Wellington Dock Planning Application, Liverpool

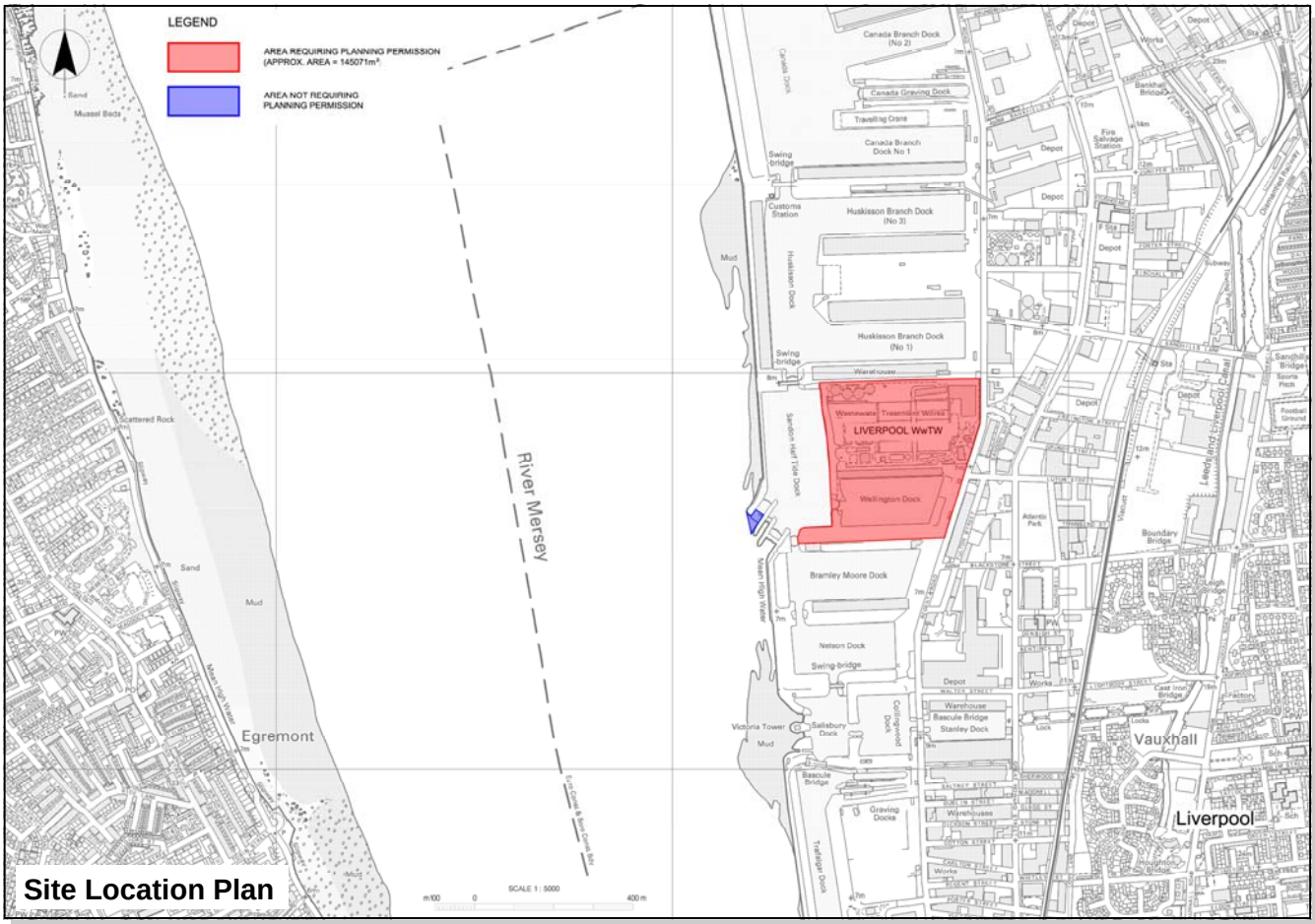
Non-Technical Summary for Environmental Statement

JACOBS

United Utilities

INTRODUCTION

United Utilities PLC (UU) has applied for planning permission for an extension to Liverpool Wastewater Treatment Works (WwTW) located at Sandon Dock in Liverpool. The extension will comprise the construction of a new plant to carry out the secondary treatment of the wastewater. The proposed development site is Wellington Dock, which is immediately to the south of the existing Sandon Dock section of Liverpool WwTW, and is currently occupied by a wet dock and surrounding hard standing docksides. This site is approximately 2 km to the north of Liverpool Town Centre, to the east of Sandon Half Tide Dock, which serves as a connection between the River Mersey and several other docks including Huskisson, Canada and Bramley Moore docks.



Site Location Plan

As part of the planning process, an Environmental Impact Assessment (EIA) has been carried out to understand the potential effects that the extension would have on the environment.

The results of the assessment are available in the Environmental Statement, and are summarised in this Non-Technical Summary.

WHY IS THE EXTENSION NEEDED

The existing secondary treatment process at Liverpool WwTW, is not able to consistently treat the wastewater in accordance with current regulatory requirements prior to discharge to the River Mersey. Rags, fats and grease create a blockage of the secondary treatment filter nozzles and biomedia that biologically treat the waste water. This has caused the wastewater to receive incomplete biological treatment prior to release to the river and also resulted in some consent compliance failures which in turn has lead to a prosecution by the Environment Agency. The site will be the the subject of a legal enforcement notice issued by the EA.

A replacement secondary treatment plant is required as a matter of urgency to ensure that the works complies with the discharge standards required by the Urban Wastewater Treatment Directive (UWwTD) and that there is no detrimental impact on the water quality of the Mersey. If Liverpool WwTW were to continue to fail to meet the consent for the discharge, then Infraction Proceedings (prosecution) against the UK Government could be taken by the European Commission for non-compliance with the UWwTD.

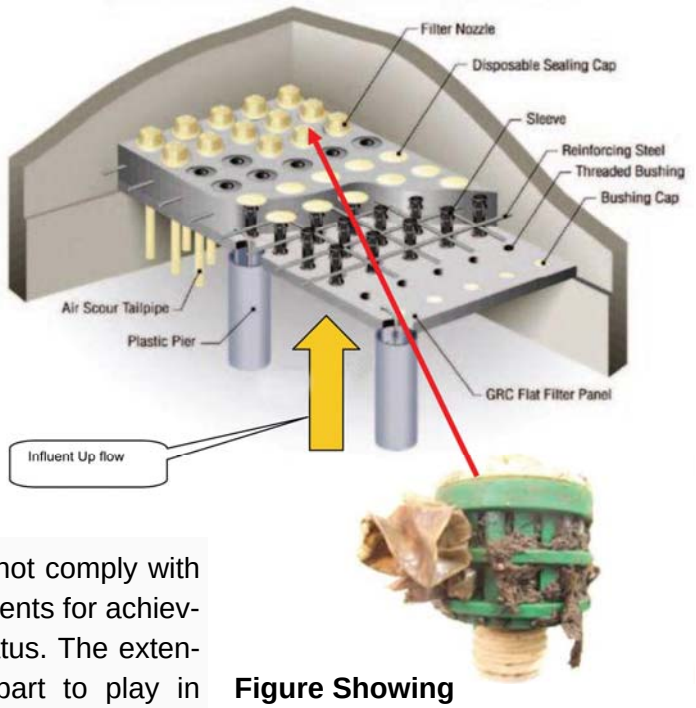


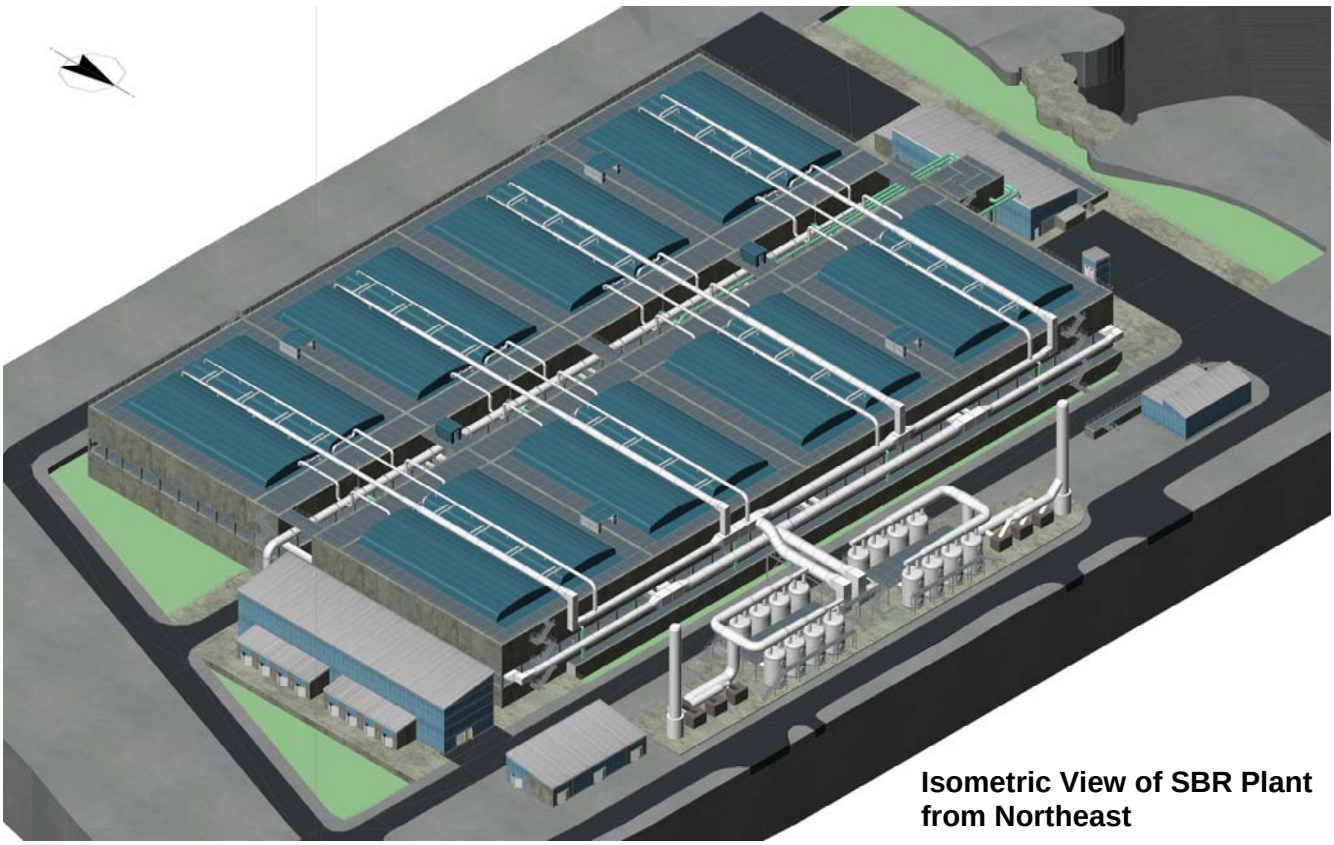
Figure Showing Blocked Nozzles

In addition, the Mersey Estuary currently does not comply with the Water Framework Directive (WFD) requirements for achieving 'good' ecological potential and chemical status. The extension of Liverpool WwTW has an important part to play in achieving this target.

DESCRIPTION OF THE SCHEME

Silt will be removed from the base of the dock prior to the works commencing. The dock will then be infilled to the current water level (approximately 1.5 m below top of dock wall), in order to retain the margin around the dock, apart from four vehicular access points. Dock side furniture, other than three bollards and railings, will be retained in order to preserve the historic aspects of the dock.

The main SBR building will be approximately 28m high, 200m long and 80m wide. In addition to this, there will be four adjacent buildings also involved in the secondary treatment process. The appearance of the buildings will be similar to the other large industrial buildings in the surrounding area.



Isometric View of SBR Plant from Northeast

The proposed secondary process, known as a Sequencing Batch Reactor (SBR), is designed to treat the wastewater to the required biological level prior to discharge to the River Mersey. This will result in an improvement to the water quality and ecology in the River Mersey.

The flows from the existing primary settlement tanks will be redirected to the SBR, where secondary treatment will be carried out in a series of 16 basins constructed on two levels. Following treatment, the wastewater will then be discharged directly to river via the existing discharge point. Effluent quality will be monitored by a water quality sampling device. The solid waste (known as 'sludge') will be pumped into the existing sludge treatment facility for treatment.

CONSIDERATION OF ALTERNATIVES

There are a number of fundamental requirements which need to be preserved to enable the WwTW to function as a complete system. The replacement secondary treatment plant needs to be as close as possible to both the primary treatment and sludge treatment facilities to allow the replacement plant to integrate with the existing treatment processes. In addition, effluent from the secondary treatment facility will be discharged into the River Mersey via the existing outfall which re-enforces the requirement to locate the new plant in close proximity to the outfall.

Therefore, the treatment process options considered were fixed to a solution within the footprint of the existing Sandon Dock area of Liverpool WwTW or the adjacent dock area.

The treatment process options considered were as follows:

- Option 1: improvements/new secondary treatment on the existing Liverpool Wastewater Treatment Works site;
- Option 2: treatment using a Membrane Bio Reactor; and
- Option 3: treatment using a Sequencing Batch Reactor.

Option 1 was rejected due to there being not enough space on the existing site required to construct a robust and reliable secondary treatment process. Option 2, was also rejected due to concerns regarding how well the process would work, high power usage and high operational costs. Option 3 was chosen as the preferred option, due to the process being widely used and able to reliably achieve the required treatment levels.

Options for site selection were also considered, which comprised only two realistic alternatives:

- Huskisson Dock; or
- Wellington Dock.

The landowner of Huskisson Dock confirmed that it was not available for development as it is in existing use, therefore Wellington Dock, which is currently leased by UU was the only option available and has the additional benefit of integrating better with the existing facilities so minimising pumping requirements and reducing carbon impacts.

APPROACH TO ASSESSMENT

The Environmental Impact Assessment for the proposed extension to Liverpool WwTW has been carried out in line with the relevant legislation and has followed best practice guidance. This includes specialist guidance such as that published by the Landscape Institute, the Institute for Ecology and Environmental Management and Guidance on Heritage Impact Assessment for Cultural World Heritage Properties.

The assessment has considered the existing condition of the environment, the way this may change due to the proposed development, and how measures can be used to reduce the impact of these changes. The individual technical assessments are found in Volume 2.

ENVIRONMENTAL TOPICS:

LANDSCAPE & VISUAL

The current landscape character is that of a dock basin, entrance and walls, forming part of the water-filled dock network. The adjacent landscape includes dock related site furniture and surfaces, with the dock perimeter wall extending north and south adjacent to Regent Road. The wider landscape comprises other heritage features such as a Hydraulic Engine House, and industrial uses on Bramley Moore Dock, Liverpool WwTW, wind turbines and other industrial sites.

Photomontage Showing Proposed SBR Plant after Construction

The infilling and subsequent development of Wellington Dock will cause an impact to the landscape and also to visual receptors to the east, although the presence of the dock perimeter wall will help screen the development. The design of the building will allow it to integrate into the existing landscape, thereby reducing the visual impact. The preservation of the dock basin, walls and copings and surfaces will reduce the impact to the landscape character.

ARCHAEOLOGY AND CULTURAL HERITAGE

The development is located adjacent to the Liverpool Maritime Mercantile City World Heritage Site (WHS), which is located immediately to the south, and within the WHS Buffer Zone. Other heritage features are located in the surrounding area, including a conservation area and thirteen listed buildings. Wellington Dock and its dock sides are also important heritage features (known as assets).

Physical impacts on Wellington Dock and archaeological sites along its docksides are predicted to result from the infilling of the dock and the construction of structures along the docksides.

The infilling of the dock and the construction of a large-scale building within the dock are predicted to impact on the setting of heritage assets including Listed Buildings comprising historic docks, warehouses, and associated dock-related structures, and undesignated items comprising historic docks, commercial, residential and industrial buildings.

An impact is also predicted to result from construction and operation of the proposed development on the Outstanding Universal Value of the World Heritage Site.

However, a range of measures to reduce the impact on heritage assets have been incorporated into the design of the proposed development. These include:

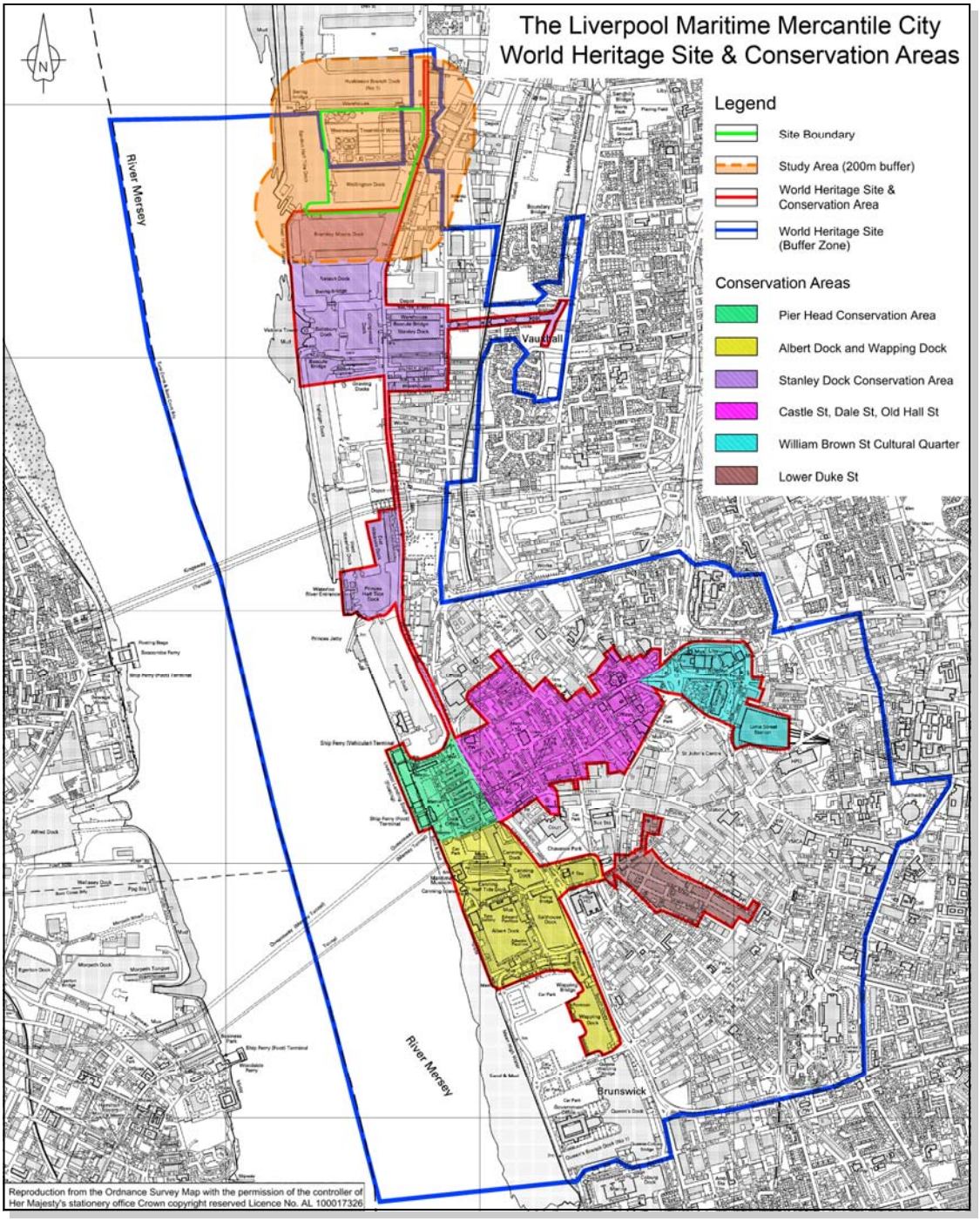
- Minimising intervention into historic fabric of the dockside area;
- Retaining the legibility of the dock wall;
- Retaining the dock gates (in the closed position);
- Retention of the SBR surrounding infill to maintain representation of the original water level aspect;
- Conservation of the historic dock wall; and
- Retention of associated dock furniture as appropriate.

Site specific mitigation measures include historic building recording, geo-archaeological assessment and a programme of archaeological monitoring.

NOISE AND VIBRATION

Noise and Vibration from construction and operational phases has been assessed. The construction activities on-site are not expected to result in significant noise and vibration effects. The existing 3.8 – 4.5 m tall listed perimeter wall that borders Regent Road provides an effective noise barrier for the closest noise sensitive receptors.

Increased road traffic during construction is expected to result in an overall negligible noise impact. For Boundary Street a minor increase in noise is predicted during peak periods.



TRANSPORTATION

The focus of this assessment has been on the construction period as no additional traffic would be generated when the extension is operating, in fact the traffic movements will decrease once the new plant becomes operational.

For the local road network and junctions adjacent to the site, the current traffic flows on the junctions are low, and therefore the proposed increase in construction traffic would cause minor increases in queuing and no increase in congestion.

For cyclists the local network provides a good and safe environment and these would not be affected by the minor increases in traffic during construction.

The site has a good provision of public transport facilities (both bus and train), which is easy accessible through the use of pedestrian routes.

Overall, the transport impacts of the development are considered to be minimal.

ECOLOGY

The proposed development is located adjacent to an active dock system and the River Mersey, both of which provide habitats for aquatic ecology including fauna living at the bottom of the dock/ watercourse (called 'benthic fauna') and fish, as well as wintering and breeding birds. Also associated with Liverpool Estuary are a number of designated sites with important populations of Wintering Birds.

The benthic and fish communities identified in Wellington Dock are species poor and typical of such environments. However, cod, eel and whiting were found, that are species of nature conservation importance.

Cod

Eel

The new secondary treatment process will improve the quality of the water discharged to the River Mersey, and has been assessed to provide a benefit to the aquatic species using this watercourse. It will also play an important part in helping achieve the WFD requirement of good ecological potential for the Mersey Estuary

The removal of silt and infilling of Wellington Dock would result in loss of habitat and direct mortality for the benthic communities, although this would be a very small percentage of the whole community in the dock system. Furthermore, the disturbance and removal of the silt and infilling of the dock would also have an impact on fish in the dock. Fish rescue with the use of nets, will be undertaken prior to the silt removal in order to reduce this impact.

Low species diversity and numbers were recorded at Wellington Dock for both wintering and breeding birds, indicating that the site does not support bird populations that are important at the local level or above. The survey results further indicate that the site is not a resource used by bird species that qualify as features of interest on the designated sites within the Mersey Estuary.

SOILS, GEOLOGY AND WATER QUALITY

The Mersey Estuary currently has a 'moderate' ecological quality and a 'fail' chemical quality. The provision of a robust secondary treatment process would provide a direct benefit to helping improve water quality within the River Mersey in line with the requirements of the WFD.

Potential impacts from the proposed construction works will be mitigated through the use of good site management and construction practices, adoption of appropriate controls and working practices and proper disposal of any contaminated material.

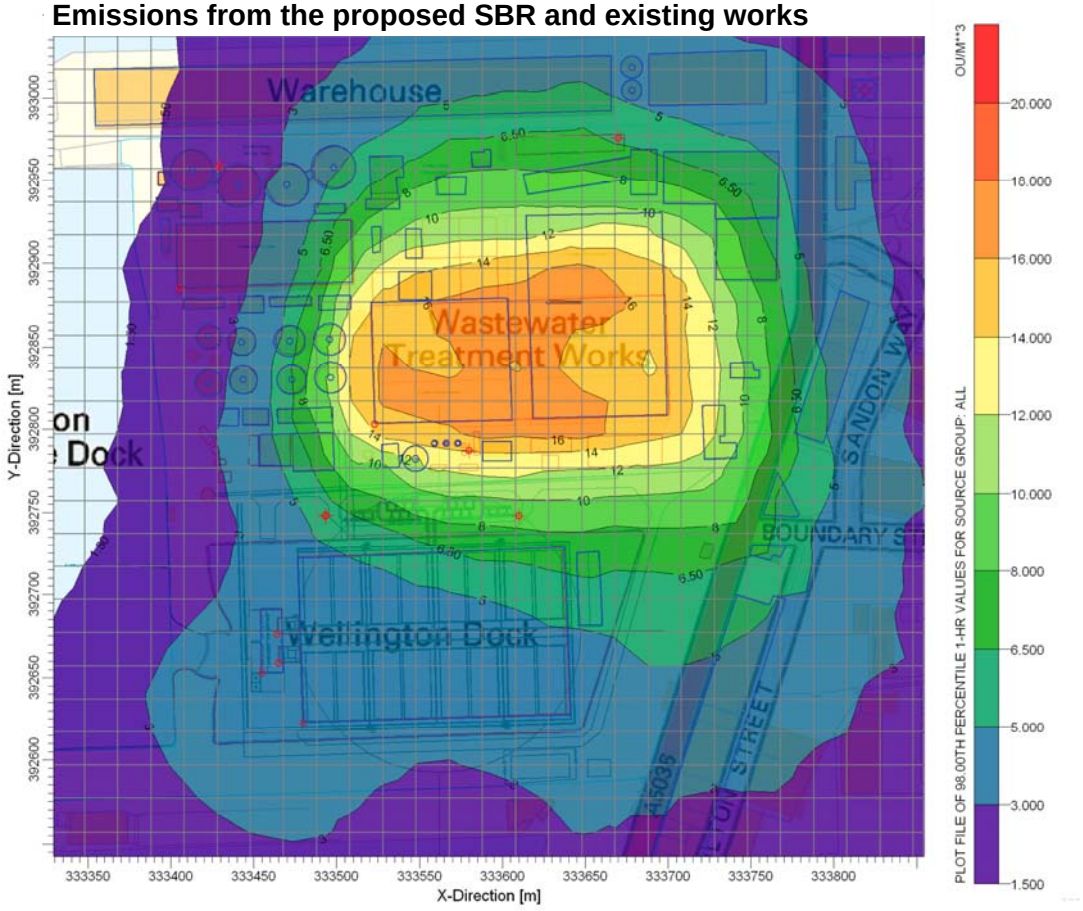
AIR QUALITY AND ODOURS

The proposed development has been assessed in terms of the generation of dust from construction activities and odour levels from the operation of the proposed secondary treatment plant.

Dust will be generated by the proposed construction works, although the assessment has shown that this would not cause any nuisance issues to the surrounding residential areas. In order to minimise impact from dust, construction activities on site would be conducted so as to minimise the generation and spread of fugitive dust.

A detailed assessment has been undertaken to assess whether the proposed development would result in any significant change in the odour levels which would be experienced by sensitive receptors off-site. Contour plots of emissions from the SBR process show that the new plant will cause no increases, compared to the current situation, in the emissions from the site.

Emissions from the proposed SBR and existing works



HYDROLOGY AND FLOOD RISK

The location of the development is an area of low flood risk, and is not located on an area of floodplain. Therefore the infilling of Wellington Dock will not cause the loss of floodplain.

There are a number of existing surface water outfalls, which drain the local area, located in Wellington Dock and would be affected by the infilling. These will be intercepted by the proposed drainage system and redirected to ensure that the existing drainage routes are sustained.

The sea wall defences adjacent to the River Mersey, that protect the dock system have been assessed and determined to be able to cope with the predicted tidal influenced level changes caused by a major flooding event.

CONCLUSIONS AND MANAGEMENT OF ENVIRONMENTAL IMPACTS

The proposed extension of the Liverpool WwTW for the new secondary treatment process would provide essential improvements to the treatment of the wastewater received from homes and businesses in Liverpool City centre and immediately surrounding areas, prior to its discharge to the River Mersey. It would also ensure that the works complies with the discharged standards required by the Urban Wastewater Treatment Directive.

The proposals would play an important part in helping the Mersey Estuary achieve the required target of good ecological potential and chemical status.

The proposed development has also been designed in order to minimise the potential impact on archaeology and cultural heritage recognising its location within the World Heritage Site Buffer Zone.

The impacts of construction activities will be managed through the development and implementation of a Construction Environmental Management Plan. This will address working hours, traffic management, control of pollution, waste management, noise, dust and vibration. Furthermore, UU will provide a public liaison officer to keep the public informed throughout the construction process.

PLEASE CONTACT:

If you require further details concerning the potential effects that the development may have on the environment, then this information is contained with the Environmental Statement. Copies of this statement are available for the inspection at Liverpool City Council at:

Development Control Division, Liverpool City Council , Municipal Buildings, Dale Street, Liverpool L69 2DH.

Telephone: 0151 233 3021

Fax: 0151 233 4290