Review of Natura Impact Statement of the River Bride (Blackpool) Drainage Scheme

- including recommendations -

(Scheme Reference: DPE63-18-2018)

by

CAAS Ltd

for the

Department of Public Expenditure and Reform

An Roinn Caiteachais
Phoiblí agus Athchóirithe
Department of Public
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Document Control	Author/Reviewer	Date
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Executive Summary

The Natura Impact Statement (NIS) has been reviewed to ascertain whether or not it meets the requirements of the relevant legislation, as required to support the Appropriate Assessment (AA) aspects of the Confirmation Order process, in compliance with the requirements of the Habitats Directive.

The information presented in the original NIS (dated January 2019) was based on incomplete information on the scheme particularly concerning construction works and future maintenance. There were also significant inadequacies in the mitigation measures which underpinned the conclusions.

Following a request for supplementary information, an addendum report and associated information was submitted in November 2020. This provided additional detail and clarity on various details of the scheme and its assessment, as sought in the further information request, and as required to support the environmental assessment purposes. It did not comprise any significant variation to the proposed scheme itself.

The addendum provides updated information with regard to the AA screening process, bringing the assessment in line with relevant case law and provides additional assessment detail such as a more robust assessment of cumulative (in-combination) effects. The information presented in the addendum in conjunction with the initial NIS provides sufficient data to support the conclusion of the overall NIS.

Recommendations are made on foot of this review to ensure the implementation of all mitigation measures.

Following the implementation of all mitigation measures, including those arising as recommendations from this review, no significant effects on the ecological integrity of European sites are identified as likely to occur, should the scheme be implemented.

Introduction

CAAS Ltd have been commissioned by the Department of Public Expenditure and Reform to carry out a review of the Natura Impact Statement (NIS) and associated documentation on the proposed River Bride (Blackpool) Certified Drainage Scheme, county Cork.

This review is to advise the Department of Public Expenditure and Reform of the adequacy of the NIS / provided documents in terms of compliance with the statutory requirements, particularly:

- Council Directive 92/43/EEC (as amended) - Article 6(3):
  'Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment [AA] of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public.'
- European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477/2011) (as amended); and
- Planning and Development Regulations 2001 (as amended).

This report sets out, in the following sequence:

- The scope of this review (this section)
- A review of the original NIS and associated documentation;
  - This includes an overview of the proposed scheme
  - This is done by reference to the specific requirements of the relevant Regulations
  - It includes consideration of relevant case law
- A review of the NIS Addendum Report and associated documentation;
  - This is done with reference to the initial NIS and review items identified in its review
  - Any addendums are considered with respect to the AA process and relevant case law
- Conclusions
  - Compliance of the NIS (considering the NIS and the Addendum reports)

The following details are provided at the end of the document:

- The information reviewed
- Competency of the review team

Review of the Original Natura Impact Statement

Section		Discussion	Actions required[1]
General Notes		The assessment document is detailed, containing a generally robust and well documented assessment process. The use of technical language is slightly misaligned with the Habitats Directive itself but this does not affect the integrity of the assessment.	None
1	Introduction & Background to Project	The introduction gives a brief overview of the context of the project and identifies the specific requirements of the AA process with specific reference to recent case law. The rationale surrounding the adherence to the case law is flawed and shows only a cursory understanding of how case law relates to the overall AA process. The section states '*the OPW have taken the opportunity to revise the AA Screening and instead provide a Natura Impact Statement assessing the potential impact on all downstream European Sites in the absence of mitigation and in combination with other plans and projects'*, however the scheme and the NIS both contain mitigation measures, as identified in s7. Discrepancies and inconsistencies in this section are identified to be a misinterpretation of the role of case law in the AA process. Notwithstanding, subsequent sections provide adequate information in relation to sources for effects and mitigation measures on which to base an AA conclusion statement.	None
1.1	Introduction		
1.2	Background	The background information provides a brief description of the proposed flood relief scheme.	None
1.3	The Requirement for Appropriate Assessment	The requirement and aims section provide similar information on the need and purpose of the AA.	None
1.4	The Aim of this Report		

[1] These actions were addressed by recommendations that were incorporated into the request for further information, which the Commissioners responded to in October 2020.

2	The Appropriate Assessment Process	The list of guidance documents for the AA process refers to two non-statutory documents that could not be found on the scheme website; namely: • Ryan Hanley (2014a) Stage 1: Appropriate Assessment Screening Methodology for the Maintenance of Arterial Drainage Schemes. Prepared by Ryan Hanley on behalf of the Office of Public Works. • Ryan Hanley (2014b) *OPW Drainage Maintenance Categories Source » Pathway » Receptor Chains for Appropriate Assessment.* Prepared by Ryan Hanley on behalf of the Office of Public Works As these sources cannot be verified and are not standard practice reference material, they are disregarded for the purposes of this review.	Either: the relevance of these documents in the context of a statutory AA should be clarified and accessible sources (e.g. URLs) included; or references to them should be removed.
2.1	Guidance		
2.2	Stages of Article 6 Assessment	The AA process is explained in this section which specifically identifies a statement that reflects the content of the DoEHLG (2010) *Appropriate Assessment of Plans and Projects in Ireland*. Guidance for Planning Authorities. Department of the Environmental Heritage and Local Government. This statement is as follows: '*Screening is undertaken without the inclusion of mitigation, unless potential impacts clearly can be avoided though the modification or redesign of the plan or project, in which case the screening process is repeated on the altered plan or project*'. This statement is in conflict with the case law stated in section 1 of the NIS with respect to the case C-323/17 People Over Wind and Peter Sweetman v Coillte. This is not discussed and there is no reference to the relevance of the aforementioned case law. The text is incorrect. The subsequent mitigation measures section of the report does nonetheless show that this conflict did not undermine the assessment process.	It is advised to rectify the error, for clarity.
2.3	Report Format	This section gives an overview of the report format.	None

3	Description of The Proposed Project	These sections provide information in relation to the scope of the proposed works. While this information is detailed; substantial elements of the scheme are not fully quantified or addressed, including the maintenance regime. The channel maintenance programme that is proposed does not clearly characterise the extent or methods of maintenance but instead uses broad statements such as: "*The channel maintenance programme will pay particular attention to locations where silt, gravel and debris are likely to accumulate, such as at structures, sharp bends, culvert inlets, etc.*" There is insufficient detail provided in relation to the location, extent, methods and/or timing of the works. Specific detail must be provided in relation to the proposed works in order to facilitate the identification and quantification of potential sources for significant effects arising from the proposed programme of works.	Provide sufficient detail in relation to the programme, locations, timelines and methods for all construction and maintenance works to enable a full suite of significant sources for effects to be identified and assessed.
3.1	Study Area		
3.2	Proposed Works		
3.2.1	Site Investigation		
3.2.2	Culverts		
3.2.3	Bridge Replacement		
3.2.4	Flood Walls / Embankments		
3.2.5	Bridge Parapets		
3.2.6	Winter Channel		
3.2.7	Sedimentation Management		
3.2.8	Open Channel		
3.2.9	Screen		
3.2.10	Drainage Works		
3.2.11	Maintenance Regime		
3.3	Anticipated Construction Methods		
3.3.1	New Culverts		
3.3.2	Bridge Replacement		
3.3.3	Bridge Parapets		
3.3.4	Flood Defence Walls		
3.3.5	Earthen Embankments		
3.3.6	Drainage Works		
3.3.7	Pumping Stations		

3.3.8	Other Instream Works		
4	Designated Sites in Proximity to The Proposed Project	The rationale provided for the zone of influence for the project is ecologically relevant and is well presented.	None
4.1	European Sites	Background information is presented for each of the European sites with pathways for potential effects.	None
4.2	Identification of Potential Impacts	This section fails to recognise the role of mitigation measures in the assessment process and the clear requirement for an NIS. It also identifies invasive species as a known threat to the European sites which have existing pathways. The report does not provide detail in relation to the extent of the invasive species in the works areas, which is understood to be extensive from the information appended to the EIAR, and does not describe the the potential impacts from this source. Similarly, as identified above, construction details including the programme of maintenance works are insufficiently detailed to support a robust description of potential effects in this section.	Further information is required in relation to the mapping and quantifying of invasive species known to occur within the scheme area to identify the potential effects from this source. Similarly, additional detail is required in relation to potential effects from sources such as sediment run-off and including metrics and programme details (more detail is needed in the proposed scheme detail in order to achieve this).
4.3	Appropriate Assessment Screening Conclusion	The conclusions states that '*there are potential pathways for significant impacts to the conservation objectives of both European sites'*. The information presented supports this conclusion, however, this conclusion contradicts the previous sections which indicates that no effects will occur and an NIS is only being prepared because on the basis of the precautionary principle. The inconsistencies present challenge the integrity of the assessment process.	It is advised to address these inconsistencies, for clarity and to ensure that the NIS is robust.
4.4	Purpose of the Natura Impact Statement	This is clear.	None

5	Impact Assessment	The rationale and requirement for the NIS is more robust in this section and some of the potential effects arising from the proposed works are clearly identified. However, as detailed above, there is insufficient detail provided in the project description and/or habitat assessment to ensure that the scope of potential effects from the scheme is sufficiently described.	The impact assessment requires review with benefit of additional information and detail on the characteristics of the proposed project and the distribution of invasive species with respect to the proposed works.
5.1	Types of Impacts Arising from The Works		
5.2	Potential Impacts on Birds and Wetland Habitat for which Cork Harbour Spa is designated		
5.3	Potential Impacts on Mudflats and Sandflats not covered by Seawater at Low Tide and Atlantic Salt Meadows for which Great Island Channel SAC is designated		
6	Cumulative Impacts with Other Plans/Projects	The in-combination effects section focuses on land use plans, other flood relief schemes and high-level strategy documents. There is no reference to any consideration in relation to projects in the area to demonstrate adequate assessment of in-combination effects.	A review of the Cork City and Cork County Council planning maps identified that the area is highly industrialised and the projects within the last 5 years which are close to the river bride are predominantly change of use application or small-scale extension works to existing industrial facilities. These developments are small in scale, considering the nature or the proposed works and the distances between the flood relief

			scheme and the European sites identified these additional projects are not identified to affect the integrity of the assessment.
7	Mitigation Measures	There is a comprehensive list of mitigation measures presented including hydrological interaction control measures, construction environmental management measures and invasive species management measures. However, these measures are presented in a way in which a significant level of detail is omitted or left to post consent considerations. For example, the habitat assessments identify invasive species such as Japanese Knotweed to be present on site; however, the full extent and location of this species has not been mapped. "*A survey will be carried out to map the extent of invasive species and an Invasive Species Management Plan will be put in place prior to commencement of construction*". The works have potential to enable the spread of this species and therefore the mitigation measures presented in the EIAR do have sufficient detail to estimate the extent of works required. Removal of this species could result in significant sediment release into the stream if the species is widespread (as appears to be the case from the information appended to the EIAR). Clear information is required at this phase in the scheme to enable the full characterisation of impacts that may arise due to the implementation of the scheme. Similarly, sediment mobilisation is a key factor in the assessment of ecological impacts for the proposed scheme, which is recognised in the report. For example, the report identifies that: *"Sediment management and sediment control will be an ongoing issue and will form a fundamental part of the scheme. Sediment removal and sediment controls upstream of Sunbeam Industrial Estate will be carried out in consultation with Inland Fisheries Ireland, so as to minimise the volumes of sediment removed and the resultant impact on the morphological diversity upstream of the sediment trap at Sunbeam, while not*	Mitigation measures must be designed with specific reference to all potential sources for effects, identified from a complete scope of works. These measures must identify clear thresholds and standards which must be upheld for any measures which are to be designed after the consent process.

	compromising on the function of sediment control as a fundamental element of the proposed scheme". Leaving detailed silt control measures and method statements to be drafted and implemented after licensing classifies as a post consent condition. There is insufficient evidence presented in the existing EIAR to adequately describe identify the potential impacts arising from the proposed works.	
8 Conclusions	The NIS concludes that "*that the proposed Project, either on its own or in combination with other plans and projects and given adherence to best practice guidelines and implementation of the mitigation measures proposed, would not give rise to any direct or indirect significant adverse effects on any European Site designated for nature conservation.*". This statement however, is inconsistent with the text identified above. The information presented in the report is **not** sufficient to support a statement that the proposed River Bride (Blackpool) Certified Drainage Scheme will not have a significant adverse effect on the integrity of the any European site once the mitigation measures have been implemented accordingly. The report also identifies invasive species as a known threat to the European sites which have existing pathways. The report identifies that Japanese Knotweed is present on site; however, does not provide detail in relation to the extent of the species within the context of the site boundary and the proposed works, therefore the potential impacts from this source are not quantified. Similarly, as identified above, the detail relating to the construction plan and programme for initial construction and future maintenance works are insufficiently detailed and therefore the potential effects are not adequately assessed.	The conclusions need to be revised in the context of information which is required to address the comments on the preceding sections.

Review of the Natura Impact Statement Addendum Report

Section		Discussion	Actions required
1	Introduction & background to project	Detail in relation to the scope of the report as an addendum to the initial NIS (January, 2019) for the River Bride (Blackpool) Certified Drainage Scheme is clear.	None
1.1	Background		
2	Department of public expenditure and reform request for further information	This section provides a summary of the further information request, as follows: • *'With reference to the scope of the proposed works the channel maintenance programme that is proposed does not clearly characterise the extent or methods of maintenance. The NIS should provide sufficient detail in relation to the programme, locations, timelines and methods for all construction and maintenance works.* • *Provide details of extent of instream works including maximum extents of silt and gravel excavation in river bed and of any channel widening.* • *With reference to the identification of potential impacts of invasive species the NIS does not provide detail in relation to the extent of invasive species in the works area and does not describe the potential impacts from this source. Further information is required in relation to the mapping and quantifying of invasive species known to occur within the scheme area.* • *The Appropriate Assessment Screening conclusion statement requires rewording for clarity and to ensure the robustness of the NIS.* • *With reference to the cumulative impacts with other plans and projects provide reference in relation to projects in the area to demonstrate adequate assessment.* • *Provide mitigation measures that identify clear thresholds and standards'* This list is aligned with the actions list identified in the table above.	None

Section		Discussion	Actions required
3	The appropriate assessment process	Removal of non-statutory guidance material is noted. The AA process information presented states: • *'In light of the above court decision and using the precautionary principle with regard to potential for impacts on European Sites, the OPW took the opportunity to revise the AA screening and determined that a Natura Impact Statement should be completed. The NIS was undertaken in order to include relevant mitigation to address any potential for significant negative effects from the impacts identified in the screening process on the qualifying interests of downstream European Sites.'* This amendment addresses the conflict raised in relation to the consideration of mitigation measures at screening stage. Therefore, this has been made compliant; as can be seen in section 5.2 of the addendum.	None
3.1	Clarification on section 2.1-guidance		
3.2	Clarification on section 2.2-stages of article 6 assessment		
4	Description of the proposed project	The addendum report appropriately includes some of the text and detail from the original NIS and contextualises the information with respect to the FI. The report then includes additional information, including a worst-case scenario estimation: • *'The volume of future material to be removed from the scheme extents is impossible to predict and is dependent on future flow regime within the river, climate change and land use management upstream. As a worst-case scenario, it is envisaged that 180 m^3 material will be removed on an annual basis at the sediment trap. The sediment trap does not have to be fully emptied each time, and some material in the low flow channel will be retained. Once the river has adjusted to the works upstream an annual removal of sediment is considered sufficient. A set of marker posts will be installed along the sediment trap to trigger removal. This shall be based on a trigger of 0.4m fill depth in the first bay, and 0.3m in the second and third.*	None
4.1	Clarification on section 3.2.11-maintenance regime		

Section		Discussion	Actions required
		And details in relation to ecological considerations incorporated into the phased approach to maintenance works: *'Maintenance works that include the removal of scrub/transitional woodland that has developed along the bankside via bush cutting/branch trimming, tree cutting or mulching will be undertaken outside of the bird nesting season (from the 1st March to 31st August as per the Wildlife Act (1976). If required as emergency works, this should be carried out in consultation with a suitably qualified ecologist. In-stream maintenance works for silt and vegetation management will be carried out outside of the salmonid spawning season (November to March) on channels with salmonid spawning habitat. Any works required during this period are carried out in consultation with IFI. As a result, there may be a two-stage approach to the works, with silt and in-stream vegetation management carried out during the open season (i.e. summer months), while woody vegetation removal is carried out in the winter months.'* This section provides a higher resolution of data relating to the potential effects from the on-going maintenance works. Subsequent sections of this table determine if these have been adequately incorporated into the assessment process.	
4.2	Identification of potential impacts	This section provides a higher resolution of data relating to the estimated volume of excavated material for each of the river sections identified within the scheme. Subsequent sections of this table determine if these have been adequately incorporated into the assessment process.	None
5	Designated sites in proximity to the proposed project	The extent and location of the invasive species known to occur on site has been provided in detail. The supplementary Appendix B outlines a detailed invasive species management plan. Section 6.2 of this report identifies that channel maintenance works will need to be provided: *'During channel maintenance works, a management plan will need to be put in place to prevent the spread of non-native invasive species*	It is recommended that the Invasive Species Management Plan measures identified for the on-going maintenance works are formalised as a consent condition to eliminate any inconsistencies.
5.1	Clarification on section 4.2- identification of		

Section		Discussion	Actions required
	potential impacts	*downstream during those works. Site hygiene protocols will need to be implemented. As discussed above, the management plan for the operational phase will need to be formulated in consultation with the NPWS, IFI, OPW, and Cork County Council*.' This text is inconsistent with the text provided in section 3 of the addendum relating to the operational phase maintenance also includes considerations for invasive species: • '*Maintenance will have regard for the requirements of invasive species on site and will follow the requirements within the Environmental Guidance: Drainage Maintenance & Construction (OPW, 2019) particularly those found within EP18D, disturbance and spread of invasive species will be avoided during maintenance*.' However, these inconsistencies are not detrimental to the integrity of the assessment. The assessment identifies the need for an operational phase invasive species management plan which, according to the addendum report and supporting Appendix B will include the following elements: • *… Will follow the requirements within the Environmental Guidance: Drainage Maintenance & Construction (OPW, 2019) particularly those found within EP18D, disturbance and spread of invasive species will be avoided during maintenance.' And* • *The management plan for the operational phase will need to be formulated in consultation with the NPWS, IFI, OPW, and Cork County Council.'*	See recommended conditions below.
5.2	Clarification of section 4.3- appropriate assessment	The AA screening process and subsequent conclusion text has been amended to align with current case law as identified in section 3.2 of the addendum report.	None

Section		Discussion	Actions required
	screening conclusion		
6	Impact assessment Clarification on section 5- impact assessment	There are a few discrepancies in the use of language within the report such as Special Conservation Interest species being referred to as Qualifying Interests: *'During the operational phase of the Scheme there will be no direct habitat loss or disturbance to the wintering and breeding bird populations which make up the qualifying intertest within Cork Harbour SPA as no maintenance works (silt and vegetation management) will be undertaken within this European Site.'* However, these discrepancies are not identified to affect the integrity of the assessment process. The information presented in the addendum sets out additional considerations in relation to the operational phase effects from the Scheme. This additional assessment considers the additional details related to the works identified in section 4 of the addendum; the key points identified are: • Risk of the spread of invasive species; and • Risks associated with sedimentation issues. These additional considerations are adequately addressed in the text. The NIS Addendum provides sufficient information in relation to the volume of anticipated excavation and the estimated timelines and work flows related to the ongoing maintenance works. The final paragraph reads as follows: '*Maintenance activities in the absence of appropriate mitigation measures, are not considered to have negative impacts downstream on qualifying interests of the Cork Harbour SPA and Great Island Channel SAC. Therefore, the potential impacts considered in the NIS in consideration of the*	The AA determination should reflect the requirement for an Invasive Species Management Plan as a mitigation measure in relation to the AA Process. See recommended conditions below.

Section		Discussion	Actions required
		additional information presented in this Addendum infer that the conclusions of the NIS remain the same.' This concluding statement is inconsistent with the rationale provided within this section which identifies the need to control invasive species. If the works were undertaken in the absence of the mitigation measures identified, there are pathways for effects such as the spread of invasive species. Therefore, these mitigation measures are required following the rationale provided. However, this is identified to be a text-based error and the mitigation measures necessary to avoid potential significant adverse effects to the ecological integrity of the European site is contained within the addendum report (specifically in Section 8.3).	
7	Cumulative impacts with other plans/projects 7.1 clarification on section 6- in-combination effects	The addendum report details the additional project level assessment undertaken in relation to in combination effects within the scheme works area. This assessment identifies that the Cork County Council planning database was assessed and identifies that all of the projects within the receiving environment are *'predominantly change of use applications or small-scale extension works of existing industrial facilities.'* This assessment process is seen to be robust.	None
8	Mitigation measures	The detail provided in relation to the mitigation measures designed are clearly explained and the information provided in section 4 of the addendum ensures there is adequate information presented within the NIS.	None
8.1	Clarification on section 7- mitigation measures		
8.2	Additional measures for the protection of habitats and		

Section		Discussion	Actions required
	species outside of European sites		
8.3	Clarification on section 7.2- mitigation to avoid the spread of invasive plant species	The text incorrectly states that: *'Invasive Species Management Plan is available in Appendix C.'* However, this is a text-based error which should refer to appendix B. The inconsistencies, identified above, between the Appendix B and the operational phase description in Section 4 remain to be clarified in this section to ensure the mitigation measure encompasses the full scope of works proposed. The invasive species management plan should include: • *… Will follow the requirements within the Environmental Guidance: Drainage Maintenance & Construction (OPW, 2019) particularly those found within EP18D, disturbance and spread of invasive species will be avoided during maintenance.' And* • *The management plan for the operational phase will need to be formulated in consultation with the NPWS, IFI, OPW, and Cork County Council.'*	It is recommended that the Invasive Species Management Plan measures identified for the on-going maintenance works are formalised as a consent condition to eliminate any inconsistencies. See recommended conditions below.
	Conclusions	Similar to other sections in the addendum report there are a few discrepancies in the use of language within the report such as Special Conservation Interest species being referred to as Qualifying Interests. However, this is identified as a text-based error which does not influence the integrity of the assessment process. The information presented in the NIS and Addendum is robust and supports the conclusion statement which reads: *'It is therefore concluded that the River Bride (Blackpool) Drainage Scheme, based on the original findings of the NIS and this NIS Addendum , alone and/or in-combination with other plans and/or projects, will not give rise to significant negative effects on the integrity of the Cork Harbour SPA and*	None

Section	Discussion	Actions required
	Great Island Channel SAC as long as the avoidance and mitigation measure as listed in the NIS and the Addendum are implemented in full.'	
Competency	The report demonstrates a high level of competency and experience.	None

Conclusions

The original Natura Impact Statement together with NIS Addendum Report and associated material have been assessed and it has been determined that, as a whole, they are compliant with Article 6(3) of the Habitats Directive. The information within the whole NIS document provides adequate information to inform the Appropriate Assessment (AA) process.

There is a minor discrepancy between section 4 and Appendix B of the addendum in relation to the scope of invasive species management during the operational phase. However, this discrepancy does not affect the integrity of the assessment process. The mitigation measures presented in the reports adequately address the potential sources for effects identified from the scope of works. The conclusion of the NIS that implementation of the scheme, including its mitigation measures, is not foreseen to have any likely significant effects on European sites is therefore supported.

Recommendations

Following the review process a number of recommendations are made for consideration by the Minister as conditions which may be imposed in the event that it is decided to issue a Commencement Order for the scheme. To avoid duplication and for clarity these recommendations are set out (under the same *Recommendations* heading) in the EIAR review document.

Information made available to CAAS for review

This information comprised the original NIS, NIS Addendum and associated documents as well as the scheme confirmation drawings and schedules.

Competency of Review Team

Ecologist - Andrew Torsney has an MRes in in Biodiversity and Conservation from the University of Leeds. Andrew is a full member of the Chartered Institute of Ecology and Environmental Management (MCIEEM). Andrew has over eight years' experience working as an ecologist on both national and local scale projects. His experience ranges from academic research which has been implemented by practical management to extensive consultancy work. Andrew has designed and coordinated ecological elements of Environmental Impact Assessments (EIAs) and Appropriate Assessments (AAs) for numerous large-scale projects.

Review Manager - Paul Fingleton has an MSc in Rural and Regional Resources Planning (with specialisation in EIA), University of Aberdeen, 1990. Paul is a member of the International Association for Impact Assessment as well as the Institute of Environmental Management and Assessment. Paul has over twenty years' experience working in the area of Environmental Assessment. Paul has been involved in a diverse range of projects including contributions to, and co-ordination of, a number of complex EIARs, NISs and / or IPPCL Applications for projects. He is the lead author of the current statutory EPA Guidelines and accompanying Advice Notes on EIARs and has been involved in all previous editions of these documents. He also provides various other EIA related consultancy services to the EPA. Paul has been engaged by numerous consent authorities to assist at various stages of EIA and AA processes, particularly in reviewing EIARs and AAs. This review work has included reviews of a number of flood relief schemes on behalf of the Department of Public Enterprise and Reform.