

Appendix 1 – Marine License Drawings

Appendix 2

Question 5 (h)- Method Statement

AMIDS South Scheme

The proposed crossing of the White Cart Water is part of the Advanced Manufacturing Innovation District Scotland (AMIDS)- South redevelopment project. The scheme will better connect Paisley to the AMIDS site and Glasgow Airport, providing a new North-South road from Paisley Gilmour Street Train Station to Inchinnan Road, and an East-West road that will form a junction with Renfrew Road. The AMIDS South scheme is currently at Planning stage, with consent anticipated in early 2023, and construction works currently programmed to commence in Autumn 2023.

The overall scheme is above the Mean High Water Spring (MHWS) Level for White Cart Water and it has been confirmed, through consultation with Marine Scotland, that no statement is required on outfalls. SEPA have also confirmed that point source discharge licence applications are not required under The Water Environment (Controlled Activities) (Scotland) Regulations 2011. Refer to the attached email communication in Appendix 6.

New White Cart Water Crossing

The proposed crossing is a steel Bowstring arch bridge with a single span of 93m, arch rise of 18m, and overall deck width of 20m. The roadway deck is supported by a series of steel hangers connecting into the arches. The bridge is supported on two reinforced concrete abutments on reinforced concrete piles. All permanent elements of the bridge and substructure are setback from the riverbank edge and located above and back from the White Cart Water boundary, as defined by the Mean High Water Spring levels.

Temporary piers to enable the installation of the bridge will be located within the riverbed and within the MHWS boundary. See the below construction sequence for further details on the temporary piers.

To accommodate the required vertical clearance height for a 1:200 year flood event including climate change allowance, the minimum soffit level of the bridge is set at 6.1m AOD. This level incorporates 0.5m freeboard above the flood event. Approach embankments for the new road to the east and west of the structure are provided as the current existing ground levels are approximately 4.5m AOD on both banks.

The bridge will span the White Cart Water approximately 1 kilometre north / downstream of Paisley town centre and approximately 4.5 kilometres upstream of the mouth of the River Cart at the confluence with the River Clyde. The river is tidal at the proposed crossing location, with Mean High Water Spring tide level of 2.3m AOD and the lowest riverbed level of ~ -2.0 m AOD.

The final construction sequence will be dependent on the chosen Contractor's fabrication. Therefore, a standard methodology has been given below. If it is necessary for the Contractor to modify the standard methodology and as such this affects any Conditions outlined in the Marine Licence, it will be a contractual requirement that the Contractor seeks agreement from Marine Scotland prior to construction commencing.

To enable the construction of the permanent abutments, which are above and back from the MHWS bank level, temporary excavations to allow the construction of the pilecap may require works on the existing river banks adjacent to the proposed abutments. The existing riverbanks are shown in the images within Appendix 5, the river banks are built up from existing construction and demolition waste along with river sediment and existing ground. The temporary excavations will be to a typical depth of between 2.5m and 2.8m AOD. Temporary construction works below the MHWS may be required as deemed necessary by the contractor. All riverbanks affected by the temporary works for the abutment will be reinstated with due consideration for scour following construction.

Bridge Construction Sequence

The bridge construction is based upon launching the superstructure across the White Cart Water from the east bank, having constructed the steelwork offline in the adjacent site compound behind the east abutment. There will be two temporary trestle piers installed within the river to support the structure during launching.

The construction sequence will be categorised into two phases, the substructure and the superstructure.

Permanent Substructure Construction Method:

- Excavate and fill to provide formation for piling, this may require temporary riverbank stabilisation.
- Bore piles, install reinforcement, and cast concrete
- Install pile cap including reinforcement installation and cast concrete
- Install reinforcement and cast concrete for abutment walls and wing walls
- Install reinforcement and cast concrete for bearing plinths
- Install waterproofing, construct embankment including back fill to abutment and wing walls.

Superstructure Construction Method:

- The bridge steelwork will be split into transportable sections, these sections will be fabricated off site in fabrication yards and transported to site to be erected.
- Erect and complete fabrication of steel sections to form the steelwork bridge offline in the site compound on the east bank behind the east abutment.
- Temporary trestle piers will be constructed in the White Cart Water – see below.
- GRP permanent formwork will be installed on the cross girders.

- Temporary works installed between the arch and tie beam to limit the construction stresses within the tie-beam during the launch. Install temporary launch nose steelwork.
- The steelwork will be launched into position with the means of SPMT's and supported on the temporary trestles using roller supports.
- Install permanent bearings and lower bridge onto bearings and fix to steelwork.
- Reinforced concrete deck constructed, appropriate protection measures will be used to ensure all concreting activities are isolated from the watercourse.
- Highway and footway surfacing laid with kerbs, VRS and Parapets installed.
- Remove temporary piers.
- Install expansion joints, drainage, and street furniture.

Installation and Removal of Temporary Trestles Pier in the White Cart Water

The temporary trestle piers will comprise of steel tubular piles installed into the riverbed down to bedrock. It is expected that the pile driving operation will be carried out by a land based piling methods. It is not proposed to use river craft or barges due to access and tidal restrictions and it is not anticipated that in-channel platforms or a river crossing/causeway will be required. The trestle cross beams will be lifted in from land based crane connected to the piles to form the temporary piers. It is not envisaged that riverbed or sediment will be removed during the installation of the piles.

The temporary piers will be removed on completion of the superstructure installation. The cross beams and secondary support elements will be swung and lifted out from under the bridge using local temporary works from the bridge deck and land based crane. The steel tubular piles will be cut down at 1m below riverbed level, with the top section lifted out. The pile section below riverbed level will remain as permanent works. Local displacement of riverbed material and sediment will be undertaken to expose the steel pile 1m below the riverbed to enable cutting of the pile. This material will be removed and will not be deposited in the river.

It should be noted that flood modelling has been carried out for the scheme, both for the temporary situation with supports in the river and in the permanent situation with no supports, and the results indicate that both tidal and fluvial flood events are not significantly impacted by the proposed development.

Appendix 3

Question 5 (i) Potential impacts the works may have (including details of areas of concern e.g. designated conservation and shellfish harvesting areas) and proposed mitigation in response to potential impacts

Surface Water

Construction activities will take place over White Cart Water which is part of the transitional waterbody Clyde Estuary- Inner (ID 200510). It is currently anticipated that the bridge will be constructed onsite on the right bank in the My-Easy Park, upstream of the bridge location. During construction of the bridge, temporary piers will be placed in the watercourse. The temporary structures will be installed through a piling technique, driving the steel piles close to the south and north banks. This construction activity has the potential to temporarily impact surface water quality due to a potential increase in siltation, prior to mitigation.

Additionally, the presence of construction compounds and haul roads within the construction corridor may increase the risk of silt laden runoff entering White Cart Water. Impacts due to runoff from stored excavated materials or pollution events due to spillage of fuel, oil or other substances could affect the watercourse or water entering storm drains that eventually reach the White Cart Water; therefore, affecting water quality and biodiversity.

With mitigation measures in place however, there are no significant effects on surface water anticipated. The mitigation measures to be implemented on site are detailed at the end of this section. In addition to the application of mitigation measures, surface water quality will be protected by ensuring that the works always remain compliant with the Construction Run-Off Permit.

Migratory Fish Passage

The temporary works outlined in the Construction Method Statement, show in-channel works within the White Cart Water. These works could impact on the passage of migratory fish. However, it is anticipated that the pile driving operations will be carried out by a land based piling methods. Therefore, it will not be necessary to install a causeway, platforms, or vehicle access into the river. As a result, there should be limited impact on the natural hydraulics of the river and therefore migratory fish passage should be maintained on either side of the piers.

Designated sites

There are five designated sites which lie within the vicinity of the proposed scheme:

- Black Cart Special Protection Area (SPA) - located approximately 1.8km northwest of the proposed development;
- Black Cart Site of Special Scientific Interest (SSSI) - located approximately 1.8km northwest of the proposed development;
- Inner Clyde SPA - located 3.8km northeast of the proposed development;
- Inner Clyde SSSI- located approximately 3.8km northeast of the proposed development; and
- Inner Clyde Ramsar - located 3.8km northeast of the proposed development.

Black Cart SPA/SSSI

- The SPA and SSSI share a common site boundary, which lies approximately 1.8km north-west of the proposed scheme at the closest point. The sites are designated due to the presence of whooper swan *Cygnus cygnus*, non-breeding.
- The proposed development does not require any land take from the SPA/SSSI and it is not directly connected to or adjacent to the designated sites. The development is both laterally and vertically separated from the SPA and SSSI. There will be no reduction of habitat within the SPA/SSSI as a result of the proposed development either in isolation or in combination with other developments. Given the separation from the development, no reduction in species density is anticipated.
- Piling will be required for the construction of the new bridge crossing over the White Cart Water. Abutments/piling for the structure are likely to be set back approximately 10m to 15m from the riverbank. Excavation/temporary works close to the riverbank are anticipated during construction and temporary works to facilitate construction on the riverbank. There is also potential for temporary piers to be required within the White Cart Water. Therefore, there is risk of surface water pollution occurring during this temporary works stage. However, the confluence of the Black Cart Water with the White Cart Water to form the River Cart occurs approximately 3km downstream of the proposed scheme, before it flows into the River Clyde and eventually the Inner Clyde estuary. The Black cart SPA/SSSI is located approximately 1km upstream of the River Cart. Therefore, the SPA/SSSI is sufficiently separated from the site, such that no adverse effects are anticipated with regard to water pollution incidents.
- Due to the distance from the proposed development and the designated sites, atmospheric pollution is not considered. Glasgow International Airport additionally lies between the development and the designated sites.
- Due to the distance of the proposed development from the SPA/SSSI, it is not anticipated that the proposed development will cause an impact that will result in a Likely Significant Effect either alone or in combination on the integrity, function or the structure of the SPA/SSSI or the qualifying features.

Inner Clyde SPA/Ramsar/ SSSI

- The Inner Clyde SPA/Ramsar and SSSI share a common site boundary, which lies approximately 3.8km north west of the proposed development at the closest point. The SPA and Ramsar are both designated for non-breeding aggregations of redshank *Tringa tetanus*.
- The SSSI is designated for saltmarsh habitat as well as the following non-breeding aggregations: cormorant *Phalacrocorax carbo*, eider *Somateria mollissima*, goldeneye *Bucephala clangula*, oystercatcher *Haematopus ostralegus*, red-breasted merganser *Mergus serrator* and red-throated diver *Gavia stellata*.
- The proposed development does not require any land take from the designated sites. It is not directly connected to or adjacent to the SPA/Ramsar or SSSI. The development site is both laterally and vertically separated from the SPA/Ramsar/SSSI. There will be no reduction of habitat within the SPA/Ramsar or SSSI as a result of the proposed works either in isolation or in combination with other developments. Given the separation from the site, no reduction in species density is anticipated.
- The SPA/Ramsar/SSSI is hydrologically connected to the development site; such that hydrological pollution is possible. Pollution during construction may result from spillages from storage/use of fuels/materials/spoil, etc. in proximity to White Cart Water which could be carried downstream to the Inner Clyde SPA/Ramsar and SSSI. Potential pollutants of concern include soil, silt, cement/concrete, fuel, lubricating and shutter release oils, sewage and other waste materials. Fuel/oil spillages are the most likely source of accidental pollution from the works. Potential adverse effects on qualifying species can arise from the degradation of water quality due to biological and chemical changes from polluting discharges into surface waters. These can have a physical impact upon the qualifying species features of the site and lead to a degradation in the condition status of the designated sites. Where there is a hydrological link from the site to the designations there is potential for a temporary adverse effect upon the qualifying features of the site. Site observation and mapping indicates that there may be a mechanism by which accidental pollution could enter the Inner Clyde SPA/Ramsar/SSSI via the White Cart Water.
- Prior to mitigation, there is potential for accidental spillage and pollution to lead to degraded water quality within the SPA/Ramsar and SSSI.
- The application of mitigation measures to mitigate against surface water pollution, through the implementation of the project's Construction Environmental Management Plan, will ensure that water quality impacts are avoided through good practice, pollution prevention and a spillage response plan. With adherence to these measures, it is predicted that there will be no likely significant impact on the habitat of the SPA/Ramsar/SSSI or directly upon the qualifying features/criteria themselves and therefore no effect on their favourable conservation status and site integrity.

Shellfish Harvesting Areas

There are no Shellfish Harvesting Areas located within 2km of the proposed scheme.

Marine Protected Areas

There are no Marine Protected Areas located within 2km of the proposed scheme.

Bathing Water

There are no bathing water designated areas located within 2km of the proposed scheme.

Pollution Prevention / Mitigation

The engineering works associated with the bridge crossing itself do not require SEPA authorisation, as Marine Scotland regulates engineering works in waters below MHWS. . However, the contractor will need to comply with the Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended) (CAR), for all Controlled Activities requiring authorisation under the Pollution Control Regime. As a result of the overall works exceeding 4 hectare threshold as stipulated under CAR the contractor will need to obtain and comply by a Construction Run-off Permit authorised by SEPA.

Industry best practice measures, including SEPA and CIRIA best practice guidance, should be adhered to in the management of the risk of water pollution and sediment release during construction activities in order to reduce and minimise impacts on the designated sites, surface water, groundwater and flood risk. This includes SEPA's Guidance for Pollution Prevention (GPPs), and the older Pollution Prevention Guidelines (PPGs) where still current, including the following:

- GPP 1: Understanding your environmental responsibilities - good environmental practices
- GPP 2: Above ground oil storage tanks
- GPP 5: Works and maintenance in or near water
- PPG 6: Working at construction and demolition sites (currently under review)
- PPG 7: Safe storage - The safe operation of refuelling facilities
- GPP 13 Vehicle washing and cleaning
- GPP 21: Pollution incident response planning
- GPP 22: Dealing with spills
- GPP 26 Safe storage - drums and intermediate bulk containers

Other relevant guidance to manage and control the risk of water pollution include CIRIA's C648 (Control of water pollution from linear construction projects: Technical guidance) and C649 (Control of water pollution from linear construction projects. Site guide), and SEPA's Supporting Guidance (WAT-SG-75) Sector Specific Guidance: Water Run-Off from Construction Sites.

The measures that will be implemented should include:

- All plant and fuel storage at the site compound located on hardstanding and more than 10m from any watercourse;
- Storage areas located away from areas that see high vehicular movement to prevent accidental damage;
- All oils and fuels will be returned to storage area after use;
- No refuelling will take place within 10m of any watercourse, including drains;
- Spill kits will be kept for rapid deployment on the worksite wherever fuel or oil or machinery is present;
- Bunds to be provided around drums up to 205 litres with a buffer of 25% of their capacity; and
- Bunds to be provided around bulk storage to a capacity of 110% of the stored fuel/oil.
- Minimise disturbed areas prior to construction to control the limits of the project by working only in the necessary areas involved in the site. This will help reduce site run-off, erosion, and sediment control problems. Natural vegetation and areas of topsoil will be retained where possible.
- Construction activities will be phased in order to control erosion and sedimentation. Runoff, erosion, and sedimentation issues can be minimized and centralised in relatively small areas making it easier to control and to stabilise;
- There will be no direct discharge of surface water run-off or de-watering to the water environment.
- All construction run-off or de-watering will be treated prior to being discharged into the water environment.
- Treatment of construction water can be achieved via discharging to land allowing for natural infiltration, treatment via settlement ponds or equivalent or mechanically via siltbusters etc.
- Silt traps with grips will be created to intercept sediment-filled runoff;
- Construction within the floodplain of White Cart Water will be avoided, where possible;
- Temporary silt fencing will be installed around the areas deemed to be of high risk, to retain any sediment carried by stormwater;
- Construction entrances will be managed in order to reduce sediment being carried away by construction vehicles, which may enter watercourses via surface water drains;
- Routine inspections of the site will regularly take place. Site management plans will be strictly followed. Site inspections will take place after storm events or heavy rainfall.

A Construction Environmental Management Plan should be produced including but not limited to:

- All measures must be taken to ensure that any liquid of a hazardous nature is controlled in accordance with COSHH Regulations. Fuel, oil, and chemicals stored on site can impact greatly on the water environment, therefore these should not be stored within 10m of any watercourse or surface drainage system to minimise pollution risk. All contractors COSHH materials must be

secured when not in use and positioned in such a way that liquid will not flow into any nearby gully systems.

- Spill kits should be present throughout the construction site and located in areas where spillages may be most likely to occur. Temporary bunds or plant nappies should be utilised during the operation of small or stationary plant. A wheel washing station should also be established to ensure that runoff is captured and attenuated/ filtered before re-entering the water environment; a contained area should be established for washing vehicles and plant.
- Fresh concrete and cement are alkaline and corrosive substances which can create serious pollution incidents. Concrete and cement mixing and washing areas should be as far from open waterbodies and outfalls as possible and:
 - Be sited at least 10m from any watercourse and its flood plain/zone or surface water drain to minimise the risk of runoff entering nearby watercourses.
 - Have settlement and re-circulation systems for water reuse, to minimise the risk of pollution and reduce water usage.
 - Have a contained area for washing out and cleaning of concrete batching plant or ready-mix lorries.
 - Collect wash waters and, where necessary, discharge to the foul sewers (if consented), or contain wash water for authorised disposal off site.
 - All existing gullies will be bunded/plated over prior to the commencement of any work to prevent any material discharging into the gully pot.
- Materials and wastes should not be stockpiled in order to avoid the possibility of sediment laden surface water runoff. Where this is not possible, materials/waste should be suitably covered.
- As the proposed works are within floodplain, no works are to be undertaken during a flood event. Appropriate measures (such as settlement ponds/lagoons) should be employed during construction to prevent sedimentation or contamination of the watercourse during a flood event.
- A Flood Warning and Evacuation Plan will be developed where works are within areas potentially affected by flooding. This will set out the potential risks and identify a procedure for receiving and acting on flood warnings or for monitoring conditions on site to ensure that site operatives are aware of potential risks and how to mitigate them through safe working practices.
- A suitable strategy will be developed for managing any temporary impacts on floodplain storage or conveyance which may include identifying specific areas outside the floodplain for storage of materials or providing compensatory storage on a temporary basis.
- All drains within the extent of the works are to be fully covered to prevent any pollutant (liquid/solid) entering the drainage system. All debris to be removed from the road prior to re-opening the highway.

Appendix 4 – Marine Plan

Question 10 - Scotland's National Marine Plan

Consideration of National Marine Plan

GEN 2: The AMIDS South scheme, incorporating new bridge and roads, is being developed to support the development of the Advanced Manufacturing Innovation District Scotland (AMIDS) site to the north of Paisley. The AMIDS development is being founded on the principles that innovation will thrive, businesses will grow through collaboration and residents will be provided opportunity to develop skills commensurate with the employment and economic opportunities being created.

GEN 3: The new bridge over White Cart Water will provide improved connectivity between the residential areas on the west and east of the river. The new bridge, and connecting roads, are well positioned to reduce walking/cycling distance. Currently the White Cart Footbridge and the town centre gyratory (A726/Weir Street/Niddry Street) bridges further south are the only opportunities to cross the river. The scheme will therefore cut down journey times and hence create significant social and environmental benefits.

GEN 5: A Flood Risk Assessment has been undertaken for the proposed development including flood modelling of White Cart Water. The soffit of the new bridge has been set providing a 500mm freeboard above the combined 200 year tidal, and 2 year fluvial, return period modelled flood level. The modelling has included suitable allowances for the effects of climate change on water levels. This was a peak river flow uplift of 44% and a peak sea level rise allowance of 0.85m. The modelling and results were acceptable to SEPA in their planning application consultation response.

GEN 7: The bridge design is being developed by Ramboll, as bridge structural designer, in conjunction with BEAM Architects, as bridge architect. This ensures that, although the bridge has necessarily been engineering led, the design of the structural form has also sought to bring the maximum possible aesthetic benefit to the surrounding area.

GEN 8: The project has had flooding input and consideration of impacts from its early stages. The proposed bridge does not require permanent supports in the riverbed that may have affected flow in the watercourse and thus result in increased flooding. It is anticipated that two temporary supports will be required by the contractor to allow them to slide the new bridge into position during construction.

Flood modelling has been carried out, both for the temporary situation with supports in the river and in the permanent situation with no supports, and the results indicate that both tidal and fluvial flood events are not significantly impacted by the proposed development.

GEN 12: The proposed drainage system being developed to serve the bridge and connecting roads will incorporate use of Sustainable Drainage Systems (SuDS) to ensure adequate treatment of runoff prior to discharge into White Cart Water. This will ensure removal of silts and contaminants from the flow. SEPA advise on treatment requirements and the design will ensure these are adhered to.

GEN 13: Any successful tendering contractor shall be required to submit method statements for all construction work which must include the consideration and mitigation of noise impact. It is expected that best working practice will be conducted in order to minimise any disruption to the local community and marine wildlife. There is the requirement to submit a Marine Noise Registry (MNR) and thus monitoring will be undertaken.

GEN 14: Air quality assessment of the development has been undertaken. The main potential operational phase air quality impact was assessed to be emissions from road traffic. The overall effect of the Scheme on nitrogen dioxide (NO₂) and fine particulate matter PM₁₀ and PM_{2.5}) concentrations is considered to be not significant.

Appendix 5 – Photographs



Figure 1 - East Bank of the White Cart Water



Figure 2 – View of the East Bank from the West Bank



Figure 3 — View of the West Bank from the East Bank



Figure 4 – West Bank of the White Cart Water

Appendix 6 – Correspondence