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1 INTRODUCTION

Jacobs UK Ltd. (Jacobs) was commissioned by United Utilities (UU) to undertake a range of ecological services to inform the improvement works at Castleton Wastewater Treatment Works (WwTW) and ROC0094 Combined Sewer Overflow (CSO) located south of Rochdale (Greater Manchester). These are two separate projects but within close proximity (100m) to each-other being delivered under the UU Asset Management Programme 7 (AMP7). Improvements to the WwTW and CSO have been identified as being necessary to meet the requirements of an Environment Agency Water Industry National Environment Programme.

The proposals involve the installation of wastewater equipment necessary to deliver the Environment Agency (EA) Water Industry National Environmental Programme (WINEP) and to meet phosphorus, ammonia and Biological Oxygen Demand (BOD) final effluent consent standards to achieve Water Framework Directive (WFD) 'good' status for the River Irk. These standards would be implemented on Trub brook, a main river which flows from east to west adjacent to the southern boundary of ROC0094, and through the WwTW where it is discharged into the River Irk. The proposals are also required to accommodate future population growth at Castleton WwTW based on the 2035 design horizon. The existing CSO at ROC0094 (located underground) needs to be modified to accommodate changes being made at Castleton WwTW and to meet wet weather Fundamental Intermittent Standards (FIS) driven by WFD.

Works are relatively small-scale with the majority of Castleton WwTW due to be carried out under permitted development rights. A small number of items included in the proposals (i.e. the construction of six kiosks within the existing WWTW and widening of the access track entrance) require planning permission. More details are provided in Section 6. A request for Environmental Impact Assessment (EIA) Screening has been submitted and although it is expected that the proposals will not trigger EIA the formal Screening opinion has not been received at the time of writing. The consenting regime for ROC0094 is unclear at this stage (i.e. whether it will be carried out under permitted development rights or require planning).

This report has been produced to inform Habitats Regulations Assessment (HRA) screening to consider the potential for the projects to result in significant effects to Rochdale Canal Special Area of Conservation (SAC) located within 70m of ROC00994 and 200m of Castleton WwTW. Due to the close proximity of the projects to each-other (i.e. within 100m), these are considered together to account for potential in-combination effects. These two projects are herein referred to as 'the schemes'.

1.1 Legislative Background

The development of this report has been specifically influenced by:

- Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora ('The Habitats Directive');
- Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds ('The Birds Directive');
- the UK-relevant transposing regulations for the implementation of these Directives (The Conservation of Habitats and Species Regulations 2017 (as amended) ('The Habitats Regulations'); and

- relevant case law (referenced within this report where relevant).

It should be noted that the Conservation of Habitats and Species Amendment (EU Exit) Regulations 2019 will come into force on 31 December 2020. This will result in only relatively minor changes to the existing Conservation of Habitats and Species Regulations 2017 (as amended) (Freeths, 2020).

1.2 Requirement for a Habitats Regulations Assessment

In accordance with the Habitats Regulations, all competent authorities must undertake a formal assessment of the implications of any new plans or projects that may be capable of affecting the designated interest features of 'European sites' before deciding whether to undertake, permit or authorise such a plan or project. For all plans and projects which are not wholly directly connected with or necessary to the conservation management of the site's qualifying features, this will include formal HRA screening for any likely significant effects on the site's designated features (either alone or in combination with other plans or projects).

European sites subject to screening include the following:

- Sites of Community Importance (SCIs);
- Special Protection Areas (SPAs), and potential SPAs (pSPAs);
- Special Areas of Conservation (SACs), and candidate SACs (cSACs) or potential SACs (pSACs); and
- Ramsar sites[1].

If a project would result in pathways to likely significant effects on a European site's designated features, then the project should be subject to an Appropriate Assessment.

Under the Habitats Regulations, an effect is "likely" if;

1. it cannot be excluded, in that it is capable of having an effect, on the basis of objective information; and
2. it is likely to undermine the site's conservation objectives.

1.3 Purpose of the Report

This report presents the information to enable a Habitats Regulations Assessment (HRA) screening assessment for the scheme to be undertaken. The purpose of this report is to document and present information to establish whether the scheme is likely to have significant effects on European sites, alone or in combination with other plans or projects.

[1] Although Ramsar sites are not subject to the same legal protection as SACs and SPAs, they are included for the purposes of this report as they are of international importance and it is UK Government policy that they should have the same level of protection.

1.4 Document Content

This report to inform HRA screening sets out the following:

- Assessment Methods and Assumptions (Section 2);
- Details of the European sites to be included in the assessment, and figures which show their locations (Section 3; and Appendix A, Figure 1 and Figure 2); and
- A description of the proposed works, with identification of possible pathways to these sites, and assessment of whether the pathways are functional and likely to result in significant effects (either alone or in combination with other plans or projects) (Section 4 and Section 5).

2 ASSESSMENT METHODS AND ASSUMPTIONS

2.1 Screening

The screening assessment has been compiled following the methodology provided by the Habitat Regulations Assessment Handbook (DTA, 2017). The screening process involves consideration of the proximity of European sites to the scheme works; the features of the European site, including primary reasons for selection and the conservation status of the qualifying interests; and the vulnerability of the European site and conservation objectives. The process takes into consideration the nature of the project works, project design; and the cumulative impacts that could arise from the project in combination with other plans and projects.

The Habitat Regulations Assessment Handbook (DTA, 2017) states that "the appropriate area or distance of any 'zone of influence (ZoI)' to be defined should be based on a site-by-site analysis based on all available evidence". This screening assessment considers all the evidence of the proposed works and identified relevant European sites.

Whilst the main driver for undertaking this assessment is the relatively close proximity of Rochdale Canal SAC to the schemes, a high-level scoping exercise was completed to identify any additional European sites (and associated functional land) that may require consideration as part of the screening process. This considered European sites within 2km of the scheme (including up to 10km where birds are a qualifying feature of interest or 30km where bats are a qualifying feature of interest) or where hydrological connections exist (both in terms of being located across, adjacent to, upstream of or downstream of a watercourse which is designated in part or wholly as a European site, or with hydrological or hydrogeological linkage to a European site containing a groundwater dependent terrestrial ecosystem (GWDTE)) (see Figure 1, Appendix A). This approach towards identifying the ZoI is broadly in line with guidance within the Design Manual for Roads and Bridges (DMRB) LA115 – Habitats Regulations Assessment (Highways England, 2020a). Figure 1 provides a 5km and 10km buffer around the schemes to place them in geographical context of European sites.

2.2 Inherent Scheme Design

Prior to April 2018, and the ruling in People Over Wind and Sweetman v Coillte Teoranta (European Court of Justice Case C-323/17), it was widely accepted that the screening stage could incorporate mitigation measures intended to avoid or reduce the harmful effects of a project on a European site. However, the Court of Justice of the European Union ruled that such measures could not be taken into consideration at the screening stage. Consequently, proposed mitigation measures will not be considered within this report to inform HRA screening.

Standard good practice measures unrelated to the presence of a European Site (e.g. relating to discharges, emissions, pollution management, and construction operations) are inherent elements of scheme design and will be incorporated into the scheme through the standardised United Utilities AMP7 Framework 'Environmental Control Plan' (ECP). The Environmental Control Plan for Castleton WwTW is included in Appendix B. The ECP for ROC0094 has not been developed at the time of writing but will incorporate the same standardised good industry practice measures.

2.3 Cumulative Impacts

For an in-combination effect assessment to be necessary or relevant, any plan or project (including the schemes being assessed here) would have to result in a level of adverse impact that could contribute significantly to an in-combination effect. If for any effect pathway the assessment concluded either no effect or a *de minimis* (inconsequential) effect, it is considered that no significant contribution to an in-combination effect would be possible, irrespective of what other plans and projects contributed. Castleton WwTW and ROC0094 Combined Sewer Overflow are two projects that are being considered together in this HRA to account for potential in-combination effects due to their proximity to each other (within 100m) and their proximity to a European site (between 70m with the access track passing directly over the top of the SAC for ROC0094 and 200m for Castleton). Should an in-combination effects assessment be required, this would be determined based on a review of the relevant district and borough council websites for details on policies and current planning applications within 2km.

2.4 Assumptions

The format of this report to inform HRA screening is based on the current design and construction methodology of the scheme at the time of writing.

At the time of writing proposals for Castleton WwTW are at an advanced stage ready to support planning applications due in December 2020. Proposals are described in Section 6 and indicated in Appendices C and D.

Proposals ROC0094 are less developed and may be refined following completion of this report and indicative project parameters are provided in Section 5. Where there is uncertainty a 'worst case' has been adopted with regards to scale of works and proximity to European Sites to enable the in-combination assessment to be undertaken. Providing the key parameters do not change with regards to potential pathways, (i.e. in terms of proximity to Rochdale Canal SAC, activities that have the potential to result in pathways) the conclusions of this report are likely to remain valid. Any changes in proposals would result in the conclusions of this report being reviewed.

2.5 Data Sources

This data used to inform this assessment is based on the following:

- Aerial imagery (Google Maps) [accessed 04/11/2020];
- Defra's Multi-Agency Geographic Information for the Countryside (MAGIC MAP) [accessed 04/11/2020];
- Castleton WwTW Access Route - Extended Phase 1 Habitat report (NLG, August 2020a) 80061379-01-C2V-CSTLT-99-RP-I-00008;
- Castleton WwTW/ ROC0094 CSO - Extended Phase 1 Habitat report (NLG, August 2020b), 80061379-01-C2V-CSTLT-99-RP-I-00009;
- Castleton WwTW - Ecological Risk Assessment report (Jacobs, June 2020), 80061379-01-C2V-CSTLT-99-RP-I-0000;
- Rochdale Canal SAC Natura 2000 – Standard Data Form (JNCC, 2015), and
- Ecology of the Floating Water-plantain, *Luronium natans* (Lansdown and Wade, 2003).

3 SCOPING OF EUROPEAN AND RAMSAR SITES

The European site discussed in this document comprises:

- Rochdale Canal SAC, located approximately 70m east of ROC0094 (with the access track passing directly over the SAC) and 200m of the existing Castleton WwTW (shown on Figures 1 and 2, Appendix A):

More information relating to Rochdale Canal SAC is described in Section 5 and its citation located in Appendix C.

There are no European sites or Ramsar sites within 30km of the scheme where bats are listed as one of the qualifying features.

The following European sites were identified during the scoping process (locations are shown in Figure 1 for context), but were subsequently scoped out due to its distance (8.5km), absence of hydrological connections and absence of other potential pathways including functional land being identified:

- South Pennine Moors Phase 2 SPA/SAC, located approximately 8.5km north-east of the scheme.

The locations of these sites are show in Figure 1 (Appendix A).

4 SITE DESCRIPTION AND CONTEXT

This section places the schemes within the context of Rochdale Canal SAC including the hydrological baseline to facilitate the identification of potential pathways. Please refer to Figures in Appendix A.

4.1 Castleton WWTW

The existing Castleton WwTW is 4.0 ha in size and is located south of Rochdale to the immediate south of the M62 Motorway. The Manchester to Rochdale railway line forms the eastern boundary of the WwTW. Rochdale Canal SAC is located 200m east of the railway (i.e. the railway forms a barrier between the WwTW and Rochdale Canal SAC. Topographical data indicate that the Rochdale Canal SAC is located topographically upgradient from the site and the railway. The Manchester Golf Course forms the western and southern boundary of the existing WwTW. Habitats on the existing WwTW comprise predominantly modified grassland and poor condition broadleaved woodland with some hard standing and exiting infrastructure

The Castleton WwTW upgrade scheme includes widening an existing golf course access road to include passing places. This access road is located south of the existing WwTW and totalling 0.5ha subject to widening. This access track runs along eastern boundary of the golf course connecting to the A664 (Rochdale Road) where widening works are proposed at the access track entrance forming an additional planning application (0.6ha in size). Habitats along the existing access track and track entrance comprise predominantly modified grassland and broadleaved trees/poor condition woodland. The railway remains a barrier between existing access track/access widening and the Rochdale Canal SAC.

Trub brook flows through the existing WwTW in a westerly direction (i.e. towards the golf course). Surface water run off from the existing WwTW flows towards Trub brook. Surveys found this section to comprise a concrete channel with little to no aquatic or emergent vegetation present.

In terms of ground water Appendix F provides a calculation of the groundwater flow direction arising from initial ground investigation (GI) work undertaken in 2020 which shows that groundwater flow is roughly NNW across the southern part of the site, i.e. towards Trub brook. Whilst GI work is pending at the time of writing for the north of the WwTW, it is predicted that local groundwater flow for the remainder would tend towards Trub brook[2].

4.2 ROC0094

The site known as ROC0094 comprises a small area (0.6ha) of undeveloped land with an underground CSO, north of Castleton WwTW, located to the immediate north of the M62 and immediate east of the Manchester to Rochdale railway line. Habitats at ROC0094 are generally of low condition and distinctiveness comprising modified grassland, and broadleaved woodland/scrub.

Trub brook flows along the southern boundary of the site to the west, before passing underneath the railway and M62 towards Castleton WwTW (described above). The site gradient is towards Trub brook with surface water and ground water flow tending towards Trub brook[2]. Rochdale Canal SAC is

[2] Email dated 17th November 2020 'Re Castleton WwTW/ROC0094 Groundwater Query' Rob Lingard (Jacobs Senior Associate Director of Land Quality and Land Quality Lead for AMP 7)

located 70m east of ROC0094 and is topographically upgradient of ROC0094 site (i.e. at a higher elevation). The access track for ROC0094 extends from Trub Road and passes directly over the SAC.

5 ASSESSMENT OF LIKELY SIGNIFICANT EFFECT AND CONCLUSION

Rochdale Canal SAC (UK0030266)	
The purpose of the following assessment is to determine whether the proposed scheme works are likely to result in any potential pathways for likely significant effects to Rochdale Canal SAC. The objective is to determine whether further assessment or assent may be required under the Habitats Regulations (1997) (as amended), which require consideration of whether works are likely to have a significant effect alone, or in combination with other plans and projects, on one or more European sites.	
Type of Permission /activity:	Figures 1 and 2 indicate the footprint of both schemes including permitted development and planning elements, as well as temporary areas required during construction and construction site access routes. Most of Castleton WwTW will be delivered as permitted development. Planning permission is required at the WwTW at Castleton for the following elements: • Access track entrance widening at A664; (Appendix C) • Ferric Storage Kiosk, MCC Kiosk, Sludge Thickeners Kiosk, Caustic Dosing Kiosk, Polymer Dosing Kiosk, SCADA and Lab Kiosk (Appendix D (Screening Opinion Site Layout Plan). For ROC0094 Combined Sewer Overflow (CSO) the consenting regime is unknown at the time of writing (i.e. whether planning consent will be required). The key elements will comprise a GRP kiosk and permanent access track within the site boundary to access the kiosk and screens for maintenance with a temporary construction compound to the immediate west. Site access will utilise the existing access track at Trub Road.
National Grid Reference:	Castleton WwTW: SD 8803 0953 ROC0094 Combined Sewer Overflow: SD 8818 0983
UU Site Reference:	80061379 (both sites)
Brief Description of Proposal:	This proposed scheme comprises two separate projects: Castleton WwTW and ROC0094 CSO. Castleton WwTW and ROC0094 CSO are being considered together in this HRA to account for potential in-combination effects due to their proximity to each other and Rochdale SAC. **Castleton WwTW** The proposed WwTW upgrade works are located within land within the confines of the existing Castleton WwTW fenced boundary, with works to the junction and access track located on non-operational land. The site boundary is shown on Figure 2, Appendix A. The Castleton WwTW scheme also includes the proposed site access which runs along an existing track to the south through Manchester Golf Course and connecting to the A664

	(shown in Figure 2 Appendix A and Appendix C). The existing WwTW boundary is shown in Appendix D. The installation of additional wastewater treatment process units and ancillary buildings are necessary in order to meet the project requirements. The works required to accommodate the improvements to the receiving watercourse (Trub brook) include the installation of: • New inlet pipe. • Flowmeter chamber. • Ferric dosing and storage facility. • 2 new above ground final settlement tanks. • A new Final Settlement Tanks (FST) distribution chamber. • A new above ground primary settlement tank. • New Primary Settlement Tank (PST) distribution chamber. • New sludge system including 3 new tanks - thickening tank, holding tank and feed tank. • A new above ground Integrated Fixed-Film Activated Sludge (IFAS) tank. • New above ground IFAS distribution chamber. • IFAS below ground feed pumping station. • FST below ground feed pumping station. • Liquor's return pumping station, below ground. • New compressors kiosk at the IFAS tank (blowers) • New Motor Control Centre (MCC) kiosk. In order to safely construct the works, a temporary remote compound will be necessary, to be located within UU land to the west of the WwTW (included within the scheme boundary shown in Figures 1 and 2 Appendix A). The passing places and laybys are located on third party land (the Manchester Golf Club to the south). The works at Castleton are split into enabling works (5 weeks starting November 2020); Construction Phase (24 Months starting March 2021) and Commissioning Phase (16 Months March 2023). The processes are detailed in the ECP (Appendix B). The key machinery and material requirements is summarised below: Enabling Works (MGC golf club road widening & office/welfare set up) requiring: excavators; dumpers; wagons; welfare; aggregate; tarmac. Construction phase requiring: excavators and plant; cranes; wagons; welfare; aggregates; concrete (batched); concrete (pre-cast); timber; piling rigs; piles; steel rebar; geogrid; pipework; ducting; manhole chambers. **ROC0094** The existing CSO is located underground and receives relieves storm flows to Castleton WwTW. The site boundary is shown on Figure 2, Appendix A.

The CSO needs to be modified to accommodate the impact of development changes being made at Castleton WwTW and to meet new discharge consent requirements. This will require land purchase and a new installation at the CSO site, including a motor control kiosk (MCC), below ground screening equipment (retrofitted inside the existing CSO structure) and a new access road to service these assets (see Plate 1 for indicative design).

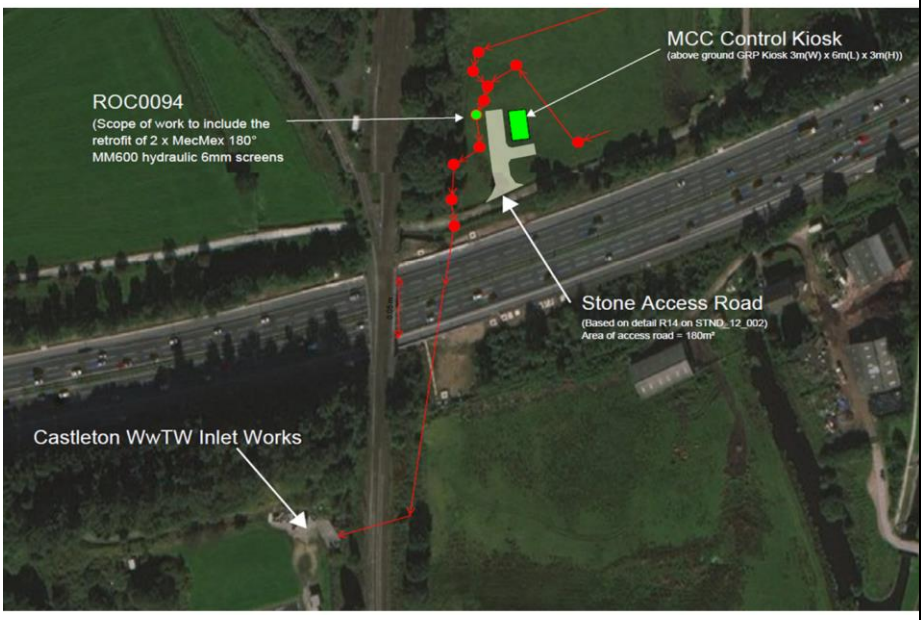

Plate 1 – Indicative Design for ROC0094

The new access road would link an existing site access road to the assets (see Plate 2 below). Improvements to the site access road may be required for construction and permanent access requirements (indicated as blue and purple in the plate below).

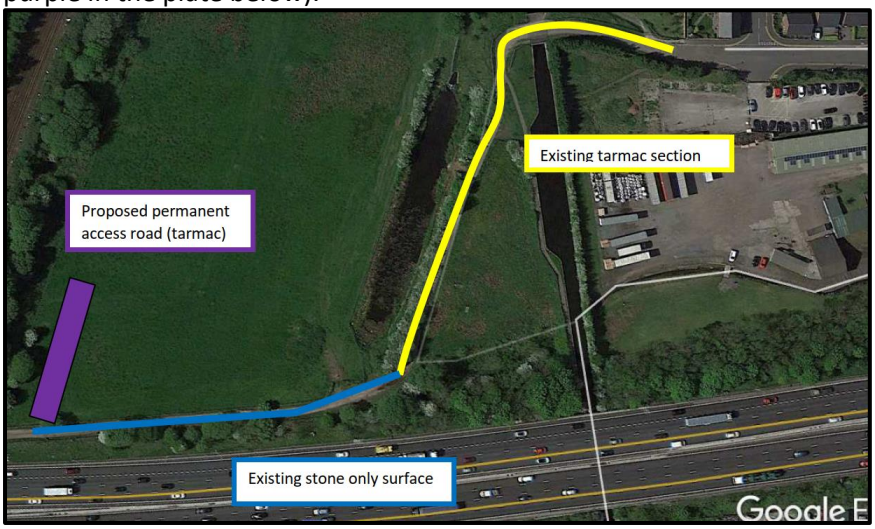

Plate 2: The proposed permanent access road (purple) and the existing access track (blue and yellow).

	The process to determine the works related to the existing site access road comprises the following: • Vehicle tracking software will be used to carry out a swept path analysis, to determine if the road needs to be widened temporarily and / or permanently; • If only temporary widening is required, compacted stone shall be used. If it is required permanently, tarmac will be laid on top of the stone. The stone and tarmac build up layer requirements shall be determined by California Bearing Ratio (CBR) test (a penetration test which is used to evaluate the subgrade strength primarily of roads, pavements and foundations); • The existing farm track is surfaced with tarmac for approximately 60% of its extent shown in yellow on Plate 1. The area with no tarmac surfacing will likely need to be maintained throughout the construction phase; • The asset will be visited infrequently and therefore it is unlikely that the access road (blue section on Plate 1) would require permanent resurfacing. There requirement to resurface this area with tarmac is considered an unlikely worst-case scenario, to be confirmed following the CBR tests. A temporary compound will be required to the east of the new access road for the duration of construction (see Figure 2, Appendix A). The site will be enclosed by a site fence and will include landscaping. The current programme for the construction phase of ROC0094 is 01/03/22 – 08/07/22. An ECP will be prepared to implement similar standardised good industry practice measures as those implemented for Castleton (Appendix B).
European site name(s), status and conservation objectives:	Rochdale Canal SAC (citation details located in Appendix C) Site Code: UK0030266 (Publication date: 27 November 2018 (version 3)) *The European Site Conservation Objectives for Rochdale Canal Special Area of Conservation* Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring; • The extent and distribution of the habitats of qualifying species • The structure and function of the habitats of qualifying species • The supporting processes on which the habitats of qualifying species rely • The populations of the qualifying species, and • The distribution of the qualifying species within the site.

List of interest features:	Rochdale Canal SAC (UK0030266) The site is designated under article 4(4) of the Directive (92/43/EEC) as it hosts the following species listed in Annex II: • Floating water-plantain (*Luronium natans*)
Is the proposal directly connected with or necessary to the management of the site for nature conservation?	No

What potential hazards/risks are likely to affect the interest feature? Are the interest feature potentially exposed to the hazard?[3]

Sensitive Interest Feature	Potential Hazard	Potential exposure to hazard/risk and mechanism of effect/impact if known:
Floating water-plantain (*Luronium natans*)	Habitat Loss/ Physical Damage.	**Castleton WwTW** The design of the project has been considered in terms of its temporary and permanent land take. There is no permanent or temporary land take of Rochdale Canal SAC or any other water course that may support qualifying species of the SAC. The proposed permanent works are restricted to the existing WwTW and land to the south associated with the Manchester Golf Course. At its closest point the scheme is located 200m west of Rochdale Canal SAC with the Manchester to Rochdale Railway Line forming a continuous linear barrier. **No conceivable pathway to likely significant effect.**
		ROC0094 The design of the project has been considered in terms of its temporary and permanent land take.

[3] Key risks identified in the citation for this SAC has been used to inform this assessment. In addition 'Habitats Directive: Risk definitions and matrices' - The Environment Agency (2015) hazard matrix was reviewed to inform the assessment. The Environment Agency no longer maintains this guidance and the document was withdrawn in 2016, but the hazards are still applicable.

		There is no permanent or temporary land take of Rochdale Canal SAC. The proposed permanent works are restricted to the CSO and adjacent field to the east of Rochdale Canal SAC. At its closest point the scheme is located 70m west of Rochdale Canal SAC, with Rochdale Canal being located at a higher elevation. The access track passes over the SAC (at its closest point it is located 2.3m from the SAC) but will not result in any permanent or temporary land take of the SAC. **No conceivable pathway to likely significant effect.**
	Toxic Contamination	**Castleton WwTW** Adverse effects due to potential contaminants of concern are considered negligible due to the distance of the works from the designated site being 200m and the WwTW being also located downstream of its hydrological link to the SAC by the westwards flowing Trub Brook and away from the canal. Rochdale Canal SAC is also located topographically upgradient from the site. Of additional note the Manchester to Rochdale railway line forms a linear barrier between the WwTW scheme and Rochdale Canal SAC for the full extent of the scheme footprint to eliminate any surface water run off pathway. In terms of groundwater, the groundwater flow direction also tends towards Trub brook (i.e. away from the canal) (see Section 4). Canals on the whole tend to be lined and generally around 1.2-1.5m in depth although this information specifically for Rochdale Canal is unknown. Based upon the calculations of groundwater flow direction, the topographic levels and the likely depth of the canal, there is a negligible risk of any groundwater affected by contamination beneath the site affecting the canal. In addition to lack of credible hydrological pathways outlined above, standard industry good working practice, methods and design would be implemented unrelated to the presence of the SAC, which minimise the risk of a release of potential contaminants of concern. These are outlined in the ECP (Appendix B). **No conceivable pathway to likely significant effect.**

		ROC0094 As for Castleton WwTW, potential effects due to potential contaminants of concern are considered negligible due to the canal being elevated above the ROC0094 site and therefore there is no surface water hydrological connection between the site and the SAC. It is likely that groundwater flow would also tend towards Trub brook and the natural gradient of the site towards the south and west (i.e. away from Rochdale Canal SAC) (see Section 4). Based upon the likely groundwater flow direction, the topographic levels and the likely depth of the canal, there is a negligible risk of groundwater affected by contamination beneath the site affecting the canal. With regards to the access track (which passes over the SAC), upgrades will be required to the area indicated in yellow in Plate 1 which is located downgradient of Rochdale Canal SAC. Upgrade will comprise either widening and maintenance work to the existing access track (which would comprise installing stone in 150mm layers and compacting) or, as a 'worst case' the installation of a tarmac road surface where it is not currently present. The tarmac method would be to excavate to desired formation level (dependent on the CBR test results), installation of a stone subbase to required thickness, followed by the installation of a tarmac surface and facilitate at most 25 additional vehicles using the access track per day (for two days). The drainage of the access track is to let the water run off the existing surface into the grass verge and drain to ground (which drains toward Trub brook down gradient of the Rochdale Canal). No upgrades are planned for the drainage system due to the highly occasional predicted use of the track. Due to the locations of the areas of the access track that may would upgrade (i.e. downgradient from Rochdale Canal SAC), and the small-scale/highly localised nature of track upgrade works, there is a negligible risk of a pollution incident through the upgrade and use of the access track. In addition to lack of credible hydrological pathways outlined above, standard industry good working practice, methods and design would be implemented unrelated to the presence of the SAC, which minimise

		the risk of a release of potential contaminants of concern. These are outlined in the ECP (Appendix B). **No conceivable pathway to likely significant effect.**
	Human induced changes in hydraulic conditions	**Castleton WwTW** The proposals seek to improve the existing processes of flow to full treatment and meet more stringent effluent permit conditions rather than create new systems that would result in changes to hydraulic conditions. The lack of hydrological connectivity between the scheme and Rochdale Canal SAC is outlined above relating to toxic contamination. The scheme will not change hydraulic conditions and does not share a surface water or groundwater pathway with Rochdale Canal SAC. **No conceivable pathway to likely significant effect.**
		ROC0094 As outlined for Castleton WwTW, the scheme will not change hydraulic conditions, and does not share a surface water or groundwater pathway with Rochdale Canal SAC. **No conceivable pathway to likely significant effect.**
	Air pollution, air-borne pollutants	**Castleton WwTW** No operational airborne pollutants would arise from the scheme due to proposals being largely passive and self contained. Standard good industry working practice measures will be implemented during construction, unrelated to the presence of Rochdale Canal SAC relating to the limiting the generation of dust and other air emissions during the construction period. These are detailed in the ECP (Appendix B). It should be noted that Castleton WwTW is adjacent to the M60 Local Air Quality Management Area (AQMA) which is particularly sensitive to increases in air pollution and is heavily monitored/managed.

		No conceivable pathway to likely significant effect.
		ROC0094 As per Castleton WwTW no operational airborne pollutions are expected to arise. During the construction period, the access track will facilitate, at most, four cars/vans per day with an average of two deliveries per day, with a maximum of 25 vehicles in a day. Vehicles are expected to access the construction area for five months. The access track passes over Rochdale Canal SAC (see Figure 2, Appendix A). The vehicles will comprise predominantly cars and vans, predominantly self-contained with a peak of 20 stone delivery wagons (where 40 wagons will be required for compound stone, across two days). In line with standard good instruct working practice, all vehicles carrying construction materials such as spoil will be sheeted to prevent dust generation. The access track may require 'upgrades', depending on the CBR test results, comprising compacting stone and/or tarmacking (as outlined in project description). These works will involve the installation of stone and tarmac build up layer on the existing access track which will be carried out in line with standard good industry practice measures outlined in the ECP, comprising: • Dust suppression will be used when necessary by dampening road surfaces and stockpiles using water sprays and bowsers; • Clean off mud from access roads regularly; • Shape stockpiles to minimise potential for dust generation, and • Enforce a 10mph speed limit. Standard good industry working practice measures will be implemented, unrelated to the presence of Rochdale Canal SAC relating to the limiting the generation of dust and other air emissions during the construction period of both any upgrades to the access track, and management of construction traffic. These are detailed in the ECP (Appendix B). As such no credible air pollution/ air borne pollutants pathways have been identified.

		No conceivable pathway to likely significant effect.
	Invasive non-native plant species	**Castleton WwTW** The field surveys identified the presence of Himalayan balsam (*Impatiens glandulifera*) within the existing WwTW (Jacobs, 2020) located 0.2km west of the SAC. Invasive non-native species can swamp the banks of rivers and water bodies and have been identified as a potential threat to floating water plantain (Lansdown and Wade, 2003) which includes species such as Himalayan balsam. Himalayan balsam is spread through seed and could be spread if construction activities were to transport seed of the plant into Rochdale canal. Standard good industry working practice methods have been integrated into the precautionary working method statement for the scheme to prevent the spread of Himalayan balsam on site and off-site. These are unrelated to the presence of Rochdale Canal SAC but have been incorporated for compliance with the Country and Wildlife Act 1981 (as amended) to avoid the spread of the plant. These measures significantly reduce the risk of activities causing the spread of Himalayan balsam including toward Rochdale Canal SAC as well as other off-site locations. **No conceivable pathway to likely significant effect.**
		ROC0094 The field surveys identified the presence of Himalayan balsam on site (NLG, 2020) located 0.2km west of the SAC. As stated above it is highly unlikely that works will result in the spread of this species. **No conceivable pathway to likely significant effect.**

Is the potential scale or magnitude of any effect likely to be significant?	
a) Alone	**No.** In all cases, the qualifying feature will not be affected by the proposed works as it is not present within or within influencing distance of the works area.
b) In combination	Castleton WwTW and ROC0094 Combined Sewer Overflow are two projects that are being considered together in this HRA to account for potential in-combination effects due to their proximity to each other and Rochdale SAC. The assessment has identified no conceivable pathway to likely significant effects at Rochdale Canal SAC. If there is no effect at all, then there can be no in combination effect. Effect pathways that are considered to have negligible effects would have such small effect that there would be no

	possibility to contribute significantly to any in combination effects from other plans and projects.	
Conclusion – is the proposal likely to have a significant effect 'alone and/or in combination' on a European site?	**The proposed works will not have a significant effect on Rochdale Canal SAC either alone or in combination with other project/plans.**	
C2V+ Ecologist:	Leila Payne Associate Director of Ecology Leila.payne@jacobs.com	Date: 23rd November 2020
Natural England comment on assessment:	n/a	
Name of Natural England Officer:	n/a	

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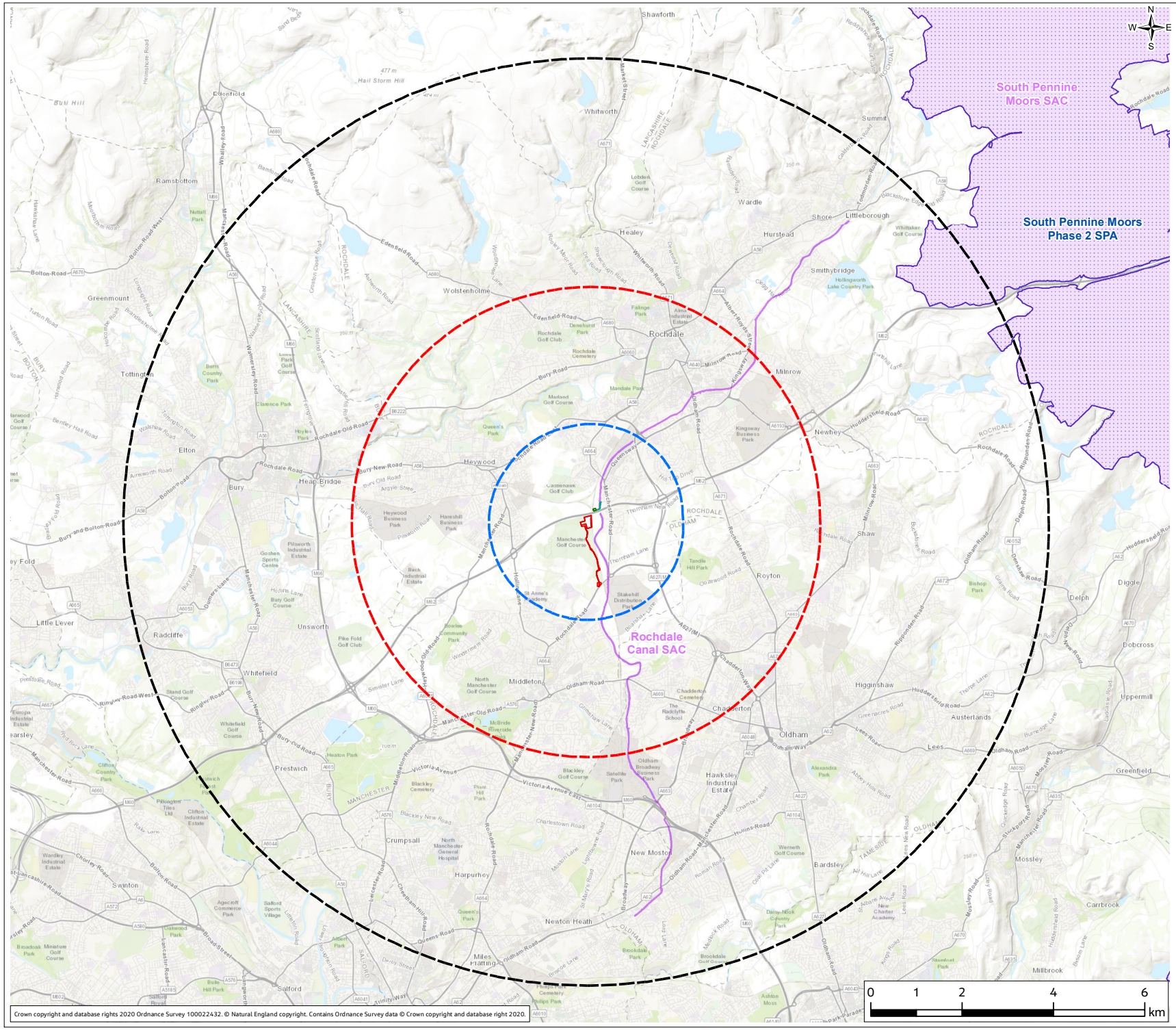
APPENDIX A: FIGURES

Figure 1 Castleton WwTW and ROC0094 Combined Sewer Overflow Habitats Regulations Screening Results – 30km Buffer

Figure 2 Castleton WwTW and ROC0094 Combined Sewer Overflow Habitats Regulations Screening Results – 2km Buffer

FIGURE 1



Legend

- ROC0094 Area of Proposed Development
- ROC0094 Access Track
- Castleton WwTW Area of Proposed Development
- 2km Buffer
- 5km Buffer
- 10km Buffer
- Special Areas of Conservation (SAC)
- Special Protection Areas (SPA)

Note: Buffers are of the Castleton WwTW Area of Proposed Development



Rev.	Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd
0	NOV 20	Initial Issue	RR	NW	LP	RC

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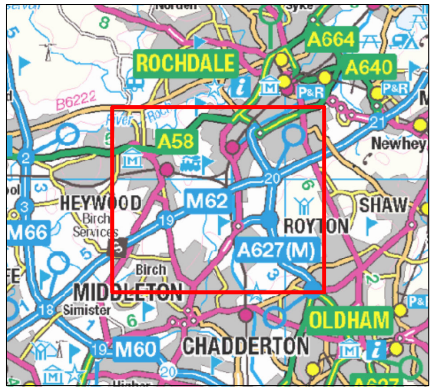
FIGURE 2

Legend

- ROC0094 Area of Proposed Development
- ROC0094 Access Track
- Castleton WwTW Area of Proposed Development
- 2km Buffer of Castleton WwTW Area of Proposed Development
- Special Areas of Conservation (SAC)



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0 0.25 0.5 1 km