From: [redacted]
To: A1 Birtley to Coal House
Subject: Environment Agency Response to A1 Birley Coal House Improvement Scheme
Date: 22 February 2020 12:37:00
Attachments: [redacted]

Hi,
Please find attached the Environment Agency's response to the Examining Authority's written questions and request for information.

Regards

Lucy

Lucy Mo
Planning Technical Specialist, Sustainable Places, North East
Environment Agency | Tyneside House, Skinnerburn Road, Newcastle upon Tyne, NE4 7AR

[redacted]

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Planning Inspectorate
Room 3/20 Eagle Wing
Temple Quay House (2 The Square)
Temple Quay Road
Bristol
Avon
BS1 6PN

Our ref: NA/2019/114837/02-L01
Your ref: TR010031

Date: 22 February 2020

Dear Sir/Madam

PLANNING ACT 2008 – SECTION 88 AND THE INFRASTRUCTURE PLANNING (EXAMINATION PROCEDURE) RULES 2010 – RULE 6. APPLICATION BY HIGHWAYS ENGLAND FOR AN ORDER GRANTING DEVELOPMENT CONSENT FOR THE A1 BIRTLEY TO COAL HOUSE IMPROVEMENT SCHEME (DEADLINE 2: THE EXAMINING AUTHORITY'S WRITTEN QUESTIONS) NZ2590258148
A1 BIRTLEY TO COAL HOUSE

In accordance with the timetable in Annex A of your letter dated 28 January 2020 please find enclosed our responses to the Examining Authority's written questions for this Development Consent Order (DCO) on behalf of the Environment Agency.

If you have any questions or require any clarification on the points below, please do not hesitate to contact me.

Yours faithfully

Lucy Mo
Planning Technical Specialist - Sustainable Places
[redacted]

Tyneside House, Skinnerburn Road, Newcastle Business Park, Newcastle upon Tyne, NE4 7AR.
Customer services line: 03708 506 506
Email: enquiries@environment-agency.gov.uk
www.environment-agency.gov.uk

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A1 Birtley to Coal House Improvement Scheme DCO Application Planning
On behalf of the Environment Agency (Deadline 2: 25 February 2020)

ExQ1: 1.0.3
Fish species, great crested newt and otter are protected species and receive protection through varies pieces of legislation. These species have been found to be present or potentially present at the proposed development site. In addition, Invasive Non-Native Species (INNS) have also been found to be present on site and have been identified as requiring management.

The Outline Construction Environmental Management Plan (CEMP) details a number of measures in which those species listed above would be protected and invasive species managed. In our previous response, we outlined the need to condition the Detailed CEMP and that protection of sensitive receptors needs to be taken into consideration at all times during works.

During this specific review we have noted details of the Outline CEMP and where appropriate we have detailed where further consideration is required. These considerations should be incorporated into the updated Outline CEMP and the Detailed CEMP.

With respect to table 3-1(register of environmental actions and commitments), we recommend the following additions:

Ref	Environment Agency Comment
G1	We note that upon the finalisation of the Outline CEMP to the CEMP, the Local Authority and Secretary of State will be consulted. We ask that the Environment Agency also be consulted in order to ensure our comments have been considered and included into the CEMP.
G6	G6 gives sufficient detail on the need for a suitable lighting strategy to protect fish species during construction activities and upon completion of works. Given the presence of otter identified on the river and included in the Environment Impact Assessment (EIA), this species should be referenced in the CEMP to allow them to be considered in any lighting strategy.
B3	This statement on fish passage in culverts should be clarified in order to ensure fish passage is maintained at all times, use of the term 'where possible' could imply that fish passage is beneficial but not mandatory. Fish passage needs to be in place at all times. The statement could be reworded as follows:

Tyneside House, Skinnerburn Road, Newcastle Business Park, Newcastle upon Tyne, NE4 7AR.
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	"Culverts will be designed taking into account fish migratory requirements to ensure that they do not present an obstruction to fish migration." Appendix A of this response contains guidance notes for new culverts, this can be referenced when constructing culverts in the channel in relation to fish. This provides information which may be useful during design as well as construction. Details and location of baffles or similar structures, e.g. pre barrages, to be installed either within or close to existing culverts for fish passage will need to be agreed with the Environment Agency. Natural beds within culverts will be beneficial creating habitat and preventing incision. Every effort should be made to include this into the designs.
B9 and B10 and W15	Any watercourse diversion work, coffer dams or other in-channel works must ensure fish passage is maintained and designed in such a way as to allow fish movement at times they are actively migrating. This includes maintaining adequate space and depth of water, as well as flow velocity, for fish passage. October to May inclusive, is the fish spawning period to avoid, rather than September to April.
B9	Current and up to date ecological survey work will be needed to inform any Environment Agency Flood Risk Activity Permit under the Environmental Permitting (England and Wales) Regulations 2016. This should be included as a requirement within the in the CEMP to ensure inclusion and to prevent any delays during permit applications. As part of an application the Environment Agency will assess the submission in relation to Fisheries, Biodiversity and Geomorphology, we'll also assess its compliance with the Northumbria River Basin Management Plan (RBMP). The RBMP states that the water environment should be protected and enhanced to prevent deterioration and promote the recovery of water bodies. It is advised that the development design a scheme which will help meet objectives and to promote the recovery of water bodies.
W3	As detailed in reference W10, opportunities for attenuation storage design that also benefits species and habitat creation should be included into the CEMP to ensue consideration and later stages in the

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	scheme.
W10	It is positive to see that there is opportunity for river restoration included within the CEMP for options in relation to the Allerdene Burn. Any design at this location should have input from a suitably qualified geomorphologist in order to ensure a suitable design is brought forward that maximises the morphology of the channel and riparian zone for habitats and wildlife. The following should also be considered: There are two options for the reinstatement for the Allerdene Burn, an updated culvert with greater capacity (embankment option) or an open channel (viaduct option). Both options at detailed design stage will need to be designed in such a way as to maximise environmental benefits: • For the Allerdene embankment option, there would be a re-engineered culvert. There are in-channel improvements which can be made to increase the flow diversity of the modified channel, which can in turn affect the morphology of the channel and therefore the biodiversity of the channel. This needs to be considered in any detailed design. • For the Allerdene viaduct option, the Allerdene Burn is noted to be realigned as part of the scheme. There is an opportunity to realign this in such a manner as to work with natural processes in order to gain a more diverse fluvial system than a uniform straight section of channel. This needs to be considered in any detailed design as opposed to an open ditch. • For both the viaduct and embankment options, it is noted that flow control measures will transfer water from the channel out onto the floodplain during a 1% event. The design of the channel and the adjacent floodplain could allow more frequent flooding, with the potential to trap and store fines and nutrients, help reduce downstream flooding and benefit local biodiversity. We would welcome proposals as to how this may be achieved.

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W12	Current and up to date ecological survey work will be needed to inform any Environment Agency Flood Risk Activity Permit under the Environmental Permitting (England and Wales) Regulations 2016. This should be included as a requirement within the in the CEMP to ensure inclusion and to prevent any delays during permit applications. As part of an application the Environment Agency will assess the submission in relation to Fisheries, Biodiversity and Geomorphology, we'll also assess its compliance with the Northumbria River Basin Management Plan (RBMP). The RBMP states that the water environment should be protected and enhanced to prevent deterioration and promote the recovery of water bodies. It is advised that the development design a scheme which will help meet objectives and to promote the recovery of water bodies.

Otters
Otters are not mentioned in the Outline CEMP but are included within the mitigation required within the Biodiversity Chapter of the EIA. The CEMP must be updated to reflect the mitigation and procedures in place to survey for and protect otter as part of the scheme.

Night time works have been listed in specific areas where appropriate in reference G5. Any night time working on or near the River Team risks the possibility of European otter moving from the watercourse and attempting to re-enter the river by crossing live road networks. Due to the Local Importance given to otter as part of the EIA, specific mitigation for otter has not been listed. However, consideration should be given to prevent otter accessing the live road networks where the risk of traffic collision is high through the use of otter fencing from the River Team.

Water vole
The Environment Agency has requested further information on the presence of water vole in relation to the scheme. Should any action be needed for the survey of or protection of this species, this must be detailed in the CEMP.

Culverts
The River Team at the Coalhouse Roundabout will be subject to a temporary culvert during works. No detail is provided in the CEMP or the EIA on the removal of the culvert and restoration of the river once the works are complete, and no habitat mitigation is shown on the Environmental Masterplan at the river in this location.

Reinstating the river post-construction needs to ensure that a natural watercourse is designed into the scheme and includes measures to improve on the existing

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relatively poor quality habitat available for fish and other species within this straightened and uniform section of the River Team. The CEMP will need to include the process and design considerations as per other landscape and mitigation requirements elsewhere in the document for the restoration of the river once works are complete.

ExQ1: 1.10.1
Paragraph 2.3.7 of the Environmental Statement Flood Risk Assessment (FRA) remains our current position and is still applicable. This approach has been hydraulically modelled by the Applicant and has informed how their development will be managed and mitigated for the life time of the development.

ExQ1: 1.10.2
The River Team modelling undertaken by Environment Agency has not been used to update our Flood Maps for Planning. It is envisaged that our Flood Maps for Planning will be updated within the next six months.

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Appendix A: Guidance notes for new culverts

Many of the potential problems with culverts can be avoided by doing the following:

- matching the culvert gradient to that of the existing stream. Any changes are likely to cause unacceptable hydraulic conditions at the head or tail of the culvert. The most common problem is at the downstream end where excessive erosion occurs, resulting in perching of the culvert;
- Box section culverts are preferred in order to mimic natural stream profile as much as practically possible;
- Set culvert c.500mm below existing bed level to allow natural bed material to develop;
- maintain a minimum depth of 100mm within the culvert;
- drowning the downstream end of the culvert to a depth of at least 0.15-0.30m;
- providing a resting pool of sufficient size and depth immediately downstream of the culvert. Sometimes one may also be required upstream as well. The minimum depth should be 30cms for trout and coarse fish, and 45cms for salmon. An area of deeper water with adequate cover for cover and resting should also be included;
- aligning the culvert with the water course, i.e. no immediate change in direction at the head or tail of the structure. This minimises the length of culvert and provides a more stable hydraulic regime at inlet and outlet. It does not necessarily prevent moving the watercourse;
- ensuring that the approach conditions are within the cruising, i.e.sustained, swimming speed of the fish;
- ensuring that if the use of trash screens cannot be avoided then they have adequate bfree gap for fish to pass unimpeded (see section on debris protection);
- avoiding sharp light/dark interfaces at the culvert entrance and exit. Fish can be reluctant to pass a sudden change, and this can be avoided, for example, by the judicious planting of vegetation;
- providing at least one barrel at a low enough level to permit passage at low flow where multiple -barrel culverts are used;
- using culverts with a high roughness coefficient to encourage boundary layer effects. Where culverts are used there are various configurations that may be considered, in order of preference for fish passage these are:
- bottomless-arch culvert retaining the natural stream bed;
- culvert with a depressed invert to permit natural stream-bed materials to lie on the bed and sufficient depth of water in which fish can swim etc;
- provision of a low flow channel within the barrel and; and
- provision of baffles within the culvert.

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