Ein cyf/Our ref: CAS-34643-H9M9
Eich cyf/Your ref: A55A494A548 ESSR
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13/07/2017

I sylw / For the attention of: Owen Tucker

Dear Sir,

PROPOSAL: Road Improvements o A55/A494/A548 Environmental Screening and Scoping Report (ESSR) : WelTAG Key Stage 2

LOCATION: A55/A494/A548

Thank you for consulting Cyfoeth Naturiol Cymru / Natural Resources Wales about the above, which was received on the 9th of June 2017.

Natural Resources Wales has been consulted on the document titled: "A55/A494/A548 Deeside Corridor Improvement: Key Stage 2WelTAG Key Stage 2 Report" which assess the identified options for this proposal under Economic, Environment and Social Factors, for comment. We note that many of our comments provided within our previous response dated 4th of December 2015, are still applicable at this stage of the WelTag process and have been included here for reference.

We note that later we will be consulted on an Environmental Impact Assessment Screening Report and Stage 1 Screening Assessment of the Implications of the scheme on European Sites.

Route options
From the information provided to date NRW understands that the proposal at present considers two potential options/routes for road improvements/ developments namely the 'Red Package' and the 'Blue Package'.

Red Package
The red package would entail road improvements to the A548 and the construction of a new road with two lanes in each direction, between the A55 and A548. This route would have an approximate length of 13km that would include some online improvement.

Blue Package
The blue package would entail the widening of the A55/A494 route, replacement road bridge crossing the River Dee, junction improvements including the Ewloe interchange, removal and modification of junctions, 3 lanes in each direction and is an approximate length of 9.8km.

In response to the information provided to date Natural Resources Wales have the following comments:

Costings
With regard to costing of the proposal in the context of nature conservation, we have the following comments:

NRW note that costings have been submitted for red and blue routes however we consider that the following should also be included as material issues associated with project costings:
Costings for both options should include the acquisition and long term operational costs (operational costs in this case include management, surveillance and wardening). The red route is likely to require substantive acquisition of land for compensation and this requirement does not appear to have been critically or effectively considered. If the red route is progressed, the identified cost should include costs relating to the replacement of the Dee Bridge and the A55/A494 interchange- clarification of the whether this has been included is required.

Geoscience
Based on the information submitted to date we have the following comments:
Section 7.9 states that the effect on groundwater has been assessed in a qualitative manner via a desk based study. We support this approach at early stages of a project, and agree that it should be followed up by an intrusive investigation at a later stage. We have not seen the desk top study so cannot comment further.

Within Section 9 the risk to soils (including the underlying principal aquifer) are briefly considered which is appropriate for this stage. However, it is not known how this conclusion was reached and we will require further clarification on this and we look forward to reviewing further information at a later stage.

As part of any road improvements Environmental Impact Assessment and Environmental Statement should include the following investigations and assessments to determine the potential impacts to controlled waters.

a) **Water Feature Survey** – see “requirements for water features survey” below.

b) **Preliminary Risk Assessment (PRA)** – the propose route may pass through potential areas of land contamination from previous and historical use. The requirements for a PRA are outlined in CLR11 and "Guiding Principles for Land Contamination (EA, 2010 and adopted by Natural Resources Wales).
c) **Method Statements** – to include pollution prevention measures and drainage management plans for surface waters and groundwaters.

The developer must undertake a preliminary site assessment, which should include the following:

1. Identification of all water features both surface and groundwater (ponds, springs, ditches, culverts etc.) within a 500 metres radius of the site.
2. Use made of any of these water features. This should include the construction details of wells and boreholes and details of the lithology into which they are installed;
3. An indication of the flow regime in the spring or surface water feature, for example whether or not the water feature flows throughout the year or dries up during summer months;
4. Accessibility to the spring/well;
5. This information should be identified on a suitably scaled map (i.e. 1:10,000), tabulated and submitted to Natural Resources Wales. It would be useful for the developer to photograph each of the identified water features during the survey.

Based on the results of the survey the applicant must assess the likely impacts from the development on both quantity and quality of the surface water and groundwater. This should take into consideration both the preferred methods of construction and the assumed hydrogeology in the vicinity of the development.

Natural Resources Wales may require identified groundwater features to be monitored during the proposed workings. We would therefore recommend that the survey be undertaken as soon as possible to enable the developer to carry out suitable baseline monitoring prior to the commencement of workings at the site.

Flood Risk

Blue Route

Paragraph 7.11.7 indicates that the proposed A494 widening at Queensferry may require a diversion of Queensferry Drain and Daisy Bank Farm Drain, which are both designated as a "main river". We have previously advised that the Queensferry Drain Pumping station may also require realignment to allow for the widening of this section of the A494 within the relatively narrow corridor available in this section. There is no discussion of this within the report, and we are unsure as to whether this is an oversight, or whether the project team do not consider that the scheme will require the relocation of the pumping station. Further clarification of this is recommended within the report. In addition, we had anticipated that there would be some "high level" options presented within the report to show how the water features in this location could be modified as part of the scheme, taking into account our opposition to the culverting of watercourses.

We have also previously advised that the Stage 2 Study should identify those areas where the stability and serviceability of exiting flood defence embankments could be affected by the proposed works, so that potential issues could be considered at an early stage. It appears that the current Stage 2 Study has not considered this.

Section 9 “Water Environment” makes a commitment to undertake a detailed Flood Consequences Assessment (FCA), although there is little clarification about when this will be completed. We do not necessarily agree that it is appropriate, at this stage, to state that “all other flood risks are considered to be slight/neutral”. It is for the FCA to identify the key flood risks to, and arising from the proposed development, and to establish appropriate mitigation measures to ensure that the flooding consequences can be acceptably managed over the development lifetime in accordance with TAN15: Development & Flood Risk. If flood risk issues are identified at a later stage, we will respond accordingly. We have previously indicated that the carriageway widening in vicinity of the River Dee and its floodplain, has the potential to displace flood waters, which could adversely affect flood risk elsewhere. This requires detailed assessment at the appropriate stage. We had anticipated that there would be detailed and quantitative assessments carried out at this stage of the project, so that there was an understanding of the potential flood risk implications associated with this option.

Marine Licencing
The parts of the bridge between left and right bank MHWS (Mean High Water Springs) are likely to need a Marine Licence (this may include some of the riverside parts of the flood defence embankments but isn’t likely to include the entire structures). Note any new bridge piers in the river channel would be subject to Marine Licensing requirements. Please direct any queries about Marine Licensing to the team at marinelicensing@cyfoethnaturiolcymru.gov.uk.

Flood Risk Activity Permit
Any work on the Dee *floodplain* could need a Flood Risk Activity Permit under the Environmental Permitting (England and Wales) (Amendment) (No. 2) Regulations 2016, along with all works affecting the main rivers Daisy Bank Farm Drain, Queensferry Drain and Queensferry Drain pumping station. We’ll be able to clarify which elements of the work will need a Permit once more detailed plans/designs are available.

Any works to the A494 *bridge* would not need a Flood Risk Activity Permit (government works in relation to a bridge are excluded under paragraph 10, Part I of Schedule 23ZA of the Regulations), but we welcome the opportunity to work closely with you on the design plans for the bridge because they have potential to adversely affect the flood defence embankments which protect the community of Queensferry.

Red Route
We welcome the commitment to undertake a detailed Flood Consequences Assessment (FCA) to support and inform the proposals although there is little clarification about when this will be completed. We do not necessarily agree that it is appropriate, at this stage, to state that “all other flood risks are considered to be slight/neutral”. It is for the FCA to identify the key flood risks to, and arising from the proposed development, and also to

establish appropriate mitigation measures to ensure that the flooding consequences can be acceptably managed over the development lifetime in accordance with TAN15: Development & Flood Risk. If flood risk issues are identified at a later stage, we will respond accordingly. It is also important to note that due to the limitations of our Flood Map information, which does not include catchments less than 3km^2, there may be unquantified flood risk associated with watercourses along the route which will also need to be addressed with site specific hydraulic assessment as part of any FCA.

This route also has the potential to affect numerous “ordinary” and “main river” watercourses and their flood plains, and bespoke Flood Risk Activity Permits may be required from Natural Resources Wales for works and/or structures affecting “main river”, their floodplains, and flood defence infrastructure.

For both the red and blue options, we would be pleased to discuss the scope of the FCA as the project progresses. When considering the impact of proposed highway infrastructure on flooding both to the highway and elsewhere, the FCA should include (but not necessarily be limited to) assessment of:

- the effect of any change to existing bridges/new bridge design
- appropriate sizing for new culverts
- assessment of any changes to flood risk resulting from changes (e.g. upsizing) to existing culverts
- assessment of flooding in the event bridges and culverts become blocked
- assessment of any proposed river realignment(s)
- any impacts on overland flow routes
- proposed mitigation measures if adverse impacts are identified

These assessments should consider the flood risks up to the 0.1% AEP fluvial and 0.1% AEP *plus climate change* tidal events (including with a breach of the tidal defences).

Protected Sites
SACs are European sites, protected under the provisions of the Conservation of Habitats and Species Regulations (2010) and the Countryside and Rights of Way Act 2000.

Proposals with potential to affect a Special Area of Conservation must be subject to special scrutiny under Regulation 61 of the Conservation of Habitats and Species Regulation 2010 (as amended) (hereafter referred to as the Habitats Regulations). Regulation 61(2) requires the developer to provide the information the competent authority may reasonably require for the Habitats Regulations Assessment (HRA).

The application site is located within the environs of the following statutory sites:

- *Dee Estuary Site of Special Scientific Interest (SSSI)*
- *Dee Estuary Ramsar Site*
- *Dee Estuary Special Protection Area (SPA)*
- *Dee Estuary Special Area of Conservation (SAC)*

- *River Dee and Bala Lake Sites Special Area of Conservation (SAC)*
- *River Dee Site of Special Scientific Interest (SSSI)*
- *Deeside & Buckley Newt Sites Special Area of Conservation and Special Site of Scientific Interest* (SAC/SSSI)
- *Buckley Claypits and Commons Site of Special Scientific Interest (SSSI)*

Assessments
We note that features of the Deeside & Buckley Newt Sites SAC include Annex 1 woodland. NRW are of the view that ancient semi-natural woodland could be affected by the proposal. This woodland could be Habitats Directive 1 Annex 1 woodland though we note that there has not been a comprehensive assessment of Annex 1 woodland in this area of Flintshire. Studies undertaken to inform the earlier road improvement schemes identified Annex 1 woodland along Alltami Brook. Therefore, NRW consider that the presence of Annex 1 Woodland should be included as a material component part of habitat assessments.

In addition to SPA features, NRW recommend bird assessments should include all Birds Directive Annex 1 species.

European Protected Species
We consider that several European protected species, such as bats, otter or great crested newt, have the potential to be adversely affected by each of the proposed schemes during construction and operational phases of the scheme. These species are subject to protection under the provisions of Section 9 of the Wildlife and Countryside Act 1981 (as amended) and Regulation 41 of The Conservation of Habitats and Species Regulations 2010 (as amended)

Based on the report submitted we have the following comments:

NRW are of the view that the proposals are likely to cause significant implications on European sites. Impacts associated with the A494/A55 interchange upgrade and new Dee bridge will occur whichever route is progressed as there will be a requirement to upgrade these features irrespective of whichever option is progressed.

NRW are of the view that the red route is likely to cause much more significant ecological damage; this view considers required upgrades to the Dee Bridge and A55/A494 junction.

- Great Crested Newts

NRW understand that Great Crested Newt (GCN) surveys have been carried out in 2017. Results suggest the presence of low and medium sized populations. Given the dry winter and spring, we consider that not all individuals within a given population will have returned this year. Consequently, caution needs to be applied when assessing population sizes this year.

Landscape
The proposed A55/ A494/A548 Deeside corridor improvement options are at their closest some 6km to the east of the Clwydian Range and Dee Valley AONB and some 3km to the south east of Holywell Common & Halkyn Mountain Landscape of Outstanding Historic Interest. We consider the blue route located within an area of established development including urban and road infrastructure is unlikely to have significant effect upon views from landscapes within our remit.

The red route option to the northeast of Northop could however introduce noticeable change within views from the edge of the Holywell Common & Halkyn Mountain Landscape of Outstanding Historic Interest, as a result of introducing new linear feature within an area currently perceived to comprise farmland with relatively minor rural development. Road traffic movement and lighting (depending on extent and design) could also have a bearing upon visibility.

Assessment of Landscape and Townscape
We accept the use of DMRB Vol 11 which is the definitive methodology for the assessment of road schemes and use of GLVIA3 for the assessment of Landscape and Townscape effects.

GLVIA3 section 2.10 sets out how Green Infrastructure (GI) can be considered within LVIA. Confirmation of how the Landscape and Townscape assessment and scheme design will specifically address GI will be required.

We note that Welsh Transport Planning and Appraisal Guidance WelTAG June 2008 recommends at 7.7.21 “the qualitative impacts will be summarised using a seven-point scale for determining their significance”. This differs to the 3 point scale proposed within Environmental Screening and Scoping report.

We have the following concerns with the use of a 3 point assessment of effects scale:

- Of the 3 point scale - Substantial, Moderate and Slight, only Substantial is presently described as being significant
- Significant effects under the EIA regulations are a material consideration
- Significant effects are given weight and factored into scheme design iteration and mitigation proposals
- Other effects are given less or no weight

We therefore consider the very high threshold at which ‘significant’ effects would be identified has the potential to allow considerable impacts upon the local environment and visual amenity of local communities to take place.

Clarification of the thresholds at which effects would be significant in EIA terms will be required. We recommend the use of either a 5 or 7 point assessment scale to allow a finer grain in the assessment of effects; or a reworded 3 point scale and statement in the assessment report noting that Moderate assessed effects could also be significant. It is our view that where a number or cluster of Moderate effects are identified, it suggests a proposed development is at odds with its landscape/visual context.

Environment Management Considerations

Rivers, Watercourses and Sensitive Receptors and Water Framework Directive
All river and stream crossings should be designed to minimise disruption to the watercourse and maintain a natural bed to the watercourse. Where culverts are required to accommodate other wildlife e.g. otters, bats etc. these should not compromise other requirements.

Under the Water Framework Directive all waterbodies must meet good states or good ecological potential by 2027. The planned red route crosses through/passes near three waterbodies (Leadbrook, Kelsterton Brook and the River Dee). The proposed blue route also goes through/passes near three waterbodies (Leadbrook, Sandycroft drain and the River Dee). Initial monitoring by NRW has already recorded failures for invertebrates in Leadbrook. You must ensure that your scheme does not cause any deterioration to any of the waterbodies it passes through. Pollution prevention measures must be in place before construction begins and the scheme must be designed so that surface water runoff from the scheme does not pose any long-term issue.

Navigation
In respect of the blue option concerning the A494 bridge crossing at Queensferry, the project should at an early stage demonstrate to NRW as the Conservancy Authority for the Dee Estuary that the existing passage conditions for vessels navigating the Estuary will be maintained, both during:

(I) All construction phases;
(II) Post construction; and
(III) Maintenance.

If the northern (Red route) is selected, we suggest any remediation works to the existing bridge will need to be identified.

Drainage and Pollution Prevention
A full pollution prevention and mitigation plan must be produced, agreed with NRW and implemented prior to commencement of the main construction works for Corridor Improvements scheme.

Responsibility for preventing pollution during the construction works rests with those in control of the site. Please see Pollution Prevention Guidance 6 which covers best practices for preventing pollution at Construction& Demolition sites, link given below.

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/290139/pmho0412bwfe-e-e.pdf

The drainage system for the Deeside Corridor Improvements should utilise the management and treatment of run-off as close to source as possible. To achieve this soft Sustainable Drainage Systems (SuDS) should be utilised wherever possible. This could

be using filter strips, swales, over the edge drainage, retention ponds and detention basins these will also assist with balancing of run-off from the drainage.

The drainage system must include pollution containment as part of the primary design. Envirodrain or similar continuous kerb drainage systems provide a practical solution in some situations. Whilst these function well as drainage conduits, if they are utilised then the system must have suitable pollution control measures incorporated into the design as sealing the system in the event of an incident is not feasible.

When designing the drainage system for the road it must be designed to maintain catchment separation i.e. not take run-off from one catchment and drain it to another.

Material management
The scheme design should endeavour to achieve a balanced use of materials over the whole scheme to minimise any waste generation. If excess material is generated then management could be thorough identifying other developments where these may be utilised, this being done prior commencement of works on site. This will allow the consideration of other materials management options such as the CL:AIRE or aggregates protocols.

Storage of materials during the construction period must be planned and properly managed to ensure that any silt laden runoff does not enter any watercourse.

A comprehensive materials management plan should be produced for the scheme including waste management.

Water and environment monitoring plan
A water and environment monitoring plan should be produced and agreed with NRW with appropriate implementation commencing prior to commencement of works on site.

Incident reporting
Any incident that may result in pollution of a watercourse must be reported immediately to Natural Resources Wales on the incident hotline 0800 807060 providing, date, time, location, description of incident, impact or potential impact, any mitigation already implemented along with a contact name and phone number

Please do not hesitate to contact us if you wish to discuss our comments further or if we can be of any further assistance to you.

Yn gywir / yours faithfully.

Charlotte Hawksworth
Development Planning Adviser/ Cynghorydd Cynllunio Datblygu
DPAS/GCCD