ATKINS
Member of the SNC-Lavalin Group

[redacted]

Our Ref: 5162160CO42

Vincent O'Malley
Trans_ort Infrastructure Ireland
[redacted]

16th June 2021

By email to: [redacted]

Re. Submission of Natura Impact Statement pursuant to the Minister for Tourism, Culture, Arts, Gaeltacht, Sport and Media pursuant to the requirements of Regulation 49(9)(c) of the European Communities (Birds and Natural Habitats) Regulations, 2011 (as amended)

Lot 2 – Munster Bridges Term Maintenance Contract No. 3 – Culvert Inverts – Group 1 (Derryreag Culvert)

Further to the submission of a Natura Impact Statement relating to works proposed to be undertaken at Derryreag Culvert (KY-N22-028.00), Co. Kerry correspondence was received from Gerry Clabby, Head of Ecological Assessment, National Parks and Wildlife Service dated 18th May 2021.

This correspondence acknowledged Transport Infrastructure Ireland's (TII) email dated 6th April 2021 in respect of the project referred to above and confirmed that they had reviewed the Natura Impact Statement (NIS) referred to the Minister in this regard.

The Department did, however, raise two issues of concern which need to be addressed. These are discussed in turn below: -

Point 1 - Otter

"The project is maintaining the status quo in terms of the structure of the culvert, with a fall at its outlet. The appropriate assessment should assess any possible effects of otter mortality due to maintaining the current culvert structure and assess if otters are likely to cross the road rather than travelling up the culvert during high flow conditions. Also, the possibility of inserting ledges to allow otter access to the downstream outlet of the culvert should be considered. It cannot be ruled out that the otters using this stream are not otters from the cSAC river downstream to which the conservation objectives apply, hence the need to consider this in the appropriate assessment."

[redacted]

Response

The Eurasian Otter (*Lutra lutra*) is widespread throughout all Irish freshwater and most estuarine and coastal habitats (Chapman & Chapman, 1982; Marnell, 2016). The overall conservation status of the otter population in Ireland is reported as being 'Favourable' (NPWS, 2013a; NPWS, 2019) with an overall trend in conservation status of 'Improving' (NPWS, 2019; see also Reid *et al*., 2013).

Otter are protected by a number of legal instruments. Key amongst these is protection under Annex II & IV of the EU Habitats Directive (92/43/EEC), which was transposed into Irish law by the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. 477/2011) and further amended in 2015. Otters, including their breeding and resting places, are also protected under national legislation such as the Birds and Natural Habitats Regulations and the Wildlife Acts 1976 to 2012.

Threats and pressures to otter populations include habitat destruction due to human activity, disease, road casualties and the degradation of water quality which in turn can affect fish biomass (Chanin, 2003). NPWS (2013a) listed a number of pressures on otter, which included road mortalities. Roadkill data from 2007-2013 reported 10-30 otters killed on Irish roads each year and road mortalities were considered a medium pressure in 2013. Otters are still killed on Irish roads, however it is not considered to pose a risk to the national conservation status of otter, as road design and the network of mammal underpasses on new roads and the erection of road-side signage are positive examples of measures that have been implemented to reduce the mortality of otter on roads (NPWS, 2019). Other threats such as entanglement in fishing nets and diffuse and point-source pollution of freshwater and coastal waterbodies can indirectly impact on otter. However, these threats listed above are considered to be pressures impacting otter on a local rather than a national scale (NPWS, 2019).

The National Roads Authority, now Transport Infrastructure Ireland, has produced guidance documents regarding the crossing of watercourses and considerations for otter during the construction of road schemes; '*Guidelines for the crossing of watercourses during the construction of national road schemes*' and '*Guidelines for the treatment of otters prior to the construction of national road schemes*' (NRA, 2009a & 2009b). These guidelines detail procedures to be taken during construction in the vicinity of otter holts, the destruction of holts under licence, provision of a means of passage at crossing points (in particular at watercourses) and installation of mammal resistant fencing.

The proposed project comprises the provision of a concrete lining and associated instream works to the invert of Derryreag Culvert (KY-N22-028.00), Co. Kerry. Derryreag Culvert is located on the N22, between Coom and west of Ballyvourney. Derryreag Culvert is a single span structure situated on the Derryreag stream, a tributary of the River Flesk (also called the Clydagh at this location on OSi Discovery series mapping) which flows westwards to Lough Laune in Killarney. Derryreag Culvert is located approximately 150m upstream of the River Flesk.

The Derryreag stream is an upland stream with a medium to steep gradient. The channel is approximately 2m in width. The flow type consists of shallow runs, cascades and pools. Upstream of the culvert, bedrock is very prominent. A step and cascade is present approximately 20m upstream of the culvert. Downstream of the culvert bedrock is prominent again, with large rocks and boulders. A significant step and cascade is located approximately 10m downstream of the culvert.

With respect to published data, Otter activity signs were recorded on the River Flesk approximately 2km upstream of the Derryreag-Flesk confluence during the *National Otter Survey of Ireland* 2010/2012 (Reid *et al*., 2013). Given the nature of the River Flesk and the fish community it supports, the Flesk would provide very good supporting habitat for otter. There are no road kill records for otter in the vicinity of the culvert on the Road Kill Survey 2020 database[1].

The site was visited by an ecologist in September 2019. The area surveyed included 50m both upstream and downstream of the bridge. Otter activity was not recorded at the time of the site visit. Otter could commute upstream from the River Flesk along the riverbanks. No otter holts were recorded.

[1] 2020 Road Kill Survey - http://www.biology.ie/mapv.php?m=npws

The option of installing an otter ledge (in line with NRA published guidance) was considered. However, the culvert in this case is not a concrete square / rectangular structure onto which a ledge can be easily attached. This corrugated steel structure has been identified as having durability and structural issues as a result of the erosion of previous bitumen protection linings and progressive corrosion of the metal particularly in the lower region. The purpose of the concrete invert is to mitigate further corrosion and section loss to the invert of the culvert and to restore and maintain it structural integrity. Atkins are also the engineers to TII on this scheme. Engineering advice provided to us by Atkins engineering and discussed with TII was that attachment of a ledge to this structure was not a viable and sustainable option and may in fact add to the current durability and structural issues. It was therefore not possible for us to recommend installation of an otter ledge as a mitigation measure.

Derryreag Culvert is not within a European site. Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment SAC (000365) is located approximately 100m downstream of Derryreag Culvert. Therefore, this SAC is within the zone of influence of the proposed project.

Otter is a qualifying interest of the Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment SAC (NPWS, 2012; 2013b). The Conservation Objective is *to restore the favourable conservation condition of Otter in the Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment SAC*, which is defined by the list of attributes as set out in the Conservation Objectives document for the Lower River Shannon – see Appendix A.

The potential for the proposed works to impact upon these Attributes is summarised in Table 1.

Table 1 - Review of Attributes of Lower River Shannon SAC for Otter against the proposed works.

Attribute	Impact of culvert works
Distribution	As measured by the percentage of positive survey sites. Proposed works will not restrict access to the environs of the culvert, nor will they alter the ability of Otter to pass through the culvert to upstream stretches of the Derryreag Stream. Therefore, undertaking the works does not change the risk of Otter crossing the road during periods of very heavy rainfall; thus, putting them at risk of road mortality. However, as noted above, there are no road kill records for otter in the vicinity of the culvert on the Road Kill Survey database. While this data should be interpreted cautiously, it does at a minimum indicate that Derryreag culvert is not a hot spot for Otter mortality as it stands. As noted, the site was visited by an ecologist in September 2019. Otter activity was not recorded at the time of the site visit within 50m upstream or downstream of the bridge. Otter could commute upstream from the River Flesk along the riverbanks. No otter holts were recorded. While it would be good practice to insert a mammal ledge as part of the proposed works, removing the need for Otter to ever cross the N22; as noted above for engineering reasons this is not possible in the case of corrugated metal culverts. It is noted that the Department has acknowledged that the "*The project is maintaining the status quo in terms of the structure of the culvert, with a fall at its outlet*". No further mitigation is practical at this location.
Extent of terrestrial habitat	There will be no terrestrial habitat loss associated with the proposed works. No change to the extent of terrestrial habitat is predicted.
Extent of freshwater (river) habitat	There will be no loss of river habitat due to the proposed works. Works to place a concrete invert on the existing corrugated metal culvert are all within the culvert. The ability of otter to pass through the culvert will be unchanged by these works. Placement of a concrete invert in the culvert will not affect the *status quo*. Furthermore, the placement of a concrete invert within the culvert will not affect the hydrological regime within the stream (as set out in the Hydraulic Assessment which accompanied the NIS; see Appendix C to the NIS).

Attribute	Impact of culvert works
	Thus, it is anticipated that the river conditions under which an Otter can use the culvert will remain unchanged. The only material change would be that the surface of the concrete invert would be rougher and might provide greater grip for otter moving through the culvert than might be the case on the existing smooth corrugated metal surface.
Extent of freshwater (lake/lagoon) habitat	Lake / lagoon habitats are not located in the environs of Derryreag Culvert. No lake / lagoon habitats would be impacted by the proposed works.
Couching sites and holts	During the September 2019 site survey, no otter couches or holts were noted within 50m upstream or downstream of the culvert. The mitigation measures of the NIS detail that a pre-construction survey will be carried out prior to commencement of the works.
Fish biomass available	As noted, Derryreag Culvert is located 150m from the River Flesk. Downstream of the culvert bedrock is prominent, with large rocks and boulders. A significant step and cascade are located approximately 10m downstream of the culvert. This may hinder fish passage upstream of the culvert. However, the stream and the Flesk are both considered good quality habitat for otter. The placement of a concrete invert within the culvert will not affect the hydrological regime within the stream (as set out in the Hydraulic Assessment which accompanied the NIS; see Appendix C to the NIS). A deterioration in water quality of the stream and the River Flesk could indirectly impact on fish biomass availability to Otter within the watercourses. The NIS details mitigation measures to mitigate potential impacts to water quality of the stream and the River Flesk, and hence the SAC. It is therefore anticipated that the proposed works will not affect fish biomass available to Otter either upstream or downstream of the culvert.
Barriers to connectivity	As noted, a step and cascade are present approximately 20m upstream of the culvert; while a significant step and cascade is located approximately 10m downstream of the culvert. This may hinder fish passage upstream of the culvert but is not likely to represent a barrier to upstream movement of otter. The placement of a concrete invert within the culvert will not affect the hydrological regime within the stream and therefore will not alter the frequency with which the culvert is passable to otter (as set out in the Hydraulic Assessment which accompanied the NIS; see Appendix C to the NIS).

References: -

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Chapman, P.J. and Chapman, L.L. (1982) *Otter Survey of Ireland, 1980-81*. The Vincent Wildlife NRA (2009) Survey Guidelines for National Road Schemes. National Roads Authority. Dublin, Ireland.

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NPWS (2013b). *Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment SAC 000365. Site Synopsis*. (Version date: 20.08.2013; 000365_Rev13.Doc).

NPWS (2017). *Conservation Objectives: Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment SAC 000365. Version 1.* National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht.

NPWS (2019). The Status of EU Protected Habitats and Species in Ireland. Volume 3: Species Assessments. Unpublished NPWS report. Edited by: Deirdre Lynn and Fionnuala O'Neill.

NRA (2009a). *Survey Guidelines for National Road Schemes.* National Roads Authority. Dublin, Ireland.

NRA (2009b). Guidelines for the treatment of otter prior to the construction of National Road Scheme. National Roads Authority. Dublin, Ireland.

Reid, N., Hayden, B., Lundy, M.G., Pietravalle, S., McDonald, R.A. & Montgomery, W.I. (2013) National Otter Survey of Ireland 2010/12. Irish Wildlife Manuals No. 76. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland.

2 *Ecological clerk of works*

"An ecological clerk-of-works is recommended to be on-site during critical works periods (especially involving initial cleansing, placement of silt control measures, excavation, concrete pouring and use of chemicals), to ensure compliance with mitigation measures, and liaison with IFI staff if required. The sites should be examined for breeding otters, 50m upstream and downstream of the culverts, prior to works being implemented at a particular culvert. TII guidelines should be followed in relation to otters".

Response

It can be confirmed that as part of the proposed works TII will appoint an ecological clerk-of-works (ECoW). The ECoW will be on-site during critical works periods (especially involving initial cleansing, placement of silt control measures, excavation, concrete pouring and use of chemicals), to ensure compliance with mitigation measures. Together with the appointed Contractor, the Contractor's ecologist and the resident engineer appointed by TII, they will also be available to liaise with IFI staff if required.

As part of their duties the ECoW will undertake a Otter survey prior to the commencement of any works on site. This will look for signs of Otter breeding 50m upstream and downstream of the culverts. TII guidelines (NRA, 2009b) will be followed in relation to otters.

Yours sincerely,

Paul O'Donoghue
Associate Director / Ecolo ist
[redacted]

Appendix A

From: -

NPWS (2017). *Conservation Objectives: Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment SAC 000365. Version 1.* National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht.

Conservation Objectives for : Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment SAC [000365]

1355 Otter *Lutra lutra*

To maintain the favourable conservation condition of Otter in Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Distribution	Percentage positive survey sites	No significant decline	Measure based on standard otter survey technique. Favourable Conservation Status (FCS) target, based on 1980/81 survey findings, is 88% in SACs. Current range is estimated at 93.6% (Reid et al., 2013)
Extent of terrestrial habitat	Hectares	No significant decline. Area mapped and calculated as 1,936.8ha along river banks/lake shoreline/ around ponds	No field survey. Areas mapped to include 10m terrestrial buffer along shorelines and river banks identified as critical for otters (NPWS, 2007)
Extent of freshwater (river) habitat	Kilometres	No significant decline. Length mapped and calculated as 1,246.2km	No field survey. River length calculated on the basis that otters will utilise freshwater habitats from estuary to headwaters (Chapman and Chapman, 1982)
Extent of freshwater (lake) habitat	Hectares	No significant decline. Area mapped and calculated as 2,710.3ha	No field survey. Area mapped based on evidence that otters tend to forage within 80m of the shoreline (NPWS, 2007)
Couching sites and holts	Number	No significant decline	Otters need lying up areas throughout their territory where they are secure from disturbance (Kruuk and Moorhouse, 1991; Kruuk, 2006)
Fish biomass available	Kilograms	No significant decline	Broad diet that varies locally and seasonally, but dominated by fish, in particular salmonids, eels and sticklebacks in freshwater (Bailey and Rochford, 2006; Reid et al., 2013)
Barriers to connectivity	Number	No significant increase. For guidance, see map 11	Otters will regularly commute across stretches of open water up to 500m e.g. between the mainland and an island; between two islands; across an estuary (De Jongh and O'Neill, 2010). It is important that such commuting routes are not obstructed