

19 Assessment of Cumulative Effects

This chapter considers the potential for cumulative impacts of the proposed scheme (Type 1 impacts), and those of the proposed scheme in-combination with other 'reasonably foreseeable' developments (Type 2 impacts). The assessment of Type 2 impacts takes into account other relevant road infrastructure schemes and developments committed through the Inner Moray Firth Local Development Plan (IMFLDP).

The potential for cumulative impacts due to the combined effect of a number of different environmental impacts of the proposed scheme on a single receptor/resource was assessed, based on the findings of the topic chapters in this Environmental Impact Assessment Report (EIAR). The assessment concluded that no significant Type 1 cumulative impacts were expected as a result of the proposed scheme.

The potential for cumulative impacts resulting from the proposed scheme in combination with 'reasonably foreseeable' developments was reviewed (Type 2 impacts). A number of potential significant adverse Type 2 cumulative impacts are anticipated, and these are related to the planned urban expansion at Inverness East as established in the IMFLDP and Inverness East Development Brief (IEDB). The proposed scheme is key to delivering the infrastructure required to support the development of the area.

During construction there is potential for a significant Type 2 cumulative impact for receptors at Inshes Holdings if the construction of the Inshes Overbridge of the proposed scheme is undertaken concurrently with the Inshes Junction Improvement – Phase 2 works in this area. These potential impacts should be taken into account in the development of the construction programme for both schemes.

The potential for significant Type 2 cumulative impacts during operation relate to the following:

- Visual impacts for receptors along U1058 Caulfield Road North and at Inshes Holdings as a result of the proposed development at Ashton Farm (LA08 (IN83: Ashton Farm and adjoining land)) and the Inshes Junction Improvement – Phase 2 developments, respectively.
- Further material changes to the landscape character of the Enclosed Farmed Landscapes Local Landscape Character Area (LLCA) as a result of development in the Inverness East area in particular the development at Stratton (PA15) and the proposed development at Ashton Farm (LA08: IN83: Ashton Farm and adjoining land).
- Loss of prime agricultural land and fragmentation of badger foraging habitat as a result of development in the Inverness East area including the development at Inverness Campus (LA03/PA11), Stratton (PA15) and proposed development at Ashton Farm (LA08: IN83: Ashton Farm and adjoining land).
- The proposed development at Ashton Farm (LA08 (IN83: Ashton Farm and adjoining land)) has the potential for significant additional land-take of Seafield Park Partnerships, Ashton Farm (K&C Munro, Ashton Suffolks) and Ashton Farm East agricultural land interests.
- Further loss to the integrity of the setting of the Scheduled Monument (Asset 14) and Stratton Possible Hut Circle (Asset 45) and severance of cultural heritage assets from other pre-historic archaeological remains, mainly as a result of the proposed development at Ashton Farm (LA08 (IN83: Ashton Farm and adjoining land)).

As the potential Type 2 cumulative impacts mainly relate to developments for which further design and development is required, the overall cumulative significance of these, and any appropriate mitigation, would need to be further considered through the associated planning applications and environmental assessments for these developments.

It is further acknowledged that, depending on the detailed design for the other developments in the area, additional cumulative impacts are possible. Conversely, it may be possible to mitigate construction impacts through coordination and refinement of the construction programmes, but these are not known at this stage. This should continue to be considered by The Highland Council in relation to the aspirations and requirements of the IMFLDP and in future development assessments as more information becomes available.

19.1 Introduction

- 19.1.1 Annex IV of the Environmental Impact Assessment (EIA) Directive (2014/52/EU) (amending Directive 2011/92/EU) requires the consideration of the cumulative impacts of the proposed project within the

- Environmental Impact Assessment Report (EIAR) and this is reflected within Schedule 1A of The Roads (Scotland) Act 1984 (Environmental Impact Assessment) Regulations 2017.
- 19.1.2 The term 'cumulative' is not defined within the EIA Directive; however, the European Commission (EC) guidelines (European Commission 1999) define 'cumulative impacts' as '*Impacts that result from incremental changes caused by other past, present or reasonably foreseeable actions together with the project*'.
- 19.1.3 The Design Manual for Roads and Bridges (DMRB) HA218/08 (Highways Agency, Scottish Government, Welsh Assembly Government, The Department for Regional Development Northern Ireland 2008a) (hereafter referred to as HA218/08), provides a glossary of technical terms. The glossary expands on the above definition, noting that a cumulative impact may arise as the result of:
- a) *'the combined impact of a number of different environmental topic specific impacts from the proposed scheme on a single receptor/resource; and*
 - b) *'the combined impact of a number of different projects within the vicinity (in combination with the proposed scheme) on a single receptor/resource'.*
- 19.1.4 Taking the above into account, the cumulative impacts refer to how an environmental receptor/resource may be subject to a particular type of impact from more than one development/project. The impacts from multiple developments/projects may overlap, or act in combination, at a particular location or upon a particular receptor/resource, thereby leading to more significant environmental effects than if the impacts were considered in isolation. For example, two visually intrusive developments/projects proposed within a sensitive landscape may lead to more significant landscape and visual impacts than just one of the developments/projects considered in isolation.
- 19.1.5 The assessments as reported in Chapters 7 to 17 of this EIAR have, where relevant, already taken into account the potential for cumulative impacts within a specific topic area as a result of a number of different activities affecting a single receptor. An example of this is Chapter 11 (Ecology and Nature Conservation), which identifies a single level of overall significance for each ecological receptor, taking into account a number of different impacts affecting the same receptor (such as habitat loss (land-take), impacts as a result of noise and vibration and water pollution). This cumulative impact assessment refers back to this approach but does not aim to arbitrarily extract the cumulative element of these assessments.
- 19.1.6 The potential cumulative impact in relation to changes in traffic levels as a result of the proposed scheme in combination with other relevant developments (as noted in the Inner Moray Firth Local Development Plan (hereafter referred to as the IMFLDP), The Highland Council 2015a) has already been incorporated within the assessment where required, and no supplementary assessment is required. The following assessments have utilised traffic data to inform the EIA:
- Chapter 7: Air Quality;
 - Chapter 8: Noise and Vibration;
 - Chapter 13: Road Drainage and the Water Environment; and
 - Chapter 16: People and Communities - All Travellers.

19.2 Methodology

General Approach

- 19.2.1 The approach to the cumulative assessment has taken into account guidance provided in the following documents:
- DMRB Volume 11, Section 2, Part 5 HA205/08: Assessment and Management of Environmental Effects (Highways Agency, Scottish Government, Welsh Assembly Government and The

Department for Regional Development Northern Ireland 2008b) (hereafter referred to as DMRB HA208/08);

- DMRB Volume 11, Section 2, Part 6 HD48/08: Reporting of Environmental Impact Assessments (Highways Agency, Scottish Government, Welsh Assembly Government and The Department for Regional Development Northern Ireland 2008c) (hereafter referred to as DMRB HD48/08);
- Interim Advice Note (IAN) 125/09 (Highways Agency 2009) (hereafter referred to as IAN 125/09 – this guidance note has been replaced by IAN 125/15, however guidance on cumulative impacts has been taken into account for this assessment);
- Interim Advice Note (IAN) 125/15 (Highways England 2015) (this guidance note replaces IAN125/09 and is hereafter referred to as IAN 125/15); and
- Planning Circular 1 2017: The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 (Scottish Government 2017a).

19.2.2 This chapter considers the following two categories of scenario to identify potential for significant cumulative impacts, based on the definition provided in DMRB HA218/08:

- Type 1: the combined effects of a number of different environment topic specific impacts arising as a result of the proposed scheme on a single sensitive receptor/resource; and
- Type 2: the combined effects of the proposed scheme with other ‘reasonably foreseeable’ developments on a single sensitive receptor/resource.

Type 1 Cumulative Impacts

19.2.3 To consider the potential for a combined effect of different environmental topic-specific impacts on a single receptor/resource, a three-step process has been followed.

Step 1: Review of EIAR Residual Impacts

19.2.4 A review of the residual impacts from the individual topic assessments was undertaken and, using professional judgement, the potential for interaction with other topic areas was identified. For the proposed scheme, sensitive receptors (e.g. residential properties) had the potential to be impacted through a change in air quality or visual amenity, by noise and vibration, land-take and/or a change in access to/from properties, with the combination of these resulting in potential combined impacts.

Step 2: Identification of Cumulative Impacts

19.2.5 Cumulative impacts were identified where significant impacts (Moderate or above) were assessed in two or more disciplines. In addition, professional judgement was used to determine where multiple non-significant impacts (Slight or Slight/Moderate) combined to result in a cumulative impact.

Step 3: Identification of Significant Cumulative Impacts

19.2.6 Where cumulative impacts were identified, the nature of these combined impacts were considered e.g. duration (temporary or permanent), extent, frequency and sensitivity of the receptor, and the significance determined using professional judgement.

19.2.7 As noted in ‘Step 2’ the assessment focuses on the impacts summarised in Chapter 21 (Summary of Significant Residual Impacts), which are those that are expected to remain as significant (e.g. Moderate or above) in the context of the EIA Regulations after application of any proposed mitigation; these generally have the greatest potential to contribute to a significant cumulative impact. However, it is also acknowledged that there is potential that multiple non-significant impacts in combination could result in a significant cumulative impact, and therefore residual impacts of Slight significance and above were reviewed. Impacts of negligible or neutral significance were excluded from the assessment as by definition they are inconsequential.

19.2.8 Impacts on waterbodies, ecological receptors, cultural heritage assets and non-motorised user (NMU) routes were not considered in the identification of Type 1 cumulative impacts, as these assessments already take into account a combination of environmental parameters when determining significance of impact. For example, to determine impacts on the setting of a cultural heritage asset the assessment takes into account the proximity to the proposed scheme, land-take and landscape, visual and noise impacts.

Type 2 Cumulative Impacts

19.2.9 To consider the potential for a combined effect of the proposed scheme with other 'reasonably foreseeable' developments on a single sensitive receptor/resource, a three-step process has been followed.

Step 1: Identification of 'reasonably foreseeable' developments

19.2.10 The study area was defined as up to 500m from the proposed scheme for the purposes of initial identification of 'reasonably foreseeable' developments. Following this, a wider area search beyond 500m of additional projects that may contribute to a cumulative impact was undertaken.

19.2.11 DMRB HA205/08 defines 'reasonably foreseeable' as projects that are 'committed' including (but not necessarily be limited to):

- confirmed trunk road and motorway projects (i.e. gone through the statutory processes); and
- development projects with valid planning permissions as granted by the Local Planning Authority, and for which a formal EIA is a requirement or for which non-statutory environmental impact assessment has been undertaken.

19.2.12 In relation to trunk road and motorway projects, those schemes which are known to be interdependent with the proposed scheme and not included as part of the future baseline for the assessment (refer to Chapter 5: Overview of Assessment), were also considered within this cumulative assessment. However, the level of detail currently available for these schemes may be limited, and where this is the case, this is reflected in the level of assessment undertaken, and the level of certainty that can be applied to the conclusion on the potential for cumulative impact.

19.2.13 A review of other developments beyond those that are 'committed' (as defined by HA205/08) has also been undertaken to ascertain whether any should justifiably be included in the assessment by virtue of their scale, location or timing. These were identified through a review of the adopted IMFLDP (The Highland Council 2015a) and its supplementary guidance; the Inverness East Development Brief (hereafter referred to as the IEDB) (The Highland Council 2018) and the Inshes and Raigmore Development Brief (hereafter referred to as the I&RDB) (The Highland Council 2015c).

19.2.14 In relation to developments beyond those which are 'committed', the Scottish Government Planning Circular 1 2017: The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 (Paragraph 45), states that '*Generally, it would not be feasible to consider the cumulative impacts with other applications which have not yet been determined, since there can be no certainty that they will receive planning permission*'. However, as the proposed scheme is integral to planned growth within the Inverness East area, it is considered appropriate to include relevant development allocations from the IMFLDP within the Type 2 assessment. As the level of detail available for these proposed schemes is currently limited, this is reflected in the level of assessment that has been undertaken, and the level of certainty that can be applied to the conclusions on the potential for cumulative impacts.

19.2.15 Throughout this assessment the '*committed*' and '*other developments beyond those which are committed*' are collectively referred to as 'reasonably foreseeable' developments.

Step 2: Potential for Significant Cumulative Impacts

- 19.2.16 Once 'reasonably foreseeable' developments were identified and agreed, professional judgement was used to 'scope out' any of the developments that are not considered likely to have in combination significant cumulative impacts. This involved a review of the developments based on their location, type or status of development and a review of relevant environmental information included within planning applications, published environmental assessments; or in the case of developments included within the IMFLDP and supplementary guidance, a review of the information provided within the IMFLDP Strategic Environmental Assessment (SEA) (The Highland Council 2015b) and the requirements stated in the IMFLDP and supplementary guidance for the allocated developments.

Step 3: Review of Cumulative Impacts

- 19.2.17 The 'reasonably foreseeable' developments identified as having the potential for significant Type 2 cumulative impacts were subject to a topic by topic review, relying on professional judgement to determine the potential for combined impacts. The review considered all findings of this EIAR and the available information regarding other 'reasonably foreseeable' developments.
- 19.2.18 Where information on the significance of potential impacts of 'reasonably foreseeable' developments was available, the assessment of 'Type 2' cumulative impacts focused on the impacts that were expected to remain as significant (e.g. Moderate or above) in the context of the EIA Regulations after application of any proposed mitigation; these generally have the greatest potential to contribute to a significant cumulative impact. However, as for the assessment of 'Type 1' cumulative impacts, it is also acknowledged that there is potential that non-significant impacts on the same receptor from multiple projects could in combination result in a significant cumulative impact. Therefore, where information was available, residual impacts of Slight significance and above were reviewed.
- 19.2.19 Where the available information on 'reasonably foreseeable' developments was not sufficiently detailed to quantify cumulative impacts, professional judgement was used to qualitatively ascertain the likelihood of cumulative impacts on receptors.

Limitations to Assessment

- 19.2.20 The cumulative impact assessment has utilised available information on 'reasonably foreseeable' developments, which is often not sufficiently detailed to quantify cumulative impacts. As such professional judgement was used where necessary to qualitatively ascertain the likelihood of environmental impacts on receptors that may also be affected by the proposed scheme.
- 19.2.21 Where sufficient information is not available, it is not possible or appropriate for this assessment to consider in detail the potential environmental impacts associated with the 'reasonably foreseeable' developments, and such impacts would need to be addressed for these developments as they are progressed, either through the planning system or as part of further environmental assessment.

19.3 Potential Cumulative Impacts

Type 1 Cumulative Impacts

- 19.3.1 The Type 1 cumulative impacts during construction and operation are discussed below.

Construction

- 19.3.2 Chapter 4 (The Proposed Scheme) and Appendix A4.1 (Construction Information) provide information regarding the timing/programming and type of construction activities anticipated at present. The precise details of these would be dictated by the contractor(s) detailed design and construction methodology.
- 19.3.3 During construction, those properties closest to the works may be subject to several types of temporary disturbance such as changes to noise and vibration, air quality, visual amenity and access to/from properties. Properties within 100m of the proposed scheme are identified in Appendix A8.7 (Noise

Sensitive Receptors Nearest to Construction Works) and these are expected to be most impacted during construction. Mitigation is proposed in the relevant chapters to mitigate potential impacts during construction. Key controls to facilitate implementation of this mitigation would be set out in the Construction Environmental Management Plan (CEMP) which is required by the mitigation measures set out in Chapter 20 (Schedule of Environmental Commitments) (**Mitigation item SM-01**).

- 19.3.4 Following mitigation, it is anticipated that any potentially significant adverse air quality and noise and vibration impacts during construction are unlikely to arise and any that do would be short-term in nature. The visual assessment identifies 41 built receptor groups (193 properties) that are likely to experience Moderate or above impacts during construction and these are detailed in Appendix A10.1 (Built Receptor Assessment).
- 19.3.5 Taking into account the above, residual impacts identified in this EIAR are not, in combination, considered to constitute an additional cumulative significant impact on any receptor during construction.

Operation

- 19.3.6 Receptors potentially affected by Type 1 cumulative impacts during operation are set out in Table 19.1. Whilst there are other properties within the study area that may experience some degree of environmental impact, those which are likely to have the greatest potential for overall cumulative impacts are identified. All of these cumulative impacts are considered to be not significant.

Table 19.1: Potential for Operational Impacts of the Proposed Scheme (Type 1 Cumulative Impacts)

Receptor	Description of Individual Impacts	Cumulative Impact
Properties at Cradlehall	Residential properties in Cradlehall (particularly built receptors 32 to 36 as identified within Chapter 10: Visual Assessment) are expected to experience a Moderate/Substantial (Winter Year Opening (WYO)) visual impact as a result of the proposed scheme being in close proximity to the receptors. This impact reduces to Moderate (Summer Year 15 after opening (SY15)). Residential properties are expected to experience an increase in noise levels, although this is not considered to be significant (i.e. Slight/Moderate significance or above <u>and</u> above the absolute noise threshold (59.5dB L _{A10,18h} (day) and 55dB L _{night, outside} (night)).	Not Significant
Properties at Castlehill Court	Residential properties in Castlehill Court (receptor 27 as identified within Chapter 10: Visual Assessment) are expected to experience a Slight/Moderate (WYO) visual impact as a result of the proposed scheme being in close proximity to the receptors. This impact reduces to Slight (SY15). Properties at Castlehill Court (No 5 to 12, 12A and 14) are predicted to experience a significant increase in noise levels in the short-term (Slight/Moderate adverse impacts and above the absolute noise threshold (59.5dB L _{A10,18h} (day))). No significant adverse noise impacts are predicted in the long-term at these receptors.	Not Significant
Culloden House Care Home (currently under construction)	Significant visual impacts are expected as a result of the proposed scheme during the WYO; the significance level is not defined as this receptor is currently under construction. However, it is noted in Chapter 10 (Visual) that by SY15, once the mixed and riparian woodland, scrub and heavy standard tree mitigation planting has become established, impacts on visual amenity would reduce to below significant. Culloden House Care Home is predicted to experience a significant increase in noise levels in the short-term (Slight/Moderate adverse impacts and above the absolute noise threshold (59.5dB L _{A10,18h} (day))). No significant adverse noise impacts are predicted in the long-term at this receptor.	Not Significant
Ashton Farm Cottages*	Ashton Farm Cottages (receptor 40 in Chapter 10: Visual Assessment) are expected to experience a Substantial visual impact (WYO) as a result of the proposed scheme being in close proximity to the property. This impact reduces to Moderate (SY15).	Not Significant

Receptor	Description of Individual Impacts	Cumulative Impact
	Ashton Farm Cottages are expected to experience an increase in noise levels; however, these impacts are not considered to be significant as the noise levels are not above the absolute noise threshold (59.5dB L _{A10,18h} (day) and 55dB L _{night, outside} (night)).	
Ashton Farm Farmhouse*	Ashton Farm (receptor 41 in Chapter 10: Visual Assessment) is expected to experience a Substantial visual impact (WYO) as a result of the proposed scheme being in close proximity to the property. This impact reduces to Moderate (SY15). Ashton Farm is expected to experience an increase in noise levels; however, these impacts are not considered to be Significant as the noise levels are not above the absolute noise threshold (59.5dB L _{A10,18h} (day) and 55dB L _{night, outside} (night)).	Not Significant

* Ashton Farm Cottages and Ashton Farm Farmhouse form part of K&C Munro, Ashton Suffolks and Ashton Farm East agricultural businesses, respectively. The cumulative impact (e.g. from land-take, severance of fields and disruption of drainage) on these agricultural businesses is considered in Chapter 15 (People and Communities – Community and Private Assets).

Type 2 Cumulative Impacts

- 19.3.7 As noted in Section 19.2 (Methodology) ‘reasonably foreseeable’ developments were reviewed for their potential to have significant cumulative impacts in combination with the proposed scheme. It should be noted that currently available information on these ‘reasonably foreseeable’ developments has been utilised to inform the assessment, and this is often not sufficiently detailed to quantify cumulative impacts. As such professional judgement was used where necessary to qualitatively ascertain the likelihood of environmental impacts on receptors that may also be affected by the proposed scheme.
- 19.3.8 Table 19.2 sets out the ‘reasonably foreseeable’ developments which were considered for inclusion in the cumulative assessment. Planning applications and development land allocations are shown on Figure 15.4 (which accompanies Chapter 15: People and Communities - Community and Private Assets).

Table 19.2: Review of Reasonably Foreseeable Developments (Type 2 Cumulative Impacts)

Reference	Description	Information Available	Further considered in CIA
Road Projects			
A96 Dualling (Inverness to Nairn - including Nairn Bypass)	The dualling of the A96 between Inverness and Nairn, including the Nairn Bypass is included within the baseline of this EIAR as described in Chapter 5 (Overview of Assessment Process).	A96 Dualling Inverness to Nairn (including Nairn Bypass) Environmental Statement (Jacobs 2016)	No
A96 Dualling (Hardmuir to Fochabers)	Route options assessment work is complete, and a preferred option has been selected. The preferred option is currently undergoing further design development and assessment and Transport Scotland aims to publish draft Orders for this scheme during the second half of 2020. Approx. 30km to the east of the proposed scheme, no cumulative impacts anticipated.	Information available on the Transport Scotland Website (Transport Scotland 2019c).	No
A96 Dualling (East of Fochabers to East of Huntly)	Route option assessment is expected to commence in 2019. Approx. 45km to the east of the proposed scheme, no cumulative impacts anticipated.	Information available on the Transport Scotland Website (Transport Scotland 2019b).	No
A9 Dualling (Tomatin to Moy)	A9 Dualling programme will upgrade 129 km of the route between Perth and Inverness to dual carriageway to complete the dualling of the A9 (48km of the A9 between Perth and Inverness is already a dual carriageway) by 2025. The section of the A9 within the study area of the proposed scheme is currently dualled, with the most northerly section of the A9 Dualling programme between Tomatin to Moy approx. 16km to the south of the proposed scheme. The draft Orders and the Environmental Statement (ES) for this scheme (A9 Dualling Tomatin to Moy) were published on 18 May 2018. Chapter 4 (The Proposed Scheme) of the A9 Dualling Tomatin to Moy ES assumes a construction start date in 2020 over a period of 30 months. There is potential for overlap during construction with the proposed scheme; however, due to the distance from the proposed scheme, cumulative effects on the same receptors are not anticipated.	A9 Dualling Tomatin to Moy Environmental Statement (Atkins Mouchel 2018)	No
A9/A82 Longman Junction Improvement Scheme	Public exhibitions were held on 25 and 26 June 2019 to present the preferred option for the proposed scheme to replace Longman Roundabout with a new grade-separated junction. Located approx. 2km to the north of the A9 southbound lane gain/lane drop section of the proposed scheme. Potential for construction overlap with the proposed scheme; latest information indicates that earliest construction date would be 2022.	Information available on Transport Scotland Website from Public Exhibitions in June 2019 (Transport Scotland 2019a).	Yes – Construction.

Reference	Description	Information Available	Further considered in CIA
	The Moray Firth Special Area of Conservation (SAC) is located to the north/north-east of the junction improvement works. The Habitat Regulations Appraisal for the A9/A96 proposed scheme concludes no Likely Significant Effect (LSE) on any European/Ramsar site and no potential for in-combination effects with other plans or projects. No cumulative impacts expected.	HRA for A9/A96 Inshes to Smithton (Jacobs 2019)	
Inshes Junction Improvements - Phase 2	<p>Current proposals for Inshes Junction Improvements - Phase 2 involve making several improvements to junctions on the B9006 Culloden Road and B9006 Old Perth Road, tying-in to the west of the proposed scheme after the Inshes Overbridge. The aim is to ease traffic congestion which has increased since the opening of the Inverness Campus to the east.</p> <p>As noted in Chapter 5 (Overview of the Assessment), <i>'the proposed scheme would not be delivered without the Inshes Junction Improvement - Phase 2 project and vice-versa; they are inter-dependent on one another. However, at the time of writing studies are ongoing regarding the optimum design solution for the Inshes Junction Improvement - Phase 2 project and as such there is insufficient information available on the design and mitigation to incorporate the project into the future baseline. Therefore, the Inshes Junction Improvement - Phase 2 project is considered along with other proposed developments within the cumulative assessment (Chapter 19: Assessment of Cumulative Effects)'</i>.</p> <p>As the proposed schemes are inter-dependent it is assumed some overlap during construction is likely (in particular where the two schemes connect) and therefore there is the potential for cumulative impacts.</p> <p>As the junction improvement connects to the proposed scheme there is potential for both schemes to impact on some of the same receptor(s). Therefore, there is the potential for cumulative impacts during operation.</p>	Information available on The Highland Council website and information from Community Council meeting in November 2015 (The Highland Council 2015d).	Yes – Construction and Operation.
Planning Applications			
PA04 (16/00025/REFIN) – Inshes Retail Park (LA02 of this EIAR) Appeal Reference - PPA-270-2152	<p>Expansion of Inshes Retail Park.</p> <p>Planning application located within land allocation IN58 of the IMFLDP (The Highland Council 2015a) (reference LA02 in this EIAR). Planning permission refused in 2016, then Planning Permission in Principle (PPP) granted through appeal in February 2017.</p> <p>Development proposed is for mixed use extension to Inshes District Centre to include up to 4,700 sqm of class 1, 2 and 3 uses; public house/restaurant incorporating manager's residential accommodation; community allotments; all with associated engineering works, car parking, servicing, new access roads and landscaping.</p> <p>Condition 5 of the appeal decision notice states that no trading should commence from the development until (1) parking/access arrangements (which require to be approved) have been constructed and that at least one year has passed from the date on which a contract has been let for construction of the Inshes Junction Improvements Phase 2, or (2) that parking and access arrangements have no detriment to traffic flow at Inshes roundabout. Based on this, it is</p>	Planning appeal - PPA-270-2152 (Scottish Government 2017b)	No

Reference	Description	Information Available	Further considered in CIA
	<p>assumed no overlap with construction periods as the development is expected to be in place (and ready to trade) prior to the Inshes Phase 2 junction improvement works.</p> <p>Non-EIA development as determined in the screening decision related to the planning appeal (PPA-270-2152).</p> <p>Site layout plan indicates that main area of the development would be to the south of the site within the development allocation boundary of IN58 (LA02 of this EIAR). The land closest to the proposed scheme within the boundary of the planning permission is noted as being <i>'additional land suitable for further road access improvement and other infrastructure works as agreed with The Highland Council'</i>.</p> <p>The appeal decision notice highlights the following points in relation to environmental concerns for the site:</p> <ul style="list-style-type: none"> <i>'the proposed development can be designed in such a way that it is not at unacceptable risk of flooding and that it has no adverse effect on flood risk outwith the site'</i> and that conditions to the planning permission would ensure that this is the case. <i>'The Highland Council's Area Environmental Health Manager recommends that any permission be subject to conditions that control noise during construction and operation'</i> and that <i>'this adequately addresses the concern about noise'</i>. In relation to landscaping the appeal decision notice raises concerns about the proposed development as seen from the A9 but notes that in following the guidelines as set out in the I&RDB (The Highland Council 2015c), and associated conditions for any consent, that this would adequately address any concerns. <p>Based on the above, no cumulative impacts are expected during construction or operation with the proposed scheme.</p>		
<p>PA11 (18/04829/FUL) - Construction of a new Centre for Health Science (within LA03 of this EIAR)</p>	<p>Construction of a new Centre for Health Science at Inverness Campus shared between NHS Highland, the University of Highlands and Islands (UHI) and the Highlands and Islands Enterprise (HIE). It is proposed to include the following:</p> <ul style="list-style-type: none"> NHS Highland: 28-bed elective care centre featuring four operating theatres and housing NHS Highland's ophthalmology service. UHI: research and innovation centre that will form an integral part of the School of Health within the University. HIE: laboratories and office space. <p>The planning application is located within the north-west of the land allocation IN81 of the IMFLDP (reference LA03 in this EIAR). The IMFLDP SEA notes the main environmental impacts associated with the development land allocation in which PA11 is located to include: potential impacts on the Inner Moray Firth Special Area of Conservation (SAC)/Special Protection Area (SPA), loss of good badger habitat, loss of good quality agricultural land and potential</p>	<p>Planning Application - 18/04829/FUL (The Highland Council 2019)</p> <p>IMFLDP SEA (The Highland Council 2015b)</p> <p>IMFLDP (The Highland Council 2015a)</p> <p>IEDB (The Highland Council 2018)</p>	<p>Yes – Construction and Operation</p>

Reference	Description	Information Available	Further considered in CIA
	<p>impacts on historic environmental records (HER) (i.e. assets of local or regional interest). The SEA also notes that as this development land allocation site is developed there will be a material change in its landscape character.</p> <p>The IEDB includes the development of this site in the 'early phase' (2015 to 2025) and as such there is the potential for overlap with the construction of the A9 southbound lane gain/lane drop aspect of the proposed scheme.</p> <p>PA11 is a non-EIA development.</p> <p>The planning application is conditioned (7) that it shall '<i>demonstrate that the system will cope with a 1:200 year plus climate change storm event without flooding to buildings or critical roads.</i>' The permission also requires a Site Noise Management Plan and proposals for an archeological watching brief during site clearance and excavation works.</p> <p>Due to proximity to the proposed scheme and potential timescales for development there is potential for cumulative impacts during construction and operation.</p>		
PA13 (17/00753/MSC)	Construction of 2-storey life sciences building. This is currently under construction and is considered within the baseline of this EIAR as described in Chapter 5 (Overview of Assessment Process).	Planning Application Ref - 17/00753/MSC (The Highland Council 2017a)	NA
PA14 (17/02529/PIP) – HM Prison IN91 (LA06 of this EIAR)	<p>Planning Permission in Principle (PPP) granted for the erection of prison and associated infrastructure on land allocation IN91 of the IMFLDP (LA06 within this EIAR).</p> <p>The IMFLDP SEA notes the following key environmental constraints at the site: badgers, loss of greenspace, loss of good quality soil (e.g. prime agricultural land) and Highland Historic Environmental Records (HER) interest nearby. The SEA also confirms that there is no significant impact on local landscape. The IMFLDP reiterates the need for a badger survey and protection plan (if required).</p> <p>Conditions attached to the PPP require the following to be addressed prior to development in relation to the main environmental considerations at the site:</p> <ul style="list-style-type: none"> • drainage design to be approved showing that all flood risk events up to and including the 200 year plus climate change event managed within the site; • no development within 6m of the Beechwood Burn (SWF03 of this EIAR) to safeguard property from flood risk; • pre-construction badger surveys to confirm appropriate mitigation; • programme of works for the evaluation, preservation and recording of archeological assets; and • requirement for a Construction Environmental Management Plan (CEMP). <p>Non-EIA development as confirmed by the screening opinion (Ref - 17/01473/SCRE).</p>	<p>IMFLDP SEA (The Highland Council 2015b)</p> <p>IMFLDP (The Highland Council 2015a)</p> <p>Planning Application 17/02529/PIP (The Highland Council 2017b)</p> <p>Screening opinion (Ref - 17/01473/SCRE) (The Highland Council 2017c)</p> <p>IEDB (The Highland Council 2018)</p>	Yes – Construction and Operation.

Reference	Description	Information Available	Further considered in CIA
	<p>The IEDB includes the development of this site in the 'early phase' (2015 to 2025) and as such there is the potential for construction overlap with the proposed scheme</p> <p>Due to proximity to the proposed scheme and potential timescales for development there is potential for cumulative impacts during construction and operation.</p>		
<p>PA15 16/02161/S42 (Stratton) IN84 (LA09 in this EIAR – see below)</p>	<p>Planning Permission in Principle (PPP) (ref: 09/00141/OUTIN) was granted in August 2011 for a mixed-use development over 78.8 hectares to be developed in four major sequential phases (Phase 1 to Phase 4). Phase 1: 2016 to 2021; Phase 2: 2022 to 2026; Phase 3: 2027 to 2031 and Phase 4: 2032 to 2036. The development use comprises a 'new town' including a town centre, housing, and commercial development. The original PPP has been amended by planning permissions 13/01049/S42 and 16/02161/S42, with the conditions attached to the latter forming the extant PPP for the development.</p> <p>The development is within land allocation IN84 of the IMFLDP (LA09 of this EIAR).</p> <p>The IMFLDP SEA notes the main environmental impacts associated with this development allocation to include: potential impacts on the Inner Moray Firth SAC/SPA, potential impacts on protected species, loss of prime agricultural land, small area of site at risk of flooding, and potential impacts on HER (i.e. assets of local or regional interest). The SEA notes that it is unlikely the site will have a significant impact on the local landform, given the significant developments already planned for adjacent allocations.</p> <p>The IMFLDP confirms that development must be undertaken in line with the requirements set out in the PPP.</p> <p>The Screening opinion (31 October 2008) confirms that the development is an EIA development.</p> <p>The Environmental Statement to accompany the PPP concludes the following residual impacts from the development:</p> <ul style="list-style-type: none"> • Noise (traffic) - Moderate adverse • Loss of badger foraging habitat – Moderate adverse • Disturbance to badger setts (closure of main sett on site) – Moderate adverse • Landscape (enclosed farmed landscape) – Moderate to Major adverse <p>In relation to the environment, the PPP requires the following to be addressed prior to development: details of drainage and SuDS, landscaping and open space, approval of measures to assess and mitigate contaminated land, confirmation of measures to mitigate noise impacts on existing and future sensitive receptors (e.g. new dwellings and the hotel), provision of a Flood Risk Assessment (FRA), provision of a Construction Environment Management Plan (CEMP), species surveys and protection plans (badger, breeding birds, otters, bats), measures for archaeological investigations, tree surveys and management plans for existing woodland, and watercourse protection areas.</p>	<p>IMFLDP SEA (The Highland Council 2015b)</p> <p>IMFLDP (The Highland Council 2015a)</p> <p>PPP Documents – Ref: 09/00141/OUTIN and 16/02161/S42 (The Highland Council 2016)</p> <p>Stratton Environmental Statement (Inverness Estates Ltd 2009)</p> <p>IEDB (The Highland Council 2018)</p>	<p>Yes – Construction and Operation</p>

Reference	Description	Information Available	Further considered in CIA
	<p>The development areas in the south and south-east of the PPP site are identified within the IEDB to be developed in the 'early phase (2015 to 2025) (Areas S1 to S4 in the IEDB). Areas S5 and S6 are highlighted in the IEDB to be developed in the 'middle phase', which is assumed to be beyond the construction phase of the proposed scheme. It should be noted that Phase 1A (Area S1 in the IEDB) of the development is currently under construction and as such this aspect of the development is included in the baseline for the EIA and is not considered within this cumulative assessment (refer to Chapter 5: Overview of Assessment).</p> <p>As such there is potential for the construction programme for the proposed scheme to overlap with the construction of Areas S2 to S4, although it is noted that Conditions 21 and 24 of the PPP (16/02161/S42) restrict retail development from commencing trading, and other development from being occupied in advance of strategic transport improvements including the upgrade of the existing A96 to dual carriageway west of the Smithton Roundabout, and improvements to that roundabout. The Highland Council in consultation with Transport Scotland has agreed that up to 550 houses may be constructed in advance of those improvements. It is expected that development which comes forward within the 'early phase' in areas S1 to S4 will be subject to that limit, until the strategic improvements are delivered through the various schemes to enable the remainder of development in those phases to be implemented.</p> <p>Due to the scale of the development and the requirement for an EIA it is considered that there is potential for cumulative impacts during construction and operation.</p>		
Development Land Allocations (IN = Inner Moray Firth LDP site reference)			
LA01: Business (Land at Raigmore/Beechwood) (IN67)	<p>43.4ha for business use.</p> <p>No extant planning permission.</p> <p>IMFLDP states that no development will take place prior to improvements to the trunk and local road networks.</p> <p>The I&RDB states that much of the area is already developed and the focus of future development would be given to improving walking, cycling and public transport connections and development of green networks within and outwith the area.</p>	<p>IMFLDP (The Highland Council 2015b)</p> <p>I&RDB (The Highland Council 2015c)</p>	No
LA02: Mixed Use (Land at Dell of Inshes) (IN58)	Refer to PA04.		
LA03: Inverness Campus (IN81)	<p>Refer to PA11 for extant planning permission related to part of this land allocation.</p> <p>62.4ha of mixed-use development at Inverness Campus – business, student accommodation and community facilities.</p> <p>The IMFLDP SEA notes the main environmental impacts associated with this development allocation to include: potential impacts on the Inner Moray Firth SAC/SPA, loss of good badger habitat, loss of good quality agricultural land</p>	<p>IMFLDP SEA (The Highland Council 2015b)</p> <p>IMFLDP (The Highland Council 2015a)</p>	Yes – Construction and Operation.

Reference	Description	Information Available	Further considered in CIA
	<p>and potential impacts on historic environmental records (HER) (i.e. assets of local or regional interest). SEA notes as this site is developed there will be a material change in its landscape character.</p> <p>The IEDB includes the development of this site in the 'early phase' (2015 to 2025) and as such there is the potential for construction overlap with the proposed scheme.</p>	IEDB (The Highland Council 2018)	
LA04: Mixed Use (West of Castlehill Road) (IN82)	<p>3.3ha for mixed-use development – residential housing (17 capacity), community, business and leisure facilities.</p> <p>No extant planning permission.</p> <p>Scale and nature of proposed development is unlikely to have cumulative impacts with proposed scheme.</p>	IMFLDP (The Highland Council 2015a)	No
LA05: Housing (Caulfield Road) (IN75)	<p>0.4 ha for housing, with 4 housing capacity.</p> <p>No extant planning permission.</p> <p>Scale and nature of proposed development is unlikely to have any cumulative impacts with proposed scheme.</p>	IMFLDP (The Highland Council 2015a)	No
LA06: Retail (South of Inverness Retail and Business Park) (IN91)	Refer to PA14 above		
LA07: Business (West of Eastfield Way) (IN88)	<p>1.9ha for business.</p> <p>No extant planning permission.</p> <p>Scale and nature of proposed development is unlikely to have any cumulative impacts with proposed scheme.</p>	IMFLDP (The Highland Council 2015a)	No
LA08 (IN83: Ashton Farm and adjoining land)	<p>Mixed use development at Ashton Farm.</p> <p>The IEDB divides this land into Ashton Farm East and Ashton Farm West. Ashton Farm East and West are identified within the IEDB to be delivered in the 'middle and late phase' respectively and these phases are assumed to be beyond 2025 (end of the early phase – see above). As such it is considered that construction of the proposed scheme would be completed prior to the commencement of the construction of these developments. Furthermore, Ashton Farm West is noted within the IEDB to be dependent on the completion of the proposed scheme.</p> <p>The SEA for the IMFLDP notes the main environmental impacts associated with this development allocation to include: potential impacts on the Inner Moray Firth SAC/SPA, potential impacts on protected species, flood risk, loss of good quality agricultural land and potential impacts on Scheduled Monument and historic environmental records (HER) (i.e. assets of local or regional interest).</p>	<p>IMFLDP SEA (The Highland Council 2015b)</p> <p>IMFLDP (The Highland Council 2015a)</p> <p>IEDB (The Highland Council 2018)</p>	Yes - Operation
LA09 (IN84: Stratton)	See PA15 above.		

Construction

19.3.9 In line with Chapter 4 (The Proposed Scheme) (refer to Appendix 4.1: Construction Information) of this EIA it has been assumed for assessment purposes that construction of proposed scheme commences in 2021 for a duration of 18 to 24 months. The construction programme and phasing of the 'reasonably foreseeable' developments in the Inverness area are not fully known; however, it is expected that there would be some overlap in construction activity for those developments noted in Table 19.2, namely:

- A9/A82 Longman Junction;
- Inshes Junction Improvement – Phase 2;
- PA11 (Centre for Health Science)/LA03 (IN81: Inverness Campus);
- PA14 (HM Prison)/LA06 (IN91: HM Prison); and
- PA15 (Stratton)/LA09 (IN84: Stratton).

19.3.10 No cumulative construction impacts are considered at LA08 (IN83: Ashton Farm and adjoining land) as this development is expected to be implemented within the middle and late phases of the IEDB, which, as assumed within this assessment, would be after the construction of the proposed scheme. Furthermore, the development of 'Ashton West' (area of LA08 to the west of the proposed scheme) as noted in the IEDB is dependent on the completion of the proposed scheme.

19.3.11 Construction impacts generally occur in a localised area in the vicinity of particular construction activities. As such, whilst there is currently limited information regarding construction of the above developments, it is unlikely that individual receptors would be directly affected by multiple projects. There are potential indirect impacts in relation to disruption to the traffic network and journey times of vehicle travellers. Potential 'Type 2' cumulative construction impacts identified in this assessment comprise the following:

- impacts on people/property receptors (noise and vibration and visual receptors);
- hydrology and flood risk; and
- materials and waste.

People/Property Receptors

19.3.12 The assessment of potential for 'Type 2' cumulative impacts on receptors sensitive to noise and vibration and visual impacts is summarised in Table 19.3.

Table 19.3: Potential for Construction Impacts on People and Property (Type 2 Cumulative Impacts)

Development	Construction Details	Cumulative Impact
A9/A82 Longman Junction	Earliest construction start date 2022 – as such there is potential for this to overlap with construction of the proposed scheme. Proposed scheme is approx. 2km to the south of Longman Junction - as such the same receptors are unlikely to be affected.	None
PA14 (HM Prison)/LA06 (IN91: HM Prison)	The IEDB includes the development of this site in the 'early phase' (2015 to 2025) and as such there is the potential for construction overlap with the proposed scheme. The PPP for this site requires a CEMP, and in particular consideration of noise mitigation in relation to those sensitive receptors which are likely to experience a significant adverse noise impact. The sensitive receptors close to the HM Prison site boundary are likely to be the education/student accommodation buildings to the west of the site. There is also potential for these to experience adverse noise impacts during the construction of the proposed scheme, and this would be	Not Significant - following consideration of impacts during development of construction programme and implementation of CEMP.

Development	Construction Details	Cumulative Impact
	<p>confirmed through the development of a Noise and Vibration Management Plan (Mitigation Item NV-01).</p> <p>Any impacts are expected to be short-term and temporary, and with appropriate development of the construction programme and mitigation measures within the CEMP these are not considered to be significant.</p>	
PA15 (Stratton)/LA09 (IN84: Stratton)	<p>The aspects of the development in the south and south-east (S2 to S4) are identified within the IEDB to be developed in the 'early phase (2015 to 2025) and as such there is the potential for construction overlap with the proposed scheme.</p> <p>The closest part of the development boundary for S2 to S4 of the Stratton site is approx. 330m to the east of the proposed scheme. Stratton Farmhouse* is the closest sensitive receptor to both schemes. As there are no significant residual impacts from the proposed scheme on Stratton Farmhouse*, no significant cumulative impacts are expected.</p>	Not Significant
PA11 (Centre for Health Sciences)/LA03 (IN81: Inverness Campus)	<p>IEDB includes the development of this site in the 'early phase' (2015 to 2025) and as such there is the potential for construction overlap with the proposed scheme.</p> <p>The proposed scheme (A9 southbound lane gain/lane drop) is within the land allocated for the Inverness Campus development and as such there is the potential for cumulative impacts on users of the Campus. Any impacts are expected to be short-term and temporary, and with appropriate development of the construction programme and mitigation measures as detailed in the CEMP these are not considered to be significant.</p>	Not Significant - following consideration of impacts during development of construction programme and implementation of the CEMP.
Inshes Junction Improvement - Phase 2	<p>The proposed schemes are dependent on one another and it is assumed that there would be some overlap during construction, in particular where the proposed scheme joins Inshes Junction Improvement - Phase 2 at the proposed Inshes Overbridge.</p> <p>There is the potential for cumulative construction impacts for properties at Inshes Holdings if construction of the Inshes Overbridge was undertaken concurrently with the Inshes Junction Improvement – Phase 2 works in this area. These potential impacts should be taken into account in the development of the construction programme for both schemes.</p>	Potentially Significant – dependent on construction programme.

**it is currently understood that this farmhouse is in a derelict state, and although it falls within the overall boundary (within Phase 1F) for the Stratton development (PA15) it is not within the boundary of the Phase 1A which is currently under construction. However, this receptor is still considered within the EIAR and this cumulative assessment.*

Hydrology and Flood Risk

19.3.1 As each of the proposed developments would be required to be appropriately assessed in relation to hydrology and flood risk as per the Flood Risk Management (Scotland) Act 2009, Scottish Planning Policy (The Scottish Government 2014) and Flood Risk and Drainage Impact Assessment Supplementary Guidance (The Highland Council 2013), no significant cumulative impacts are expected during construction. Proposed developments would be required to develop a CEMP which would include mitigation measures to limit any increase to flood risk during construction. In line with the above legislation and guidance the proposed developments would also be required to meet the following criteria:

- appropriate management of surface water runoff during construction;

- minimal in-channel works during construction;
- construction materials/works to not encroach (where possible) or kept to a minimum in the functional floodplain of the surface water features; and
- any adverse impacts are mitigated against where reasonable.

Materials and Waste

- 19.3.2 Although a guiding concept throughout DMRB Stage 3 design has been to seek to achieve a degree of balance between the amount of useable cut material produced from construction and the amount of material required to build embankments and landscaping, this could not be achieved for the proposed scheme. Therefore, the proposed scheme would require additional materials to be imported, to form embankments and landscaping areas. It has been assumed that all cut material excavated would be used (with 70% anticipated to be acceptable and 30% requiring treatment); therefore, the export of excess, unusable, materials would not be required.
- 19.3.3 Data used to inform Chapter 17 (Materials) suggests that within The Highland Council and Moray Council areas there is sufficient capacity to supply high quality aggregate material required to be imported for the proposed scheme. However, taking into account the other developments within the area which are likely to be constructed within a similar timeframe (refer to Table 19.3) and require locally sourced aggregate material, there is likely to be high demand for materials relative to local availability.
- 19.3.4 There is scope for recycling and reuse of construction waste from the proposed scheme, but the quantity achievable would be dependent on the contractor, and therefore cannot be determined at this stage. However, the construction sector seeks to recycle and reuse construction waste in response to legislative, fiscal and policy drivers, as well as cost minimisation, which would result in a likely reduction in the quantity of material that would leave site across the various developments in the area.
- 19.3.5 At this stage, material use and waste generation estimates are not available for other relevant developments within the area. However, allowing for intended re-use and availability of material from both local and non-local sources, it is considered that this can be appropriately managed within developments and coordinated as part of the aspirations of the local development plan and therefore impacts on waste and materials are unlikely to be significant.

Operation

- 19.3.6 Table 19.2 sets out the 'reasonably foreseeable' developments which have been considered within the 'Type 2' cumulative assessment and notes that the following developments have the potential for cumulative impacts with the proposed scheme during operation:
- Inshes Junction Improvement - Phase 2;
 - PA11 (Centre for Health Sciences)/LA03 (IN81: Inverness Campus);
 - PA14 (HM Prison)/LA06 (IN91: HM Prison),
 - PA15 (Stratton)/LA09 (IN84: Stratton); and
 - LA08 (IN83: Ashton Farm and adjoining land).
- 19.3.7 The potential 'Type 2' cumulative operational impacts as a result of these developments include the following:
- Impacts on people/property receptors (visual receptors);
 - Loss of good quality agricultural land;
 - Inner Moray Firth SPA and Longman and Castle Stuart Bays Site of Special Scientific Interest (SSSI);
 - Protected Species (Badgers and Bats);

- Hydrology and Flood Risk;
- Impacts on cultural heritage assets (e.g. cumulative loss of protected assets or assets of local importance, or change to the setting of assets); and
- Impacts on the landscape character.

People and Property Receptors

- 19.3.8 During operation of the proposed scheme there are significant residual visual impacts (summer 15 years after opening) (refer to Chapter 10: Visual) on sensitive receptors at Cradlehall (receptors 32 to 36), Ashton Farm Cottages and Farmhouse (receptor 40 and 41) and at properties along U1058 Caulfield Road North (receptors 46 to 48). The other developments relevant to these areas in relation to potential visual impacts include LA03 (IN81: Inverness Campus) and LA08 (IN83: Ashton Farm and adjoining land).
- 19.3.9 LA03 (IN81: Inverness Campus) is located to the west of the proposed scheme, and due to the embankment and landscape mitigation of the proposed scheme no significant cumulative impacts are expected, especially in relation to receptors in Cradlehall (receptors 32 to 36).
- 19.3.10 LA08 (IN83: Ashton Farm and adjoining land) is located to both the east and west of the proposed scheme and there is potential for cumulative visual impacts for sensitive receptors along U1058 Caulfield Road North (receptors 46 to 48). No cumulative effects are expected for Ashton Farm and its associated buildings as these would be included within the land allocation; the IEDB (The Highland Council 2018) states that the Farm buildings '*present an opportunity for adaptive reuse with potential for blocks to be developed as a medium density, local centre supporting services and community uses*'. The IEDB shows that the area of the Ashton Farm development closest to the receptors along U1058 Caulfield Road North is planned as a 'medium density' of housing (45 homes), with Ashton District Park located to the north of this. As there is currently no extant planning permission relating to the Ashton Farm development, it is not possible or appropriate for this assessment to consider in detail the potential individual environmental impacts associated with this development, and as such these impacts, along with the significance of the potential cumulative impacts, would need to be addressed separately within the planning applications and associated environmental assessments for this development.
- 19.3.11 Although no significant residual impacts (summer 15 years after opening) (refer to Chapter 10: Visual) from the proposed scheme are noted for sensitive receptors at Inshes Holdings (in particular receptors 6, 15, 16 and 17), it is considered that there is potential for a significant cumulative visual impact at this location when considering the Inshes Junction Improvements – Phase 2 scheme. As the details of this scheme are still in development it is not possible to review the significance of any cumulative impacts and this would be considered further as part of the design development work for this scheme. In relation to LA03 (IN81: Inverness Campus) no significant cumulative impacts are expected in this location as the area closest to these receptors is proposed as a 'Landscaped Area' in the Inverness Campus Design Guide (7N Architects 2013)

Agricultural Land

- 19.3.12 The proposed scheme has land-take from 23.27ha of agricultural and sporting land, of which 7.95ha is classed as prime agricultural land. Other proposed developments in the area are likely to have land-take of agricultural land, with some of this being prime land (e.g. PA11 (Centre for Health Sciences)/LA03 (IN81: Inverness Campus), PA14 (HM Prison)/LA06 (IN91: HM Prison), PA15 (Stratton)/LA09 (IN84: Stratton) and LA08 (IN83: Ashton Farm and adjoining land). The SEA for the IMFLDP (The Highland Council 2015b) confirms that these development land allocations would be expected to have land-take of good quality land, and although at this stage, the exact area of land-take is not fully known it is expected that in combination with the proposed scheme, this would be a significant cumulative impact.
- 19.3.13 Further to the above, Seafeld Park Partnerships, Ashton Farm (K&C Munro, Ashton Suffolks) and Ashton Farm East land interests (refer to Chapter 15: People and Communities – Community and Private Assets) are expected to experience cumulative impacts in relation to land-take from both the

proposed scheme and the proposed development at Ashton Farm within the land allocation LA08 (IN83: Ashton Farm and adjoining land). The principle of future development at Ashton Farm is established within the IMFLDP (The Highland Council 2015a) with further details and guidance provided in the IEDB (The Highland Council 2018). However, as there is currently no extant planning permission relating to LA08, it is not possible to confirm if (and when) this significant cumulative impact would occur, and this would need to be further considered within the planning applications and associated environmental assessments for this development.

Inner Moray Firth SPA/Longman and Castle Stuart Bays SSSI

- 19.3.14 A detailed consideration of the potential effects on European sites; Inner Moray Firth SPA and Ramsar site and the Moray Firth pSPA, in the context of The Conservation (Natural Habitats, & c.) Regulations 1994 (referred to as the Habitat Regulations), has been undertaken in a Habitat Regulations Appraisal (Jacobs 2019) which considers construction and operational impacts of the proposed scheme on these sites in-combination with other 'reasonably foreseeable' projects. The HRA concludes that the proposed scheme would not result in any LSEs on any European/Ramsar sites, and as a result there would be no potential for in-combination effects to occur with other plans or projects.
- 19.3.15 Chapter 11 (Ecology and Nature Conservation) also concludes that there would be no significant residual impact on the Longman and Castle Stuart Bays SSSI, through the implementation of appropriate mitigation measures to control pollution. As such no cumulative impact is predicted with other 'reasonably foreseeable' developments.

Protected Species (Badgers and Bats)

- 19.3.16 The loss of land as a result of the proposed scheme (refer to paragraph 19.3.12) along with other development in the area is likely to have a cumulative impact on badgers through the increased loss and fragmentation of foraging habitat. The SEA for the IMFLDP (The Highland Council 2015b) highlights 'good badger habitat' as a key feature of the land for the proposed developments at PA11 (Centre for Health Sciences)/LA03 (IN81: Inverness Campus), PA15 (Stratton)/LA09 (IN84: Stratton), PA14 (HM Prison)/LA06 (IN91: HM Prison) and LA08 (IN83: Ashton Farm and adjoining land), and recommends appropriate surveys and mitigation. This is reflected in the IMFLDP (The Highland Council 2015a) where badger surveys and protection plans are required as part of the developer requirements. The Environmental Statement (Inverness Estates Ltd 2009) which accompanies the PPP for PA15 (Stratton) concludes a significant residual impact in relation to loss of badger foraging habitat, and notes in the cumulative assessment that there is potential for loss of badger foraging habitat with other developments in the area.
- 19.3.17 For the proposed scheme this would be reduced (non-significant impact) during operation by retention of commuting routes through creation of suitable crossing points including the provision of culverts suitable for passage by badgers and a direct mammal underpass, so that movement between areas of habitat can be maintained. Mitigation is also proposed post-construction to monitor the effectiveness of the crossing structures.
- 19.3.18 However, as further development and loss of land takes place within the area, especially the development of LA08 (IN83: Ashton Farm and adjoining land), movement between suitable habitat areas could potentially be reduced and there is the potential for a cumulative impact. The scale of this impact, and whether or not it is significant, would need to be further considered as part of the detailed design and mitigation proposals for the Ashton Farm development within LA08. As this development is expected to be designed and implemented following construction of the proposed scheme, it is not appropriate to recommend mitigation for any cumulative impacts in this EIAR.
- 19.3.19 During operation of the proposed scheme, significant impacts are expected in relation to loss of bat foraging and commuting habitat under the footprint of the proposed scheme. This would result in fragmentation and diversion of individuals away from existing commuting routes, potentially resulting in greater use of less suitable crossing points. There would also be a reduced availability of foraging resources. However, once the proposed landscape and ecological planting is established no significant residual impact is expected.

- 19.3.20 Dependent on the timetable for construction of the Ashton Farm (LA08 (IN83: Ashton Farm and adjoining land)) development there is potential for cumulative impacts in relation to bats. The IEDB (The Highland Council 2018) sets out the green infrastructure required within this development, and highlights areas of woodland to be retained and introduces the 'linear park' to the west of the proposed scheme to the north of the Highland Main Line Railway line. As many of the existing linear woodland/hedgerow features are proposed to be retained no significant cumulative impacts are expected; however, this would need to be confirmed through the relevant planning applications and associated environmental assessments as the development is progressed.

Hydrology and Flood Risk

- 19.3.21 As each of the proposed developments would be required to be appropriately designed in relation to hydrology and flood risk as per the Flood Risk Management (Scotland) Act 2009, Scottish Planning Policy (Scottish Government 2014), and Flood Risk Drainage Impact Assessment Supplementary Guidance (The Highland Council 2013), cumulative impacts on flood risk are not anticipated during operation. In line with the above legislation and guidance the proposed developments would be required to meet the following criteria:

- appropriate management of surface water runoff through the implementation of SuDS measures;
- not cause any increase in flood risk elsewhere;
- the proposed development must not be impacted by unacceptable flood risk; and
- have suitable flood risk management measures to mitigate any unavoidable adverse impact(s) on flood risk.

Cultural Heritage

- 19.3.22 The proposed scheme would result in Moderate residual impacts on 10 cultural heritage assets, one of which is a Scheduled Monument (Asset 14); all of these assets are located with the development land allocation LA08 (IN83: Ashton Farm and adjoining land). The proposed scheme spatially severs the assets from other prehistoric archaeological remains identified within the study area and in the case of the Scheduled Monument (Asset 14) and Stratton Possible Hut Circles 1 (Asset 45) the proposed scheme causes the loss of the integrity of the setting of assets.

- 19.3.23 There is potential for cumulative impacts with the Ashton Farm development (LA08 (IN83: Ashton Farm and adjoining land)) as the assets affected by the proposed scheme are likely to be further impacted, with the potential for physical impacts. The IMFLDP SEA (The Highland Council 2015b) notes an adverse impact in relation to cultural heritage on this land allocation and highlights that there is Highland HER and a Scheduled Monument within the site. The SEA does not conclude any significant impacts and recommends mitigation in the form of in-situ preservation, archaeological excavation and recording and applying appropriate set-back distances from assets. The IMFLDP (The Highland Council 2015a) notes the need to assess and if necessary mitigate for any adverse impacts on the Scheduled Monument.

- 19.3.24 Despite the conclusions of the SEA, it is considered that there is potential for significant cumulative impacts in relation to cultural heritage assets; assets would be further severed from other prehistoric archaeological remains and there would be further loss to the integrity of the setting of the Scheduled Monument and Stratton Possible Hut Circles. The significance of impact would need to be further considered as part of the detailed design and mitigation proposals for the Ashton Farm development, including any environmental assessment when it is progressed following the construction of the proposed scheme.

Landscape Character

- 19.3.25 The proposed scheme would result in significant residual impacts for landscape character in the winter year of opening for Enclosed Farmed landscapes LLCA (Moderate/Substantial) and Inverness Campus (Mixed-Use) LLCA (Moderate); these would reduce to Moderate and Slight in summer after 15 years,

respectively. These impacts result from changes to the landcover, the loss of natural topographic features, the loss of mature and established woodland and the loss of farmland.

- 19.3.26 There is potential for cumulative impacts with PA11 (Centre for Health Sciences)/LA03 (IN81: Inverness Campus), PA15 (Stratton)/LA09 (IN84: Stratton) and LA08 (IN83: Ashton Farm and adjoining land) as these developments would introduce further infrastructure into these areas of land resulting in a further material change to landscape character. The IMFLDP SEA (The Highland Council 2015b) acknowledges in its cumulative assessment that if all of the preferred development sites are built out that there would be a fundamental change to the landscape, creating new areas of distinctiveness and that there would be some negative effects related to landscape impact. The SEA does note that the *'landscape impact could be mitigated on a site by site basis'* and this would be through following the principles of the Highland-wide Local Development Plan (HwLDP) (The Highland Council 2012) in particular the supplementary guidance on Siting and Design and Sustainable Design (The Highland Council 2011).
- 19.3.27 However, although there is a long-established principle of development in the area through the aspirations of the IMFLDP (The Highland Council 2015a), and guidance associated with this has been developed to shape future development in this area, it is considered that when taking into account the proposals detailed in the IEDB (The Highland Council 2018), in particular those for the Ashton Farm development, that significant cumulative impacts would occur on the Enclosed Farmed Landscapes LLCA. The Environmental Statement (Inverness Estates Limited 2009) which accompanies the PPP for PA15 (Stratton) concludes a significant residual impact on this landscape type, and in relation to the Ashton Farm development the significance would need to be further considered as part of the detailed design and mitigation proposals as they come forwards to be implemented.

19.4 Conclusions

- 19.4.1 No significant Type 1 cumulative impacts are expected during construction or operation provided appropriate mitigation is implemented through the CEMP.
- 19.4.2 The majority of the potential Type 2 cumulative impacts are related to the planned urban expansion at Inverness East as established in the IMFLDP (The Highland Council 2015a) and IEDB (The Highland Council 2018). The proposed scheme is integral to deliver the infrastructure required to support the development of the area, with the proposed scheme also being dependent on the implementation of the Inshes Junction Improvement – Phase 2 scheme.
- 19.4.3 As the proposed scheme and Inshes Junction Improvement – Phase 2 are dependent on, and connect to one another, there is potential for significant cumulative construction impacts for properties at Inshes Holdings. This is on the basis that construction of the Inshes Overbridge is undertaken concurrently with the Inshes Junction Improvement – Phase 2 works in this area. These potential impacts should be taken into account in the development of the construction programme for both schemes.
- 19.4.4 For other developments (PA14 (HM Prison) and PA11 (Centre for Health Sciences)) within close proximity to, but which are not directly interdependent with the proposed scheme, no significant cumulative construction impacts are expected provided that consideration is given to the potential cumulative impacts during the development of construction programme(s) and mitigation measures detailed in the CEMP are implemented.
- 19.4.5 The potential for significant Type 2 cumulative operational impacts are summarised in Table 19.4 below.

Table 19.4: Potential for Operational Impacts (Type 2 Cumulative Impacts)

Potential Type 2 Impacts	Reasonably Foreseeable Development	Description of Potential Impacts
Visual impacts – receptors along U1058 Caulfield Road North (receptors 46 to 48)	LA08 (IN83: Ashton Farm and adjoining land)	Medium density of housing (45 houses) within masterplan to the north of receptors. Potential to contribute to significant adverse visual impacts from the proposed scheme.
Visual impacts – receptors at Inshes Holdings (receptors 6, 15 to 17)	Inshes Junction Improvement - Phase 2	Potential for significant adverse visual impacts for receptors at Inshes Holding when the proposed scheme impacts are considered in combination with potential impacts from the Inshes Junction Improvement – Phase 2 scheme.
Loss of Agricultural Land	PA11 (Centre for Health Sciences) LA03 (IN81: Inverness Campus) PA14 (HM Prison) PA15 (Stratton) LA08 (IN83: Ashton Farm and adjoining land)	Additional loss of agricultural land some of which is prime agricultural land. Potential for significant adverse cumulative impacts.
	LA08 (IN83: Ashton Farm and adjoining land)	Potential for significant adverse cumulative impacts due to land-take for the following agricultural land interests; Seafield Park Partnerships, Ashton Farm (K&C Munro, Ashton Suffolks) and Ashton Farm East.
Badgers – fragmentation and loss of foraging habitat	PA11 (Centre for Health Sciences) LA03 (IN81: Inverness Campus) PA15 (Stratton) PA14 (HM Prison) LA08 (IN83: Ashton Farm and adjoining land)	Further development and loss of land has the potential to fragment and reduce foraging area for badgers, reducing movement between suitable habitat areas. Potential for significant adverse cumulative effects, especially for LA08 (IN83: Ashton Farm and adjoining land).
Cultural Heritage Assets – including one Scheduled Monument.	LA08 (IN83: Ashton Farm and adjoining land)	Assets significantly impacted by the proposed scheme are located within the development land allocation for the Ashton Farm development. Potential for physical impacts and further severance of the assets from other prehistoric archaeological remains and further loss to the integrity of the setting of the Scheduled Monument and Stratton Possible Hut Circles. Potential for significant adverse cumulative impacts.
Landscape Character – Enclosed Farmed Landscapes LLCA	PA15 (Stratton) LA08 (IN83: Ashton Farm and adjoining land)	Introduce further infrastructure into Enclosed Farmed Landscapes LLCA. Contributes to a further material change to landscape character of this LLCA and potential for significant adverse cumulative impacts.

19.4.6 As noted in Table 19.4, a number of the potential significant adverse cumulative effects are anticipated as a result of the Ashton Farm development allocation (LA08: IN83 Ashton Farm and adjoining land). As this development is expected to be further designed and implemented following the construction of the proposed scheme, it is not appropriate for this assessment to consider in detail the associated environmental impacts of this development and recommend mitigation for any cumulative impacts. As

such, these impacts along with the significance of the potential cumulative impacts and any subsequent mitigation, would need to be addressed separately within the planning applications and associated environmental assessments for this development.

- 19.4.7 It is further acknowledged that, depending on the detailed design for the other developments in the area, additional cumulative impacts are possible. Conversely, it may be possible to mitigate construction impacts through coordination and refinement of the construction programmes, but these are not known at this stage. The detailed design and construction programmes should continue to be considered by The Highland Council in relation to the aspirations and requirements of the IMFLDP and in future development assessments as more information becomes available.

19.5 References

Reports and Documents

7N Architects (2013). Inverness Campus Consolidated Design Guidelines.

Atkins Mouchel (2018) A9 Dualling Tomatin to Moy Environmental Statement – Available at [accessed 01.07.19]: <https://www.transport.gov.scot/publication/draft-orders-and-environmental-statement-tomatin-to-moy-a9-dualling/>

European Commission (1999). Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions, May 1999.

Highways Agency (2009). DMRB Volume 11 (Environmental Assessment) Interim Advice Note 125/09. Supplementary Guidance, 2009.

Highways Agency, Scottish Government, Welsh Assembly Government, The Department for Regional Development Northern Ireland (2008a). DMRB Volume 11, Glossary of Terms HA218/08.

Highways Agency, Scottish Government, Welsh Assembly Government and The Department for Regional Development Northern Ireland (2008b) DMRB Volume 11, Section 2, Part 5 HA205/08: Assessment and Management of Environmental Effects.

Highways Agency, Scottish Government, Welsh Assembly Government and The Department for Regional Development Northern Ireland (2008c) DMRB Volume 11, Section 2, Part 6 HD48/08: Reporting of Environmental Impact Assessments.

Highways England (2015). DMRB Volume 11 (Environmental Assessment). Interim Advice Note 125/15. Environmental Assessment Update, 2015.

Jacobs (2016). A96 Dualling Inverness to Nairn (including Nairn Bypass) – Environmental Statement. Available at [accessed 01.07.19]: <https://www.transport.gov.scot/projects/a96-dualling-inverness-to-aberdeen/a96-inverness-to-nairn-including-nairn-bypass/document-library>

Jacobs (2019) A9/A96 Inshes to Smithton. Habitat Regulations Appraisal.

Inverness Estates Limited (2009) Stratton Environmental Statement – available as part of documents associated with Planning Application 09/00141/OUTIN - <https://wam.highland.gov.uk/wam/applicationDetails.do?activeTab=documents&keyVal=KFMH0HIH01R00>

Scottish Government (2014) Scottish Planning Policy

Scottish Government (2017a): Planning Circular 1/2017: Environmental Impact Assessment Regulations

The Highland Council (2011). Siting and Design and Sustainable Design

The Highland Council (2012). The Highland-wide Local Development Plan

The Highland Council (2013). Flood Risk and Drainage Impact Assessment Supplementary Guidance

The Highland Council (2015a). Inner Moray Firth Local Development Plan (IMFLDP).

The Highland Council (2015b). Inner Moray Firth Local Development Plan. Strategic Environmental Assessment. Finalised Environmental Report, May 2015.

The Highland Council (2015c). Inshes and Raigmore Development Brief (I&RDB).

The Highland Council (2015d). Inshes Junction Improvements Phase 2. Available at: https://www.highland.gov.uk/info/1523/transport_and_streets/499/inshes_junction_improvements [accessed 01.07.2019].

The Highland Council (2018). Inverness East Development Brief (IEDB).

Transport Scotland (2019a) A9/A82 Longman Junction Improvement Scheme – Available at [accessed 01.07.19]: <https://www.transport.gov.scot/projects/a9a82-longman-junction-improvement-scheme/project-details/>

Transport Scotland (2019b) A96 Dualling East of Fochabers to East of Huntly Project Details – Available at [accessed 01.07.19]: <https://www.transport.gov.scot/projects/a96-dualling-inverness-to-aberdeen/a96-east-of-fochabers-to-east-of-huntly/>.

Transport Scotland (2019c) A96 Dualling Hardmuir to Fochabers Project Details - Available at [accessed 01.07.19]: <https://www.transport.gov.scot/projects/a96-dualling-inverness-to-aberdeen/a96-hardmuir-to-fochabers/project-details/>

EU Directives and National Legislation

Directive 2014/52/EU of the European Parliament and of the Council of 16 April 2014, amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment.

Flood Risk Management (Scotland) Act 2009

The Roads (Scotland) Act 1984 (Environmental Impact Assessment) Regulations 2017