restaurant with associated drive thru, carparking, landscaping and associated works. Installation of 2. No COD with associated canopies and external play area.<br><br>The site is located approximately 230m to the south east of the Proposed Scheme at the land at the junction of Railway Street and Park Road, Strabane. Permission was granted for the application in August 2016. Phase 2 of the Proposed Scheme commences in 2023 – 2025, therefore it is unlikely there would be cumulative effects during construction. It is not anticipated that the land at the junction of Railway Street and Park Road will result in any cumulative effects with the Proposed Scheme once in operation due to the nature of the development.<br><br>Overall, it has therefore been concluded that the cumulative effects with the Proposed Scheme would be not significant. |
| Synthetic Football Pitch, lands south east of Mountjoy United FC, Lisnagirr Road, Omagh<br><br>LA10/2016/1289/F | 312 | 27 (Sheet 2) | The planning application is for the development of a synthetic football pitch, a new car park, external lighting and associated ancillary works.<br><br>The site is located approximately 312m to the east of the Proposed Scheme at the lands south east of Mountjoy United FC, Lisnagirr Road, Omagh. Permission was granted for the application in May 2017. Phase 2 of the Proposed Scheme commences in 2023 – 2025, therefore it is unlikely there would be cumulative effects during construction. It is not anticipated that the site at the lands south east of Mountjoy United FC, Lisnagirr Road will result in any cumulative effects with the Proposed Scheme once in operation due to the nature of the development.<br><br>Overall, it has therefore been concluded that the cumulative effects with the Proposed Scheme would be not significant. |
| Residential Development, Newtownsaville Road, Omagh<br><br>K/2014/0497/F | 0 | 28 (Sheet 3) | The planning application is for the proposed development of 11 no. detached dwellings including garages plus associated works.<br><br>The site is located approximately adjacent to the Proposed Scheme at the lands to the west of 217, 217a and 317b Newtwonsaville Road and land south east of the |

| Project | Distance from Proposed Scheme (m) | Map Reference | Cumulative Effects |
|---|---|---|---|
| | | | Springfield Road and Newtownsaville Road Junction. Permission was granted for the application in March 2016. Phase 2 of the Proposed Scheme commences in 2023 – 2025, therefore it is unlikely there would be cumulative effects during construction. It is not anticipated that the land to the west of 217, 217a and 317b Newtwonsaville Road and land south east of the Springfield Road and Newtownsaville Road Junction will result in any cumulative effects with the Proposed Scheme once in operation due to the nature of the development.<br><br>Overall, it has therefore been concluded that the cumulative effects with the Proposed Scheme would be not significant. |

# Appendix E

## FIGURES