FLINTSHIRE COUNTY COUNCIL

REPORT TO:	**PLANNING AND DEVELOPMENT CONTROL COMMITTEE**
DATE:	**WEDNESDAY 19TH JUNE 2013**
REPORT BY:	**HEAD OF PLANNING**
SUBJECT:	**ENGINEERING WORKS TO PROVIDE FLOOD DEFENCE STRENGTHENING ALONG 1.5KM OF THE RIVER DEE EMBANKMENT, TO INCLUDE SHEET PILING TO A MAXIMUM DEPTH BELOW GROUND OF 12M AND A MINIMUM HEIGHT OF 7.2M AOD AND A PROPOSED TEMPORARY ACCESS ROUTE AND SITE COMPOUND AT RAF SEALAND, SOUTH CAMP, WELSH ROAD, SEALAND**
APPLICATION NUMBER:	**050730**
APPLICANT:	**WELSH GOVERNMENT**
SITE:	**RAF SEALAND, SOUTH CAMP, WELSH ROAD, SEALAND**
APPLICATION VALID DATE:	**19/04/13**
LOCAL MEMBERS:	**COUNCILLOR C JONES**
TOWN/COMMUNITY COUNCIL:	**SEALAND**
REASON FOR COMMITTEE:	**MAJOR DEVELOPMENT**
SITE VISIT:	**NO**

1.00 SUMMARY

1.01 This is an application for the strengthening of the existing flood defence along the north bank of the Dee Estuary between Hawarden Bridge and the A494 Bridge to the south of Garden City. This work is required to protect the existing settlement of Garden City from any breaching of the existing River Dee embankment and also to facilitate the wider development of the Northern Gateway sites and the Deeside Enterprise Zone.

1.02 The main impacts of the works are the noise and vibrations generated by the piling method on the residential properties on Claremont Avenue and migratory fish using the River Dee. These impacts would be of a temporary nature and can be mitigated by the choice of piling method. The public right of way along the length of the embankment would also need to be closed for the duration of the works. Conditions have therefore been imposed to control the impacts of the works.

2.00 RECOMMENDATION: TO GRANT PLANNING PERMISSION, SUBJECT TO THE FOLLOWING:-

2.01
1. Time commence
2. In accordance with plans
3. Details of the construction, visibility and proposed methods of traffic management for the proposed point of access to the west of the Queensferry Bridge.
4. Submission of the full details of the works including piling to ensure protection of the railway infrastructure from vibration and excavations and method statements
5. Reinstatement of cycle path and embankment
6. Pressing is the preferred piling method. If vibration piling is used, a full method statement is required to justify it would not cause significant environmental effects particularly with regard to migratory fish and adverse noise impacts on residential properties.
7. Embankment reinstated to a maximum height of 7.2mAOD. Details of any scour protection works to be agreed.
8. Submission of noise and vibration control plan and management system
9. Construction management plan including hours of piling activities
10. Prior to any closure of the cycle path/footpath an alternative route should be agreed
11. Full reinstatement of path and any other areas disturbed as a result of construction.
12. Confirmation of the access route for construction traffic.
13. Agreement on the exact timescale of the works and hours of piling.

3.00 CONSULTATIONS

3.01 Local Member
Councillor C Jones
Agrees to the determination of the application under delegated powers.

3.02 Sealand Community Council
Support the development.

3.03 Head of Assets and Transportation

No objection in principle to the proposal if access is derived from the private access road serving Tata Steel. However it has been noted there is the potential for a secondary access to be utilised to the east of the Queensferry Bridge. This access would be derived directly from the County Road network and therefore a condition is required for details of the construction, visibility and proposed methods of traffic management for the proposed point of access to the west of the Queensferry Bridge.

3.04 Public Footpath No.1 and Public Footpath No.3 in the community of Sealand are affected by this application. If planning permission is granted, the applicant requires a Temporary Closure Order. There is no provision for any alternative cycle/footpath routes in the submitted details. The cycle path is heavily used for access to employment and also for leisure. The applicant should explore the feasibility of utilising the old Corus Road as an alternative route which runs parallel to the affected cycle path in the first instance. Other possible alternatives are existing public footpaths on the opposite side of the River Dee but these would need upgrading for cycle usage.

3.05 Head of Public Protection

The applicant's noise report indicates that there is likely to be some noise disturbance to local residents from the proposed works at the Garden City end of the project. This assessment is agreed with, however, it is considered that due to the length of the project as a whole (August to November), the length of time each section will take will be relatively short i.e. a few weeks each. The noise impacts would therefore be of a relatively short duration compared to the overall benefits of the scheme. Mitigation measures should be incorporated into an appropriate noise and vibration control plan and management system. Percussive piling should not be used. It is recommended that if hydraulic piling is used it is in combination with pressed piling in the more sensitive areas closest to residential properties.

3.06 Natural Resources Wales

The application site has been subject to ecological survey and assessment in respect of statutory protected species. We consider this assessment to be satisfactory for the purposes of informing the public decision making process. In our view the proposal is not likely to be detrimental to the maintenance of the favourable conservation status of any populations of European or British protected species that may be present at the application site.

3.07 NRW would object to the issue of consent for this proposal before completion of satisfactory assessment under the Conservation and Species Regulations 2010, which is due to be undertaken by the Local Planning Authority.

3.08 It is considered the potential issues such as the impact on migrating fish or the passage of redshank can be addressed by the imposition of conditions in respect of timing of operations and implementation of approved method statements.

3.09 Pressing is the preferred piling method unless it can be demonstrated that vibrodriving will not have significant effects.

3.10 A minimum crest-height of 7.2mAOD for the flood defence is in line with the historic 'design height of the northern embankment. We are therefore satisfied that the work should not increase flood-risk elsewhere as it would not raise the defences above the normal 'maintenance' level. Where the defence is already above 7.2AOD we are satisfied that the work can maintain that level. Suggest a condition to ensure reinstatement to a maximum height of 7.2AOD to ensure that flood risk to third parties is not increased.

3.11 The works also require Flood Defence Consent from Natural Resources Wales.

3.12 SP Energy Networks
No response received at time of writing.

3.13 Network Rail
No objection in principle, however it is proposed to undertake driven piling adjacent to one of Network Rail's structures which poses a potential risk and monitoring of the structure is required throughout the works. It is therefore requested a condition is imposed requiring submission of the full details of the works including piling to ensure protection of the railway infrastructure from vibration and excavations.

4.00 PUBLICITY

4.01 Press Notice, Site Notice, Neighbour Notification
No responses received.

The application affects a Public Right of Way.

5.00 SITE HISTORY

5.01 **049320**
Outline application for the redevelopment of a strategic brownfield site for an employment led mixed use development with new accesses and associated infrastructure including flood defences and landscaping at RAF Sealand South Camp, Welsh Road, Sealand.

5.02 **050125**

Employment-led mixed-use development, incorporating Logistics and Technology Park (B1,B2,B8) with residential(C3),local retail centre (A1), hotel (C1),training and skills centre (C2, D1),new parkland; conversion of buildings, demolition of barns; and associated infrastructure comprising construction of accesses, roads, footpaths/ cycle paths, earthworks and flood mitigation/drainage works at former Corus Garden City Site, Welsh Road, Garden City.

6.00 PLANNING POLICIES

6.01 Flintshire Unitary Development Plan
STR1 – New Development
STR2 – Transport and Communications
STR3 -3 – Employment
STR4 – Housing
STR7- Natural Environment
STR8 – Built Environment
GEN1 – General Requirements for Development
D3 – Landscaping
WB1 – Species Protection
WB2 – Sites of International Importance
WB3 – Statutory Sites of National Importance
HE2 – Development Affecting Listed Buildings and their Settings
AC2 – Pedestrian Provision and Public Rights of Way
AC13 – Access and Traffic Impacts
HSG2A – Strategic Mixed Use Development Land North West of Garden City
EWP17 – Flood Risk

6.02 The proposal is in accordance with the above development plan policies.

7.00 PLANNING APPRAISAL

7.01 Introduction
This is an application for the strengthening of the existing flood defence along the north bank of the Dee Estuary between Hawarden Bridge and the A494 Bridge to the south of Garden City. This work is required to protect the existing settlement of Garden City from any breaching of the existing River Dee embankment and also to facilitate the wider development of the Northern Gateway sites and the Deeside Enterprise Zone.

7.02 Site Description
The proposed works are to be undertaken on the existing grassed earth embankment which is located on the northern bank of the River Dee, between the A494 road bridge and the Hawarden Railway Bridge. The existing embankment is formed of dredged material and ground water is known to be present adding to its vulnerability. There is a public right of way along the length of the embankment which will

be affected by the construction process. A small section of this footpath between the two bridges forms part of the Wales Costal Path. To the north of the application site is predominately agricultural land, which is allocated under Policy HSG2A of the Adopted Flintshire Unitary Development Plan as a Strategic Mixed Use. At the eastern extent of the area of works there are a number of residential properties adjacent to the development site and at the western end are a number of Grade II Listed Structures; namely the vacant former John Summers clock building; Hawarden Railway Bridge; and Bascule Bridge. There are electricity pylons adjacent to the embankment at the southern end of the proposed works.

7.03 The River Dee and Bala Lake Special Area of Conservation (SAC) and Site of Special Scientific Interest (SSSI) are located adjacent to the proposed development. The Dee Estuary SAC, Special Protection Area (SPA) and RAMSAR site and SSSI are located on the southern river bank.

7.04 The need for the development has been informed by the Flood Risk Assessment studies undertaken as part of the outline planning application to deliver Policy HSG2A, known as the Northern Gateway.

7.05 Proposal

The works include strengthening and reinforcement of the existing flood defences along the bank of the River Dee by sheet piling along 1.2km of the River Dee embankment to a maximum below ground of 12 metres and a minimum height of 7.2m AOD. This is to ensure the structural integrity of the defence over a 100 year period. The piles will typically be located in the land side of the embankment crest, however where services constraints dictate the piles will be on the river side of the embankment. The existing grassed surface and tarmac will be reinstated following the works with complete resurfacing of the path. In addition to the sheet piling works maintenance to two existing outfalls at two locations along the embankment will also be carried out. These outfalls are at points where the Shotwick Brook and Garden City drain discharge into the River Dee.

7.06 The piling methods to be used are subject to confirmation once a contractor has been appointed for the works, however there are several options of sheet piling which are;

- Impact Driving (or percussive piling);
- Vibrodriving (or hydraulic vibratory piling); and
- Pressing (either Japanese ‘Silent’ Pressing Machine, Panel type ‘silent’ pressing machine or ‘Silent’ pressing and high frequency vibrating combined.)

7.07 A steel walling beam will occasionally be required where the bottom of the piles step up at cable and pipe crossings. The walling beam will be buried beneath the cycle path and will not be visible following reinstatement of the path.

7.08 The design of the works have been future proofed to allow for subsequent raising of the sheet piles should further strengthening of the defence be required in the future.

7.09 The preferred site access utilises an existing access off the B5441 Welsh Road, currently utilised for the Tata Steel site, then using an existing private road to the former John Summers building. It is proposed to create a construction compound in the former car park of this building. As this is subject to third party agreement an alternative access arrangement has also been put forward using an access from the public highway with a compound on the embankment itself.

7.10 During the works it will be necessary to restrict the use of the public right of way along the embankment through a temporary closure order which will be made separately to the Council's relevant department. Subject to obtaining the necessary consents the works are programmed to commence during August 2013 with completion by November 2013. Works will only take place during daylight hours and will not be lit during construction.

7.11 The application is accompanied by an Environmental Report including an Assessment of the potential noise and vibration impacts of the proposed works.

7.12 <u>Need for the development</u>
The works will strengthen the existing flood defence to protect the existing settlement of Garden City and will also facilitate the development of the Northern Gateway which is a major allocation of 98 hectares for mixed use development under Policy HSG2a of the Adopted Flintshire Unitary Development Plan. The Northern Gateway is also part of the wider Deeside Enterprise Zone which has been designated by Welsh Government to promote advanced manufacturing and offers a number of incentives to attract new business to the wider area.

7.13 The Northern Gateway site lies entirely within Flood Zone C1 as defined by Technical Advisory Note 15: Development and Flood Risk. The Flood Consequences Assessments (FCA's) for the outline planning applications for the Northern Gateway both identify the need for flood protection measures to mitigate the tidal and fluvial flood risk to facilitate development of the site.

7.14 There is a Grampian style condition on application 049320 for development of half of the site allocated under policy HSG2a for the Flintshire Unitary Development Plan, preventing commencement of development until these works have been implemented. Consultation with Natural Resources Wales has indicated that a similar condition would also be imposed on application 050125 which is under consideration by this Authority.

7.15 Natural Resources Wales consider that as the minimum crest-height of 7.2mAOD for the flood defence is in line with the historic 'design height of the northern embankment, they are therefore satisfied that the work should not increase flood-risk elsewhere as it would not raise the defences above the normal 'maintenance' level. Where the defence is already above 7.2AOD they are satisfied that the work can maintain that level and suggest a condition to ensure any other reinstatement is to a maximum height of 7.2AOD to ensure that flood risk to third parties is not increased.

7.16 Issues

The application has been screened for an Environmental Impact Assessment (EIA) prior to its submission and the Authority considered in consultation with the statutory bodies that an EIA was not required. The extent of the impacts for the works would be limited to the construction phase and are exclusively to the existing embankment. The application however is accompanied by an Environmental Report which deals with the relevant issues in relation to the sites context adjacent to the River Dee. The main environmental issues raised by the works are in relation to ecology, noise and ground conditions.

7.17 Impacts on the Natural Environment

The River Dee and Bala Lake Special Area of Conservation (SAC) and Site of Special Scientific Interest (SSSI) are located adjacent to the proposed development. The Dee Estuary SAC, Special Protection Area (SPA) and RAMSAR site and SSSI are located on the southern river bank opposite the application site at the western end of the site.

7.18 The proposed works are adjacent to and not within the ecological designations. The impacts of the works are therefore limited to the impact on the species that utilise them rather than direct impacts on habitat. The area of works itself is a steep retaining embankment, with a cycle track/footpath on top. At the western end of the works adjacent to the John Summers building complex, the path is bordered by an overgrown hedge and scattered scrub and trees. Either side of the cycle track/footpath is species poor – semi improved grassland, which is closely mown for the majority of its length. The most valuable habitat within the proposed works boundary is considered to be the fringe of saltmarsh at the toe of the existing flood embankment, however the majority of the proposed works will be restricted to the terrestrial habitats at the top of the embankment and therefore will not directly affect the saltmarsh. The footprint of development has been minimised to ensure that the majority of the works take place on the landward side of the flood embankment or on the tarmac path itself, ensuring that the majority of the taller grassland and the salt marsh will not be affected by the works. Soil excavation, storage and reinstatement will be undertaken as works progress to minimise soil storage times. Reinstatement of the landward side of the flood embankment will be with the existing topsoil which will then be re-

seeded with an appropriate grass mixture.

7.19 A number of species surveys were undertaken in relation to the relationship of the above designations and the development of the Northern Gateway through the two outline planning applications. As these surveys are recent, this data has therefore been used to inform the assessment of this application.

7.20 Following this appraisal it was considered that the estuarine habitats in the vicinity of the proposed works do not support significant numbers of any bird species listed as features of the Dee Estuary designations. In terms of other species, it is concluded also that the site of the proposed works is of limited local importance to reptiles and in general bat activity levels are low across the Northern Gateway Site. There will be no significant net loss of foraging habitat once the grass is reinstated.

7.21 There is an active badger sett within the wider Northern Gateway development area. The distance of the proposed works from the active badger sett means that no direct disturbance to badgers is anticipated as a result of the works. The grassland associated with the proposed flood embankment works is considered to provide some foraging habitat for badgers. However, the temporary loss of grassland habitat as a result of the proposed works would not affect badgers given the abundant availability of suitable foraging habitat within the vicinity of the proposed works.

7.22 Evidence of both otters and water voles were identified in the wider Northern Gateway development area and the adjacent River Dee is considered to provide suitable foraging and commuting habitat for otters. The works will not prevent access for otters either alongside the River Dee, or to Shotwick Brook. Preconstruction surveys of the areas of works will be undertaken to confirm the absence of both otters and water voles.

7.23 The River Dee is important for a number of fish species, including migratory species such as Atlantic salmon, sea trout and sea lamprey. The presence of these species has partly resulted in its designation as a SAC and an SSSI. No specific fish surveys have been undertaken, however consultation has been carried out with Natural Resources Wales, who have identified the importance of the River Dee during the migratory fish period. The key periods are;
- March to mid-June when smolt (juvenile Atlantic salmon and sea trout) migrate out to sea, generally during the hours of darkness;
- June to October when adult Atlantic salmon migrate back into freshwater;
- May to August which are the key months for adult sea trout migration.

7.24 European eels also take seasonal movements through the River Dee,

generally at night. Fish are sensitive to the noise and vibrations caused during piling operations. These works are currently planned to take place between August and November, therefore a detailed assessment of the potential impacts on the migratory fish population of the River Dee has been undertaken. The piling works are planned to take place during daylight hours, therefore avoiding the smolt migration and most of the adult sea trout migratory period. However, there is the potential for significant impacts on Atlantic salmon migration from the piling operations. It is considered that any mitigation proposed for the impacts on Atlantic Salmon will also mitigate for effects on the smaller population of sea trout.

7.25 While the choice of piling method is to be confirmed on appointment of a contractor am assessment of the impacts of the three piling methods has been undertaken. The proposed options for sheet piling are;

- Impact Driving (or percussive piling);
- Vibrodriving (or hydraulic vibratory piling); and
- Pressing (either Japanese 'Silent' Pressing Machine, Panel type 'silent' pressing machine or 'Silent' pressing and high frequency vibrating combined.)

7.26 Of the 3 options percussive piling with impact hammers causes the most disturbance through noise and vibration and is generally considered unsuitable for sensitive sites. This method is therefore not suitable for this site. Vibrodrivers are less disruptive and present a significantly lower risk of disturbance to fish movements. Pressing generates negligible noise and vibration at the pile as the sheet piles are installed thorough a process of vibration less hydraulic jacking.

7.27 The river channel is approximately 200 metres in width. Modelling of the piling methods for vibrodriving shows no significant adverse effect beyond 100m from the works. It is therefore considered that there will be no significant barrier to salmon migration. Pressing would avoid the need to undertake any further mitigation measures relating to noise and vibration, however it is acknowledged that this may not be financially viable and is restricted to certain substrates.

7.28 Natural Resources Wales consider that pressing is the preferred piling method unless it can be demonstrated that vibrodriving will not have significant effects. They have expressed a concern that at a neap tide the river channel is significantly reduced to as little as 50 m and therefore this method may not be viable. A condition is therefore imposed to state that the preferred piling method is pressing, if feasible due to ground conditions and unless it can be demonstrated that vibrodiving would not have any impact on the migratory fish.

7.29 The Authority is also obliged to undertake an assessment of the effects of the application under the Conservation and Species Regulations 2010. It is considered that the development would not

give rise to significant adverse effects on the environment.

7.30 Noise and vibration impacts

The potential construction noise and vibration impacts on both local residents and ecology have been considered against the most relevant standards and guidelines.

7.31 The receptors that could be most affected by construction noise and vibration are the 8 residential properties on Claremont Avenue which back onto the flood defence at the eastern end of the works, some existing buildings adjacent to Hawarden Bridge and the public amenity and ecologically sensitive areas along the River Dee waterline. Predictions of vibration from piling and compaction works have been made using the methodologies detailed within national guidance and from experience at similar projects and ran through a computer model.

7.32 The range of noise levels during more typical operations will only be marginally above underlying ambient noise levels. The most significant noise generating activity is the piling activity. There are several potential piling methods, as previously referred to. Noise level predictions have been provided for all 3 methods. Noise from percussive and hydraulic vibratory piling activities will be likely to exceed ambient noise levels in the vicinity of the works throughout the whole of the construction programme. The effect from percussive piling would be substantially adverse and would exceed the 'Threshold of Significant Noise Effect; as defined within BS5228 (Parts 1 &2 Code of Practice for noise and vibration control on construction and open site) and will result in undesirable conditions that will be likely to exceed statutory objectives at all receptors. Percussive piling is therefore not pursued further.

7.33 The effects from hydraulic vibratory piling would be undesirable but tolerable in the context of best practice and statutory objectives. In order to mitigate noise levels it is suggested that noise management programme is undertaken during each phase of the works and a noise management plan is submitted if vibration piling is utilised.

7.34 The assessment concluded that the noise levels at the nearest residential properties in Claremont Avenue as well as at the Hawarden Bridge Steelworks Building would be discernible during non-piling construction activities. However the impacts associated with construction noise would be temporary in nature and limited to the periods when works were being undertaken in close proximity to receptors. Mitigation measures should be incorporated into an appropriate noise and vibration control plan and management system. It is recommended by the Head of Public Protection that if hydraulic piling is used, this is used in combination with pressed piling in the more sensitive areas closest to residential properties. This can be dealt with by condition.

7.35 Impact on the Historic Environment

The works are adjacent to the Grade II Listed John Summers Building and the former car park of the building is to be used as a construction compound. The works are approximately 20 metres from the Listed Building however as the works are restricted to within the existing embankment and there will be physical evidence on completion, it is not considered that there would be any impact on the Listed Building. The car park for the construction compound has an existing hard standing so no works will be required other than temporary safety fencing. The works also pass near to two Grade II Listed Bridges, however again there would be no impact on these as a result of the works.

7.36 Impact on the Public Right of Way

The application affects Public Footpath No.1 and Public Footpath No.3 in the community of Sealand. In the supporting documents, the applicant has referred to the need for a Temporary Closure Order. This public footpath is heavily used by both cyclists and pedestrians. The works are proposed to be undertaken during August and November which is a time of peak usage of the path for leisure purposes. At present there is no provision for any alternative cycle/footpath routes in the submitted details. The applicant should explore the feasibility of utilising the old Corus Road as an alternative route which runs parallel to the affected cycle path in the first instance. Other possible alternatives are existing public footpaths on the opposite side of the River Dee but these would need upgrading for cycle usage. It is therefore considered that a condition should be imposed to require the agreement of an alternative route prior to the closure of the public right of way.

8.00 CONCLUSION

8.01 The proposed engineering works to strengthen the existing flood defence are required to protect the existing settlement of Garden City and to facilitate the development of the Northern Gateway allocated under Policy HSG2A of the Adopted Flintshire Unitary Development Plan which is also designated by the Welsh Government as part of the Deeside Enterprise Zone. The main impacts of the works are the noise and vibrations generated by the piling method on the residential properties on Claremont Avenue and migratory fish using the River Dee. These impacts would be of a temporary nature and can be mitigated by the choice of piling method. The public right of way along the length of the embankment would also need to be closed for the duration of the works, however a diversion is being sought. Conditions have therefore been imposed to control the impacts of the works.

In considering this planning application the Council has acted in accordance with the Human Rights Act 1998 including Article 8 of the

Convention and in a manner which is necessary in a democratic society in furtherance of the legitimate aims of the Act and the Convention.

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