

Northern Gateway (JPA1.1)

Outline Planning Application

Outline Drainage Strategy



JPA1.1 (Northern Gateway)

784-B048805

Outline Planning Application



JPA 1.1 Outline Drainage Strategy Report

Northern Gateway Development Vehicle LLP

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1.0 INTRODUCTION

1.1 BACKGROUND

This Outline Drainage Strategy Report has been prepared by Tetra Tech Ltd on behalf of the Northern Gateway Development Vehicle LLP ('the Applicant' or 'NGDV'). It is submitted in respect of a cross-boundary application for outline planning permission (all matters reserved) ('the Application') for a national-scale employment development on allocated land at Heywood/Pilsworth (Northern Gateway) ('the Application Site') (edged red in **Figure 1.1.1**).

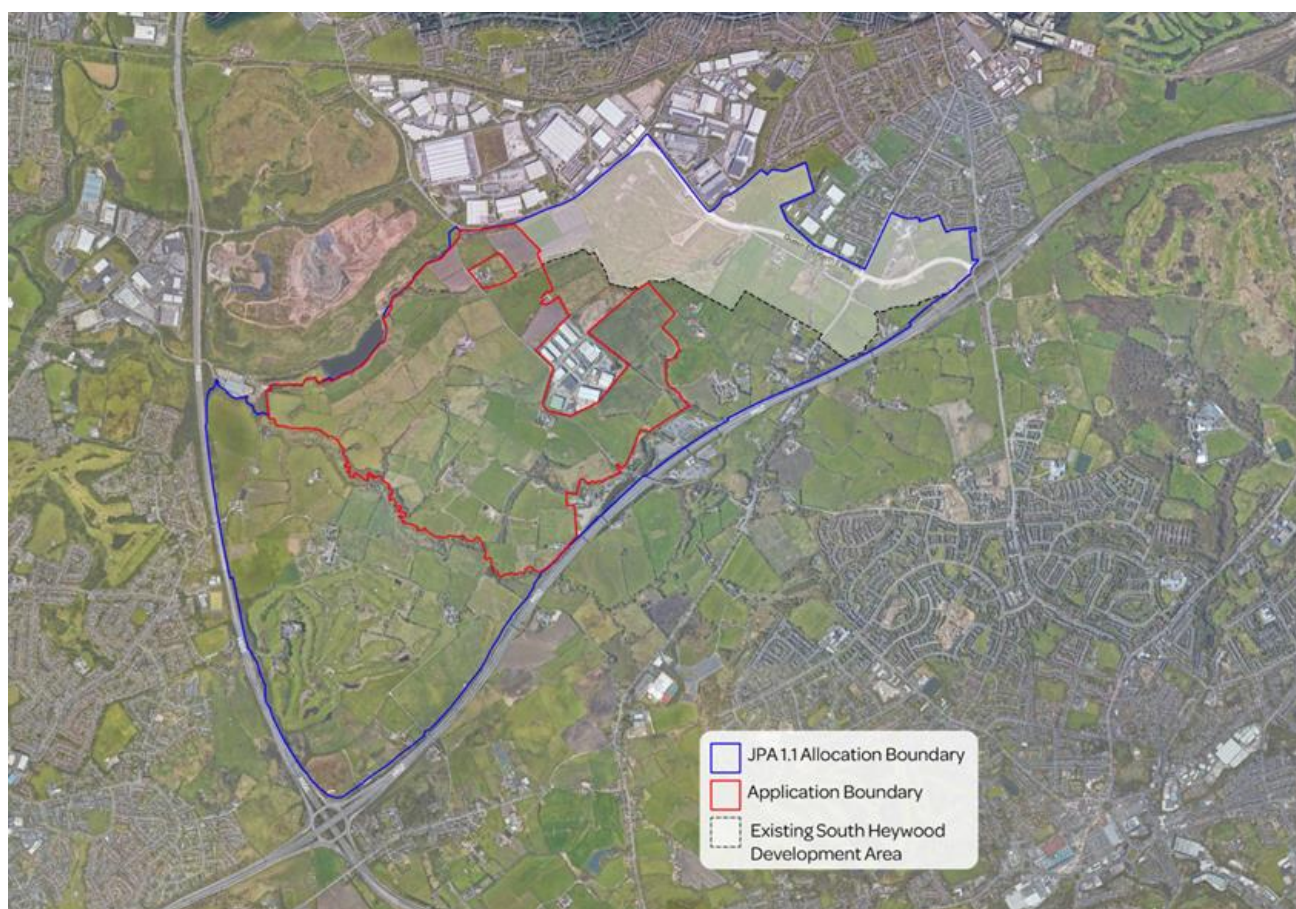


Figure 1.1.1 – JPA 1.1 Allocation Site boundary

The Application Site extends to 209.8 hectares (ha) of land and straddles the administrative boundaries of Bury Council ('BC') (120.15 ha) and Rochdale Borough Council ('RBC') (89.65 ha) (collectively referred to as 'the Councils'). The Application Site comprises predominantly undeveloped agricultural land, with scattered existing buildings and hardstandings. Existing access roads within the Application Site include Castle Road, Moss Hall Road, Pilsworth Road and Whittle Lane. The Application Site is bounded to the north by Brightley Brook, Pilsworth Fisheries, Pilsworth Road and Heywood Distribution Park; to the west by Whittle Brook; to the east by agricultural fields; and to the south by the M62 corridor, including Moto Birch Services (Eastbound) and Whittle Fold Farm. The Application Site wraps around Birch Industrial Park, as well as a series of existing properties to the east of Moss Hall Road.

Though not directly abutting, the Application Site is to the west of the South Heywood Masterplan Area (SHMA) (shown shaded in **Figure 1.1.1**), a mixed-use scheme which includes up to 175,460 sqm of employment floorspace (Use Classes B2 and B8), up to 1,000 new homes, a new local centre and primary school, plus associated landscaping, public open space, sports pitches, drainage, ecological enhancements, footpath linkages and ancillary infrastructure. It also includes the recently completed 2.2 km link road, Queen Elizabeth II Way, which connects Junction 19 of the M62 motorway to existing employment areas off Pilsworth Road. The SHMA benefits from hybrid planning permission (RBC refs. 16/01399/HYBR and 22/01569/OUT) and is currently under construction.

Land at Heywood/Pilsworth is allocated under Policy JP Allocation 1.1 of the adopted Places for Everyone Joint Development Plan ('PfE') for a nationally significant employment development, capable of delivering around 1.2 million square metres ('sqm') of industrial and warehousing floorspace, around 1,200 homes, a primary school and an appropriate range of supporting and ancillary services and facilities, such as a new local centre, hotel, leisure and conference facilities ('JPA1.1 Allocation Site') (edged blue in **Figure 1.1.1**). The JPA1.1 Allocation Site is strategically located within the North-East Growth Corridor, a key focus for employment and housing growth in Greater Manchester. Encompassing approximately 634 hectares ('ha') of land across the administrative boundaries of Bury and Rochdale, it is one of the largest employment-focused allocations in PfE. It is bound by Pilsworth and the M66 motorway to the west, and areas of Heywood to the north and east. It currently consists of agricultural fields (greenfield), Birch Industrial Park, and associated access roads, and several designated main rivers.

The Application Site represents a major part of the JPA1.1 Allocation Site and the Application seeks approval for up to 600,000 sqm of new employment floorspace and up to 5,000 sqm of supporting uses, alongside associated demolition works, landscaping, drainage, ecological enhancements, highway works, cycleway and footpath linkages and other ancillary infrastructure ('the Proposed Scheme'). Full details of the Proposed Scheme are set out in the Design & Access Statement, Design Code and Planning Statement, prepared by Turley.

The contents of this Outline Drainage Strategy Report pertain only to the land area within the Application Site.

1.2 STATEMENT OF INTENT

This Outline Drainage Strategy report outlines the main principles of the proposed drainage strategy and adoptions strategy for the Proposed Scheme. It provides an overview of the existing drainage infrastructure in the vicinity of the Application Site and sets out the principles of the development proposals by setting a high-level framework and strategy for the phased development and build out of the Proposed Scheme.

2.0 PLANNING POLICY

2.1 PLANNING POLICY COMPLIANCE

The Proposed Scheme shall comply with all planning policy relevant to the Proposed Scheme, which includes but is not limited to the following:

- The National Planning Policy Framework ('the NPPF').
- Planning Practice Guidance ('PPG'), including:
 - Biodiversity Net Gain (May 2024)
 - Climate Change (March 2019)
 - Environmental Impact Assessment (May 2020)
 - Flood Risk & Coastal Change (August 2022)
 - Natural Environment (February 2024)
 - Water supply, wastewater and water quality (July 2019)
- Adopted Supplementary Planning Documents ('SPD') and Guidance ('SPG'):
- Within Bury this comprises:
 - SPG2: Wildlife links and corridors (June 2001)
 - SPG16: Design and Layout of New Development in Bury (October 2008)
- Within Rochdale this comprises:
 - Biodiversity and Development SPD (January 2008, updated February 2017)
 - Climate Change Adaptation SPD (June 2012)
 - Heywood Green Infrastructure Action Plan SPD (September 2010)
 - Urban Design Guide SPD (September 2007)
 - Public Realm Design Guide SPD (September 2007)
- The Northern Gateway Development Framework (NGDF) SPD (March 2025)
- The emerging Local Plans.

Further information pertaining to relevant planning policies and supplementary documents can be found in the Planning Statement by Turley.

2.2 NORTH WEST SUDS PRO-FORMA

A 'sustainable drainage systems' (SuDS) pro-forma has been created for the North West which encourages and provides guidance for the creation of high-quality SuDS by allowing water quality, water quantity, amenity and biodiversity to be considered during the design stage. This will then allow the features to be fully integrated into the surface water management and development design process. The pro-forma supports and encourages SuDS design in line with CIRIA 753 and the Design Construction Guidance (DCG) for sewers (Codes for Adoption).

The Proposed Scheme is currently at outline planning stage and all matters (layout, landscape, means of access, appearance, and scale) are reserved for future approval. Therefore, this Outline Drainage Strategy Report is based on the Parameters Plans submitted with the application and only certain elements of the pro-forma can currently be completed. An updated proforma will be completed at reserved matters stage once the detailed drainage strategy has been developed.

A copy of the SuDS pro-forma is appended to the end of this report (Appendix A).

3.0 EXISTING DRAINAGE INFRASTRUCTURE

3.1 SURFACE WATER

Public sewer records from United Utilities (UU) did not identify any existing surface sewers within the boundary for the Application Site. The nearest surface water public sewers are in Heywood and are remote from the Application Site.

There is an unnamed watercourse flowing east to west along the northern boundary of the South Heywood Masterplan Area (SHMA), which discharges into Brightley Brook, an Environment Agency (EA) main river. A second EA main river, Whittle Brook, flows from east to west along the western boundary of the Application Site. A third EA main river, Castle Brook, flows from south to north, west of the Application Site and within the JPA 1.1 Allocation Site. All three rivers converge to the northwest corner of the Application Site into Hollins Brook, which ultimately joins into the River Roch, to the west of the M66.

There are a number of unnamed watercourses, tributaries and ditches across the Application Site that drain runoff from the land and farm buildings into the nearby watercourses and rivers.

Birch Business Park, located in the centre of the JPA 1.1 Allocation Site but outside of the Application Site, has a self-contained surface water system and attenuation pond which is privately maintained. The business park has a surface water outfall connection to a nearby, unnamed watercourse which ultimately forms a tributary to Whittle Brook.

3.2 FOUL WATER

Sewer records provided by UU did not identify any foul sewers within the Application Site or the wider JPA1.1 Allocation Site. The nearest foul sewers are believed to be within the settlement of Heywood to the northeast. The nearest public wastewater treatment works (WWTW) is the Bury Wastewater Treatment works, approximately 4.5km to the west of the Application Site.

Birch Business Park, located in the centre of the JPA1.1 Allocation Site but outside of the Application Site, has a self-contained foul water and associated treatment system. The business park has an outfall for treated effluent into a nearby, unnamed watercourse which ultimately forms a tributary to Whittle Brook.

The UU sewer records identify an existing 225mm diameter combined water sewer outside of the Application Site, to the northwest corner of the JPA1.1 Allocation Site. The sewer runs from east to west along Pilsworth Road beneath the M66 intersection, increasing into a 300mm diameter sewer. This outfalls into a 1350mm diameter sewer within Pilsworth Way which flows northeast to southwest. It is anticipated this sewer ultimately outfalls to the Bury WWTW.

3.3 HIGHWAYS DRAINAGE

It is anticipated that there is an existing highways drainage system within the Application Site, due to the presence of existing gullies along Moss Hall Road and Whittle Lane. It is assumed this local highway drainage system discharges surface water run-off, collected from the highway, into nearby watercourses and/or rivers, including an outfall into Brightley Brook.

4.0 DRAINAGE INFRASTRUCTURE PROPOSALS

The foul and surface water drainage networks will consider the phasing strategy for the buildout of the Proposed Scheme, and as the design develops there may be a requirement to utilise temporary drainage features / outfalls to facilitate the phasing arrangements.

The objective is to create a clear route for the integrated features in the drainage design to obtain technical approval and ultimately adoption from the relevant adopting authority.

4.1 SURFACE WATER

4.1.1 Strategy proposals

The surface water strategy for the Proposed Scheme is being developed in accordance with the requirements of the National Planning Policy Framework (NPPF) and will promote the use of SuDS throughout the scheme (refer to Section 4.2).

There will be multiple points of outfall for the surface water system through the Application Site due to the scale of the Proposed Scheme and the complexity of the catchment analysis. Where feasible, the volumes of water being discharged will be reduced by maximising infiltration to the ground. Infiltration opportunities will be assessed in the context of the significant, site-wide ground reprofiling which is required to achieve the required developable areas. Any infiltration testing will be confirmed by a series of soakaway tests in accordance with BRE 365.

A key objective of the surface water strategy is to avoid the need for permanent pumping stations across the Proposed Scheme. The proximity of the Application Site to numerous watercourses combined with a strategic plan for levels and plateau design should prohibit the requirement for pumping of surface water runoff.

A strategy to control flood risk to and from the Proposed Scheme will be agreed with the relevant stakeholders including the Environment Agency, United Utilities, and the Bury and Rochdale Lead Local Flood Authorities.

4.1.2 Discharge proposals

The disposal of surface water shall be designed in accordance with the NPPF guidance, which sets out a preferred hierarchy for discharge. As such, the discharge should be considered to one of the following, listed in order of priority:

1. Into the ground (via infiltration);
2. To a surface water body;
3. To a surface water sewer, highway drain, or another drainage system;
4. To a combined water sewer.

Infiltration

It is envisaged discharge into the ground via infiltration as the primary method will be unfeasible due to various reasons. The British Geological Survey (BGS) borehole records obtained for the desktop Geo-environmental study, have indicated the Application Site is underlain by at least 6 metres of clay; this will need to be confirmed at a later date with site-specific boreholes. There are also existing mine working areas within the Application Site, and alongside the proposed reprofiling of the ground levels required to construct the Proposed Scheme, the ability to infiltrate will need to be confirmed at reserved matters stage.

Discharge to a surface water body

There are various tributaries and watercourses within the Application Site which link into the EA-designated main rivers: Brightley Brook, Whittle Brook and Castle Brook. In line with the drainage hierarchy, it is therefore recommended that surface water is discharged into these watercourses at rates equivalent to the pre-development greenfield runoff rates.

Discharge into a sewer

In accordance with the drainage discharge hierarchy, there is potential to discharge into the numerous on-site watercourses therefore an outfall into a sewer network must be discounted. Sewer / drainage networks will be utilised to ultimately convey and outfall surface water runoff from the Proposed Scheme to the watercourses.

4.1.3 Attenuation requirements

The Proposed Scheme will increase the rates and volumes of run-off from to the surrounding main rivers, watercourses and tributaries within the Application Site. This will be mitigated by various attenuation and SuDS features across the Proposed Scheme and it is proposed that post-development rates of run-off will be limited to pre-development greenfield runoff rates.

Attenuation requirements will consider the volume of water generated by the rainfall events up to and including the 100-year storm, including an allowance of 45% climate change. Due to the proposed usage of the Application Site, urban creep will not be considered in the design. The final amount of attenuation required will be determined at reserved matters stage.

4.1.4 Design standards

The primary surface water system will be designed in accordance with Codes for Adoption and to adoptable standards to allow maintenance responsibilities to transfer to United Utilities or another approved authority at an appropriate point in the buildout of the Proposed Scheme. These will be kept in the main carriageways with accesses where possible, with any adoptable pump stations being accessible from the public road networks.

All private surface water drains serving individual development plots will be designed in accordance with BS EN 752 and Part H of the Building Regulations 2010. A private manhole will be provided at the boundary between public and private land to act as a demarcation chamber.

4.2 SUSTAINABLE DRAINAGE SYSTEMS

4.2.1 SuDS strategy

Sustainable drainage systems (SuDS) will be an integral part of the Proposed Scheme and is a key requirement as set out in the NPPF. The overarching principles of SuDS are to limit excessive discharge of surface water to watercourses from a development, as far as is reasonable, whilst seeking to assist in controlling pollution. The following is an illustration of these principles and how they may be applied to a development via a SuDS management train.

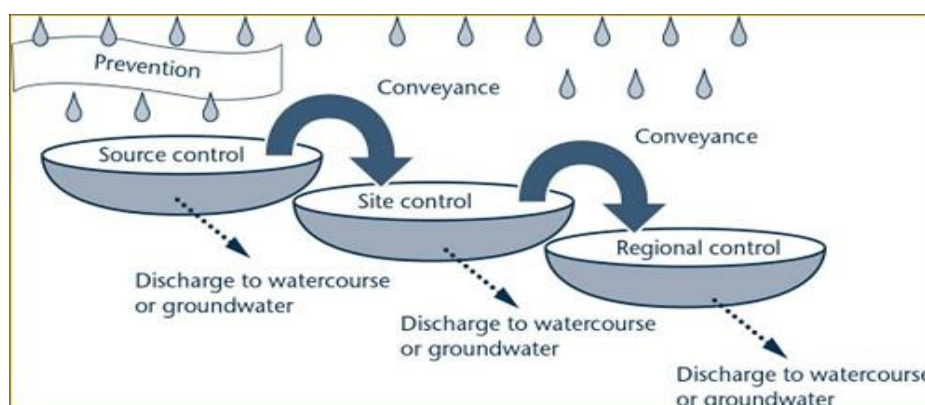


Figure 4.2.1.1 - SuDS Principles / Management Train

Through the retention of the main rivers, the surface water drainage strategy will aim to provide a corridor of green / blue infrastructure within the Application Site with the principal SuDS attenuation features being located close to the river corridor but outside the extent of the current and future flood zones. The proposed development plots will provide a suitable level of water quantity and quality management, the principles of which will be agreed with the contributing statutory undertakers.

The design of SuDS features across the Proposed Scheme will be in accordance with CIRIA 753 (The SuDS Manual) for both hydraulic capacity and pollution control. Where feasible the SuDS design will utilise infiltration techniques in order to limit peak flow rates and volumes to the receiving water bodies. Where applicable the design will consider but not be limited to the following:

Source Control

- Water butts, green roofs, filter drains, pervious surfaces, swales, rainwater harvesting

Site Control

- Swales, ponds, wetlands, infiltration devices

Regional Control

- Basins, ponds and wetlands

Table 4.2.1.2 – SuDS selection factors

Factor	Overview of the Northern Gateway JPA1.1 Application Site
Type of development	• Proposed Scheme comprises a national-scale employment development, including logistics, warehousing, industrial and manufacturing uses, with a range of other supporting uses (as defined within the Uses Schedule submitted with the Application).

	The Proposed Scheme will also include significant amount of greenspace required to take out the relative level differences between development plateaus and to allow substantial area for SuDS attenuation features.
Size and density of development	- The Application Site extends to 209.8ha. - The Proposed Scheme will deliver up to 600,000 sqm of employment floorspace and up to 5,000 sqm of supporting uses. - At present the Proposed Scheme is predicted to be constructed in a phased programme over 20-25 years.
Location of the development	- The Application Site is on the western foothills of the Pennines and located to the northeast of the Simister Interchange (M62/M66 junction) - The Application Site topography varies but generally there is a fall of 1:25 to 1:40 along at least one plane across the land. The level difference between the highest elevation of the Application Site and the main river normal water level is approximately 24-25m. - The Application Site comprises predominantly of agricultural land. - It is considered that the infiltration properties of the ground are feasible in localised areas.

Table 4.2.1.3 - Source control methods

Type of SuDS	Description	Overview of the Northern Gateway JPA1.1 Application Site
Water butts	Small storage tanks on each individual plot	This should be appropriate for the Application Site (individual end users only).
Grey water recycling	Water collected from domestic use and reused within a commercial property	This should be appropriate for the Application Site but is dependent on end user requirements.
Rainwater harvesting	Recycling of water from roofs and impermeable areas	This should be appropriate for the Application Site but is dependent on end user requirements.
Green roofs	Vegetated roofs that reduce run off and remove pollutants	This should be appropriate for the Application Site but is dependent on end user requirements.
Filter drains	Linear drains or trenches filled with granular material that allow infiltration to the surrounding ground	On this site permeability is variable but could be feasible in localised areas. Therefore, this should be considered appropriate depending on localised ground conditions.
Pervious surfaces	Surfaces that allow surface water inflow into underlying surfaces	On this site permeability is variable but could be feasible in localised areas. Therefore, this should be considered appropriate depending on localised ground conditions. The use of pervious surfaces with underlying imported storage medium (graded stone or similar) may be of use in larger areas of surfacing.

Swales	Vegetated channels to convey, store and treat run off.	On this site permeability is variable but could be feasible in localised areas. Therefore, this should be considered appropriate depending on localised ground conditions. Where ground is unsuitable for infiltration swales should be considered for treatment, storage and conveyance.
Shallow basins/ponds	Shallow areas of open space that temporarily hold water and collect silt	On this site permeability is variable but could be feasible in localised areas. Therefore, this should be considered appropriate depending on localised ground conditions. Where ground is unsuitable for infiltration ponds and/or basins should be considered for treatment and storage.

Table 4.2.1.4 - Site control methods

Type of SuDS	Description	Applicability to the Northern Gateway JPA 1.1 Application Site
Swales	Vegetated channels to convey, store and treat run off.	On this site permeability is variable but could be feasible in localised areas. Therefore, this should be considered appropriate depending on localised ground conditions. Where ground is unsuitable for infiltration swales should be considered for treatment, storage and conveyance.
Shallow basins/ponds/wetlands	Shallow areas of public open space that temporarily hold water and collect silt	On this site permeability is variable but could be feasible in localised areas. Therefore, this should be considered appropriate depending on localised ground conditions. Where ground is unsuitable for infiltration ponds and/or basins should be considered for treatment and storage. The use of public open spaces may be appropriate, particularly in joint consideration with the envisaged watercourses.
Infiltration devices	Generally granular trenches or soakaways that store water and allow infiltration to the surrounding ground	On this site permeability is variable but could be feasible in localised areas. Therefore, this should be considered appropriate depending on localised ground conditions.

Table 4.2.1.5 - Regional control methods

Type of SuDS	Description	Applicability to the Northern Gateway JPA 1.1 Application Site
Basins	Shallow areas of open space that temporarily hold water and collect silt	On this site permeability is variable but could be feasible in localised areas. Therefore, this should be considered appropriate depending on localised ground conditions.

		Where ground is unsuitable for infiltration ponds and/or basins should be considered for treatment and storage. The use of public open spaces may be appropriate, particularly in joint consideration with the envisaged watercourses.
Ponds and wetlands	Areas of open space that collect, hold and restrict water from a large area	On this site permeability is variable but could be feasible in localised areas. Therefore, this should be considered appropriate depending on localised ground conditions. Where ground is unsuitable for infiltration ponds and/or basins should be considered for treatment and storage. The use of public open spaces may be appropriate, particularly in joint consideration with the envisaged watercourses.

4.2.2 The four pillars of SuDS

In accordance with CIRIA 753, the overarching principle of SuDS design is that surface water runoff should be managed for maximum benefit. The SuDS features will aim to provide benefits in line with the four pillars of SuDS design:

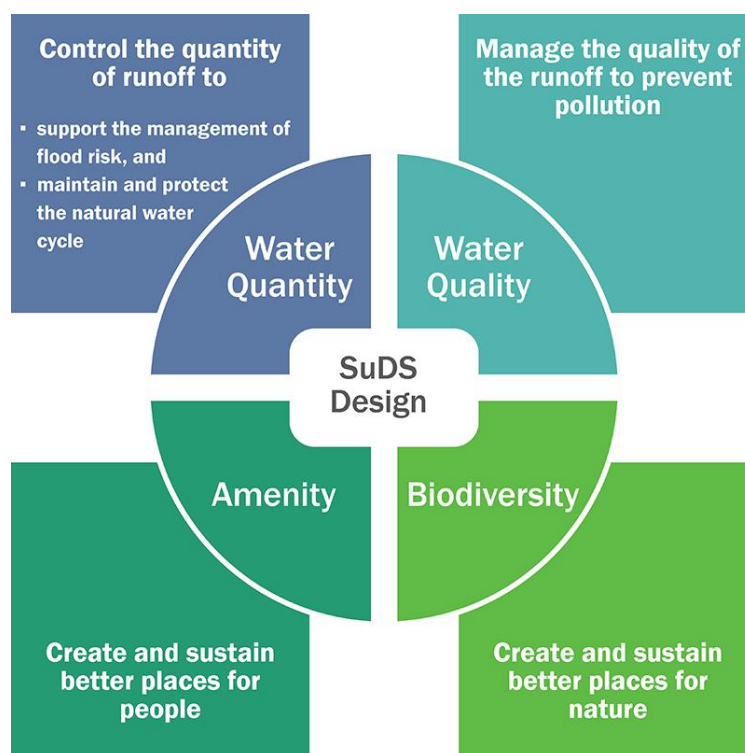


Figure 4.2.2.1 – The four pillars of SuDS design

4.2.2.1 Water quantity

The design objective is to control the quantity of runoff to support the management of flood risk and maintain and protect the natural water cycle. This is achieved by controlling:

- How fast the runoff is discharged from the Application Site (i.e. the peak runoff rate), and;
- How much runoff is discharged from the Application Site (i.e. the runoff volume).

The Proposed Scheme will seek to achieve a post-development discharge rate which is equivalent to pre-development greenfield situation, in accordance with the local planning policies and the standards S2 and S4 in the Defra document – ‘Sustainable Drainage Systems: Non-statutory technical standards for sustainable drainage systems’.

The Application Site is considered a greenfield site and, as such, the peak runoff rate from the Proposed Scheme to any surface water body for the 1-in-1-year rainfall event and the 1-in-100-year rainfall event should never exceed the peak greenfield runoff rate for the same event.

Where reasonably practical, for greenfield developments, the post-development runoff volume to a surface water body for the 1-in-100-year, 6-hour rainfall event should never exceed the pre-development greenfield runoff volume for the same event. However, due to ground conditions and the overall size of the catchment, it may not be reasonably practicable to achieve this. In this scenario, the volume of runoff to a surface water body must not adversely affect flood risk. Hydraulic modelling of the watercourses Brightley Brook, Whittle Brook and Castle Brook has been developed to demonstrate the post-development flood risk effects to the receiving water bodies.

Attenuation storage will be provided both on a plot and regional level with discharge rates assigned to plot areas. Regional SuDS attenuation features will be provided adjacent to the existing watercourses to create an integrated green/blue corridor.

These aspects will reduce and/or control any flooding caused by the Proposed Scheme. The management of this objective can also contribute to the design objectives of the other three pillars.

4.2.2.2 Water quality

The design objective is to manage the quality of runoff to prevent pollution. Pollution from widespread multiple sources can have a significant impact on the runoff from the Application Site and compromise groundwater. Therefore, it is important to manage the quality of runoff to support and protect the natural environment effectively. The design of the SuDS is proposed to follow the below management train:

1. To manage the surface water runoff close to the source;
2. Treat the surface water runoff on the surface;
3. Treat surface water runoff to remove a range of contaminants;
4. Minimise the risk of sediment remobilisation;
5. Minimise the impact from accidental spills.

The provision of SuDS from plot to river will create a treatment train for the runoff in accordance with The SuDS Manual. Assessment of the catchments will identify the land use, and the levels of pollution anticipated. Pollution mitigation measures will be provided to treat the runoff to acceptable levels prior to discharge to the watercourses. The treatment options vary across the Proposed Scheme but will take the form of the following:

- Permeable paving
- Swales and bioretention areas
- Filter drains
- Basins
- Ponds/wetlands

-
- Other proprietary products such as interceptors and downstream defender

4.2.2.3 Amenity

The SuDS design should aim to create and sustain better places for people. Through the retention of the main rivers, a corridor of green / blue infrastructure is proposed to deliver attractive, pleasant and useful environments that support and enhance the local communities. The incorporation of these features into the urban landscape can help to enrich the aesthetic and recreational value, promoting health and well-being and supporting green infrastructure.

The creation of a blue/green corridor through the river valleys will be integrated with walkways to allow pedestrians access for amenity value. Routes will be allowed around the SuDS features for ramblers and pedestrians to enjoy the space and the connection to nature. Currently the river valleys through the JPA 1.1 Allocation Site (including the Application Site) are relatively inaccessible to the public but the Proposed Scheme proposes to open this space to create amenity features.

4.2.2.4 Biodiversity

The SuDS design should aim to create and sustain better places for nature. In accordance with the UK government objective (Defra, 2011), the implementation of SuDS can help to “connect people with nature”. Creating new habitats, rehabilitating and / or enhancing existing habitats through SuDS design can provide benefits beyond those from planting to the performance of the drainage system. With good design, SuDS can provide shelter, food and foraging and breeding opportunities for a variety of wildlife species, creating greater habitat and wildlife connectivity.

The creation of wetlands and ponds will provide enhanced habitat for nature and wildlife. An integrated landscape plan will be developed to coordinate with the SuDS proposals to maximise the space for habitat creation.

4.2.3 SuDS design standards

The design standards for all SuDS features across the Proposed Scheme will be in accordance with CIRIA 753 (The SuDS Manual) and any requirements of the adopting authority.

4.3 FOUL WATER

4.3.1 Strategy proposals

Historic consultation with UU determined there may be public sewers with sufficient capacity available for connection from the Application Site. Two agreed points of connection have since been made available by UU. It is proposed for foul water from the initial phases of the Proposed Scheme to outfall to the existing public sewers via pumping mains in Hareshill Road, north of the SHMA. The consented SHMA development is also planned to discharge to these UU sewers. Future phases of the Proposed Scheme are planned to discharge to the west into the 1350mm diameter sewer in Pilsworth Way, located west of the Application Site which will ultimately discharge into the existing Bury Wastewater Treatment Works west of Unsworth.

At this stage it is anticipated that primary pumping stations will be required to achieve the connection points that are agreed in principle with UU. Further pumping stations will be required throughout the Proposed Scheme to facilitate the phasing strategy and to limit the maximum depth of the foul sewer system to an acceptable design standard for UU. This will require full engagement with UU to establish the principles of the developing foul water strategy.

The hydraulic design will follow the foul drainage requirements in accordance with clause B3 of the '*Design and Construction Guidance for foul and surface water sewers offered for adoption*'. This will consider the peak design flow rates, and the design flows for industrial and commercial developments which can contain two elements: domestic flows and trade effluent flow. The total peak design flow is the sum of the domestic design flow and the trade effluent design flow.

Sufficient emergency storage will also be provided in the design in accordance with the requirements of the adopting sewerage authority.

4.3.2 Off-site works

The Proposed Scheme will deliver foul infrastructure for its needs within the Application Site. Offsite works will be required by either UU via a sewer requisition under a Section 98 agreement, or the NGDV to deliver the connecting rising mains to Hareshill Road and Bury WWTW.

Further consultation was held with UU in December 2024 and opened the opportunity for potential outfalls into the existing sewers in Unsworth, west of the JPA 1.1 Allocation Site. This will require further investigation and confirmation from UU.

4.3.3 Design standards

The primary foul water system will be designed in accordance with Codes for Adoption and to adoptable standards to allow maintenance responsibilities to transfer to UU or another approved authority at an appropriate point in the buildout of the Proposed Scheme.

All private foul drains serving the individual development plots will be designed in accordance with BS EN 752 and Part H of the Building Regulations 2010. A private manhole will be provided at the boundary between public and private land to act as a demarcation chamber.

5.0 ADOPTIONS STRATEGY

5.1 SURFACE WATER DRAINAGE

5.1.1 Drainage network

Primary surface water drain runs that serve two or more curtilages will either be offered for adoption under a Section (S)104 agreement under the Water Industry Act 1991 or will be maintained by a private management company specifically established to serve the Proposed Scheme. Primary drain runs will be kept in the main carriageways and access roads with any required adoptable pumping stations being accessible from the public road networks.

UU have confirmed road gullies collecting highways runoff can discharge into new S104 sewers, therefore a separate dedicated highways drainage network will not be required.

If the drainage network will be privately maintained by a third-party management company, a dedicated services corridor will need to be incorporated into the detailed layout at reserved matters stage as these will be unable to sit beneath the primary adoptable highways infrastructure. Approval would be required by the Highways Authority to discharge the highways runoff into the private system, or a dedicated highways drainage network will be required.

5.1.2 Sustainable drainage systems

Early engagement with the EA and UU has identified large-scale attenuation features will be classed as reservoirs. It has since been established during continued consultations that attenuation features greater than 10,000m³ will be classed as reservoirs and will be unadoptable by UU. They have further confirmed any upstream drainage networks discharging into the large-scale features will also be unadoptable, through their 'all or nothing' adoptions approach.

Following this, a decision has been made to limit the size of region attenuation features to a maximum of 10,000m³ to enable adoption of these features, and subsequent adoption of upstream drainage networks. Dialogue will be maintained with UU as the detailed design of the Proposed Scheme (i.e. at reserved matters stage) develops to make sure there is a clear route for future drainage proposals to be offered for adoption.

5.1.3 Alternative adoption route

As the detailed design of the Proposed Scheme develops, the surface water design may need to consider the integration of large-scale attenuation features to provide adequate water quantity and quality controls. Therefore, as an alternative to UU and a private management company, there may be a need to consider routes for adoption via New Appointments and Variations (NAV), such as Independent Water Networks (IWNL) and Icosa Water.

5.2 FOUL WATER DRAINAGE

5.2.1 Drainage network

All foul drainage serving as 'primary infrastructure' and serving two or more curtilages will be offered for adoption under a S104 agreement under the Water Industry Act 1991 or will be maintained by a private management company specifically established to serve the Proposed Scheme. Primary drain runs will be kept in the main carriageway and access roads with the required adoptable pumping stations being accessible from the public road networks.

If the drainage network will be privately maintained by a third-party management company, a dedicated services corridor will need to be incorporated into the masterplan design as these will not sit beneath the primary adoptable highways infrastructure.

6.0 CONCLUSION

This Outline Drainage Strategy report highlights the outline framework / drainage strategy principles for the Proposed Scheme. The detailed design and layout of the Proposed Scheme, including the detailed drainage design, will be developed at reserved matters stage which will be compliant with the outline framework / strategy proposals as set out in this document.

APPENDICES

APPENDIX A – NORTH WEST SUDS PRO-FORMA

NORTH WEST SuDS PRO-FORMA

This pro-forma is a requirement for any planning application for major development.

It supports applicants in summarising and confirming how surface water from a development will be managed sustainably under current and future conditions.

Your sustainable drainage system should be designed in accordance with [CIRIA The SuDS Manual C753](#) and any necessary adoption standards.

HOW TO COMPLETE

Blue Box	Instruction/ Question
Orange Box	Evidence Required
White Box	To be completed by Developer / Consultant

1. Complete ALL white boxes
2. Submit this pro-forma to the Local Planning Authority, along with:
 - Sustainable Drainage Strategy
 - Site Specific Flood Risk Assessment (if required)
 - Minimum supporting evidence, as indicated in orange boxes of this pro-forma.

GUIDANCE TO SUPPORT YOU

The pro-forma should be completed in conjunction with ‘Completing your SuDS Pro Forma Guide.’

The pro-forma can be completed using freely available tools such as [Tools for Sustainable Drainage Systems](#) or appropriate industry standard surface water management design software.

SECTION 1. APPLICATION & DEVELOPMENT DETAILS

Planning Application Reference <i>(if available)</i>		
State type of planning application <i>i.e. Pre-application, Outline, Full, Hybrid, Reserved Matters*</i> *Information only required if drainage is to be considered as part of reserved matters application		Parameters-based outline planning application (all matters reserved)
Developer(s) Name:		Northern Gateway Development Vehicle LLP
Consultant(s) Name:		Tetra Tech Ltd
Development Address <i>(including postcode)</i>		Land at Heywood/Pilsworth (Northern Gateway JPA1.1), Moss Hall Road, Bury & Rochdale, Greater Manchester, OL10 2RE
Development Grid Reference <i>(Eastings/Northings)</i>		E(X): 383732, N(Y): 408505
Total Development Site Area (Ha)		209.8
Drained Area (Ha)* of Development		TBC
Please indicate the flood zone that your development is in. Tick all that apply. <i>Based on the Environment Agency Flood Map for Planning and the relevant Local Authority Strategic Flood Risk Assessment (to identify Flood Zones 3a/3b).</i>		Flood Zone 1 ☒ Flood Zone 2 ☒ Flood Zone 3a ☒ Flood Zone 3b ☐
What is the surface water risk of the site? Tick all that apply. <i>Based on the Environment Agency Surface Water Flood Map.</i>		High ☐ Medium ☐ Low ☒
Have you submitted a Site Specific Flood Risk Assessment (FRA)? <i>See separate guidance notes for clarification on when a FRA is required</i>		Yes ☒ No ☐
Have you submitted a Sustainable Drainage Strategy?		Yes ☒ No ☐
Does your drainage proposal provide multi-functional benefits via SuDS?		Yes ☒ No ☐
Expected Lifetime of Development <i>(years)</i> <i>Refer to Planning Practice Guidance "Flood Risk and Coastal Change" Paragraph 026</i>		50
Development Type:		State Proposed Number of Units
Greenfield Site Site is wholly undeveloped, and a new drainage system will be installed		☒ Up to 600,00 sqm of employment floorspace and up to 5,000 sqm supporting uses
Previously Developed/ Brownfield Site - Site is already developed, and the <u>entirety</u> of the existing surface water drainage system will be used to serve the new development (evidence must be provided to prove existing surface water drainage system is reusable); OR - Where records of the previously developed system are not available so that the hydraulic characteristics of the system cannot be determined or where the drainage system is not in reasonable working order i.e. broken, blocked or no longer operational for other reasons, then one of the approaches outlined in Section 24.5 of The SuDS Manual (C753) should be adopted.		☐
Please list any relevant document and or drawing numbers (including revision reference) to support your answers to Section 1.		B048805-TTE-11-XX-RP-C-400001-P01

SECTION 2: IMPERMEABLE AREA AND EXISTING DRAINAGE

	Existing (E)	Proposed (P)	Change (P – E)
State Impermeable Area (Ha)	TBC	To be confirmed at reserved matters stage	To be confirmed at reserved matters stage
Evidence Required: Plans showing development layout of site with existing and proposed impermeable areas.			☐

Are there existing sewers, watercourses, water bodies, highway drains, soakaways or filter drains on the site?	Yes ☒ No ☐ Don't Know ☐
Evidence Required: Plan(s) showing existing layout to include all: • Watercourses, open and culverted • Water bodies – ponds, swales etc. • Sewers, including manholes • Highway drains, include manholes, gullies etc. • Infiltration features - soakaways, filter drains etc.	☐

Drainage Design <i>Outline planning applications should be able to demonstrate that a suitable drainage system is achievable.</i> <i>All other type of planning application should provide full details or reference to previous planning application where drainage details have been submitted or approved.</i>		
Select which design approach you are taking to manage water quantity (refer to Section 3.3 SuDS Manual)		
Approach 1 – Volume control / Long Term Storage (Technical Standards S2/3, S4/5) <i>The attenuated runoff volume for the 1 in 100 year 6 hour event (plus climate change allowance) is limited to the greenfield runoff volume for the 1 in 100 year 6 hour event, with any additional runoff volume utilising long term storage and either infiltrated or released at 2 l/s/ha</i> <i>The discharge rate for the critical duration 1 in 1 year event is restricted to the 1 in 1 year greenfield runoff rate</i> <i>The discharge rate for the critical duration 1 in 100 year event (plus climate change allowance) is restricted to the 1 in 100 year greenfield runoff rate</i>	☐	
Approach 2 – Qbar (Technical Standards S6) <i>Justification has been provided that the provision of volume control/long term storage is not appropriate and an attenuation only approach is proposed. All events up to the critical duration 1 in 100 year event (plus climate change allowance) are limited to Qbar (1 in 2 year greenfield rate) or 2 l/s/ha, whichever is greater.</i>	☐	
Evidence Required: Plans showing: - Existing flow routes and flood risks - Modified flow routes - Contributing and impermeable areas - Current (if any) and proposed ‘source control’ and ‘management train’ locations of sustainable drainage components (C753 Chapter 7) - Details of drainage ownership - Details of exceedance routes (Technical Standards S9) - Topographic survey - Locations and number of existing and proposed discharge points <i>Note consideration should be given to manage surface water from both impermeable and permeable surfaces (including gardens and verges) likely to enter the drainage system.</i>		☐

Please list any relevant document and or drawing numbers (including revision reference) to support your answers to Section 2.	B048805-TTE-11-XX-RP-C-400001-P01
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SECTION 3: PEAK RUNOFF RATES – TECHNICAL STANDARDS S2, S3 AND S6 (UNLESS S1 APPLIES)

Rainfall Event	Existing Rate (l/s)	Greenfield Rate (l/s)	Proposed Rate (l/s) <i>Previously developed sites - In line with S3 should be equivalent to Greenfield runoff rates – discuss with LLFA if this is not achievable pre-application</i>
Qbar <i>(Approach 2)</i>	TBC	TBC	TBC at reserved matters stage
1 in 1 Year Event <i>(Approach 1)</i>	TBC	TBC	TBC at reserved matters stage
1 in 30 Year Event	TBC	TBC	TBC at reserved matters stage
1 in 100 Year Event* <i>(Approach 1)</i>	TBC	TBC	TBC at reserved matters stage

* Total discharge at the 1 in 100 year rate should be restricted to the greenfield runoff volume for the 1 in 100 Year 6 hour event with additional volumes (long-term storage volume) released at a rate no greater than 2 l/s/ha where infiltration is not possible. The climate change allowance should only be applied to the proposed rate and not the existing or greenfield rate.

Evidence Required:

Methodology used to calculate peak runoff rate clearly stated and justified.

☐

Impermeable areas plan, supported by topographical survey confirming positive drainage.

☐

Hydraulic calculations and details of software used.

☐

State the hydraulic method used in your calculations

(Refer to Table 24.1 of The SuDS Manual)

TBC at reserved matters stage

Please list any relevant document and or drawing numbers (including revision reference) to support your answers to Section 3.

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SECTION 4: DISCHARGE VOLUME – TECHNICAL STANDARDS S4, S5 AND S6 (UNLESS S1 APPLIES)

Rainfall Event	Existing Volume (m ³)	Greenfield Volume (m ³)	Proposed Volume (m ³)
1 in 100 Year 6 Hour Event <i>(Approach 1)</i>	TBC	TBC	TBC at reserved matters stage
Does the below statement apply to your development proposal? Long term storage is not achievable on this site and, in accordance with S6 of the Non Statutory Technical Standards for SuDS, the surface water discharge rates for events up to and including the 1 in 100 year critical event are limited to Qbar (Approach 2)			Yes ☐ No ☐
Evidence Required: Approach to managing the quantity of surface water leaving the site clearly stated and justified Methodology used to calculate discharge volume clearly stated and justified. Hydraulic calculations and details of software used.			☐ ☐ ☐

Please list any relevant document and or drawing numbers (including revision reference) to support your answers to Section 4.	B048805-TTE-11-XX-RP-C-400001-P01
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SECTION 5: STORAGE – TECHNICAL STANDARDS S7 AND S8

State climate change allowance used (%)	45%, in accordance with NPPF and LLFA guidance
State housing density (houses per ha)	N/A
State urban creep allowance used (%)	N/A
Evidence Required: State / used in appropriate industry standard surface water management design software.	☐

State storage volume required (m³) (excluding non-void spaces) <i>Must include an allowance for climate change and urban creep</i>	TBC
Have you incorporated interception into your design? <i>(Refer to Chapter 24 of The SuDS Manual C753)</i> <i>Where possible, infiltration or other techniques are to be used to try and achieve zero discharge to receiving waters for rainfall depths up to 5mm.</i>	Yes ☐ No ☐
Evidence Required: Drainage plans showing location of attenuation and all flow control devices and supporting calculations.	☐

Summarise how storage will be provided for 1 in 30 year event on site. <i>Storage must be designed to ensure that at no flooding occurs onsite in a 1 in 30 year event except in designed areas and no flooding occurs offsite in a 1 in 100 year (plus climate change allowance) event.</i>	30-year rainfall volumes proposed to be stored within the on-site drainage network.
Summarise how storage will be provided for 1 in 100 year (plus climate change) event on site. <i>Where storage above the 1 in 30 year rainfall event is provided in designated areas designed to accommodate excess surface water volumes, plans showing storage locations and surface water depths and supported by calculations used in appropriate industry standard surface water management design software. It is important to run a range of duration events to ensure the worst case condition is found for each drainage element on the site</i>	100-year plus climate change rainfall volumes proposed to be stored within the on-site drainage network, and within a proposed regional green/blue infrastructure corridor prior to discharge into the existing watercourse adjacent to the corridor.
Evidence Required: Plans showing size and location of storage and supporting calculations. Where there is controlled flooding, extents and depths must be indicated.	☐

Please list any relevant document and or drawing numbers (including revision reference) to support your answers to Section 5.	B048805-TTE-11-XX-RP-C-400001-P01
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SECTION 6: WATER QUALITY PROTECTION

Contaminated surface water run-off can have negative impacts on the quality of receiving water bodies. The potential level of contamination will influence final the design of an appropriate treatment train as part of your sustainable drainage system.

Is the proposal site known to be or potentially contaminated?	Yes ☒ No ☐
If the site is contaminated, it should be demonstrated that the sustainable drainage system will not increase the risk of pollution to controlled waters through the mobilisation of contaminants and/or creation of new pollution pathways.	

Confirm the Pollution Hazard Level of the proposed development - Tick ALL that apply Refer to Pollution Hazard Indices for different Land Use Classifications in Table 26.2 of The SuDS Manual C753 for further guidance.		
Pollution Hazard Level Tick ALL that apply	Surface water run-off from the proposed development will drain from:	
VERY LOW	☐	Residential roofs
LOW	☒	- Other roofs (typically commercial/industrial roofs) - Individual property driveways, residential car parks, low traffic roads (e.g. cul de sacs, home-zones and general access roads) - Non-residential car parking with infrequent change (e.g. schools, offices) i.e. < 300 traffic movements/day
MEDIUM	☒	- Commercial yard and delivery areas - Non-residential car parking with frequent change (e.g. hospitals, retail) - All roads except low traffic roads and trunk roads/motorways¹
HIGH	☒	- Sites with heavy pollution (e.g. haulage yards, lorry parks, highly frequented lorry approaches to industrial estates, waste sites) - Sites where chemicals and fuels (other than domestic fuel oil) are to be delivered, handled, stored, used or manufactured - Industrial sites - Trunk roads and motorways¹

If the development's Pollution Hazard Level is 'Very Low' or 'Low', has the sustainable drainage design been risk assessed and appropriate mitigation measures included?	Yes ☐ No ☐
If the proposed development has a very low or low polluting potential, you should design your sustainable drainage system to include an appropriate treatment train in accordance with The SuDS Manual (C753).	

If the development's Pollution Hazard Level is 'Medium' or 'High', is the application supported by a detailed water quality risk assessment?	Yes ☐ No ☐
- If the proposed development has a high polluting potential, a detailed risk assessment <i>will</i> be required to identify an appropriate SuDS treatment train and ensure compliance with Paragraph 170 of the National Planning Policy Framework. - If the proposed development has a medium polluting potential, a detailed risk assessment <i>may</i> be required depending on the nature, scale and location of the development.	

Has pre-application advice on water quality been obtained from the Environment Agency?	Yes ☒ No ☐
If YES, provide details:	WFD screening of the water bodies and their quality has been reviewed by the EA.

Please list any relevant document and or drawing numbers (including revision reference) to support your answers to Section 6.	B048805-TTE-11-XX-RP-C-400001-P01
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¹ Motorways and trunk roads should follow the guidance and risk assessment process set out in Highways Agency (2009).

SECTION 7: DETAILS OF YOUR SUSTAINABLE DRAINAGE SYSTEM

a) Function of your Sustainable Drainage System

Do your proposals store rainwater for later use (as a resource)?	Yes ☐ No ☐
Evidence Required: Please provide a brief sentence in the adjacent white box to describe how this function has been achieved.	To be confirmed at reserved matters stage
Do your proposals promote source control to manage rainfall close to where it falls? (e.g. promoting natural losses through soakage, infiltration and evapotranspiration)	Yes ☐ No ☐
Evidence Required: Please provide a brief sentence in the adjacent white box to describe how this function has been achieved.	To be confirmed at reserved matters stage
Please list any relevant document and or drawing numbers (including revision reference) to support your answers to Section 7a.	B048805-TTE-11-XX-RP-C-400001-P01

b) Hierarchy of Drainage Options – Planning Practice Guidance

The proposed method of discharge are set out within order of priority. Generally, the aim should be to discharge surface run off as high up the following hierarchy of drainage options as reasonably practicable.

Proposed method of surface water discharge		Is this proposed?	
Hierarchy Level 1: Into the ground (via infiltration)		Yes ☐ No ☐	
If YES - Evidence Required		If NO – Evidence Required Tick ALL that apply	
☐	A. Completed Infiltration Checklist from The SuDS Manual (C753) Appendix B <i>An editable version of this form is available on SusDrain website.</i>	☐	A. Site investigation to demonstrate that the ground is not free draining. Test results to be provided in accordance with: - The methodology within BRE 365 (2016), OR - Falling head permeability tests BS EN ISO 22282-2: 2012
☐	B. British Geological Survey (BGS) Infiltration SuDS Map	☐	B. NOTE: where an applicant is unable to access a site to undertake testing, e.g. where unable to access a site for an outline application, they can submit a SuDS GeoReport or similar.
☐	C. Infiltration testing to BRE 365 (2016) or falling head permeability tests to BS EN ISO 2228-2: 2012 (optional for outline)	☐	C. Evidence to confirm that infiltration to ground would result in a risk of deterioration to ground water quality.
☐	'Plan B' sustainable drainage plan and statement of approach with an alternative discharge method, in case infiltration proposals are proven not feasible upon further site specific ground investigation e.g. to consider seasonal variations to groundwater.	☐	D. Geotechnical advice from a competent person* which determines that infiltration of water to ground would pose an unacceptable risk of geohazards to the site and/or local area. <i>*Note: Competent person may include a Chartered Engineer, Chartered Geologists, Registered Ground Engineering Professionals (RoGEP).</i>

Proposed method of surface water discharge		Is this proposed?	
Hierarchy Level 2: To a surface water body <i>(select type)</i> NOTE: Consent from LLFA or Permit from Environment Agency may be required – refer to guidance		Yes ☒ No ☐ N/A ☐	
		☒ Main river ☐ Ordinary watercourse	☐ Canal ☐ Other water body
If YES - Evidence Required		If NO – Evidence Required Tick <u>ALL</u> that apply	
☐ Surface water body / watercourse survey and report	☐ Plan showing nearby watercourses and waterbodies AND ☒ Statement providing justification in your Sustainable Drainage Strategy Note: Where third party land is cited as a barrier, you should provide visibility of discussions held to date with the riparian landowner of the waterbody.		

Proposed method of surface water discharge		Is this proposed?	
Hierarchy Level 3: To a surface water sewer or highway drain <i>(select type)</i>		Yes ☐ No ☐ N/A ☒	
		☐ Surface water sewer	☐ Highway drain
If YES - Evidence Required		If NO – Evidence Required Tick <u>ALL</u> that apply	
☐ Written correspondence from Water and Sewerage Company/ Highway Authority regarding proposed connection.	☐ Plan showing nearby sewers and highway drains AND ☐ Statement providing justification in your Sustainable Drainage Strategy		

Proposed method of surface water discharge		Is this proposed?	
Hierarchy Level 4: To combined sewer		Yes ☐ No ☐ N/A ☒	
If YES - Evidence Required		If NO – Evidence Required	
☐ Written correspondence from Water and Sewerage Company	N/A		

Please list any relevant document and or drawing numbers (including revision reference) to support your answers to Section 7b.	B048805-TTE-11-XX-RP-C-400001-P01
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c) Proposed SuDS Component Types

	Tick ALL that apply				
Within property boundary	☐ Rainwater harvesting	☐ Green/ blue roofs	☐ Pervious pavements [Type: A ☐ B ☐ C ☐	☐ Soakaway	☐ Bio retention systems

	Tick ALL that apply				
Within development site boundary (not property)	☐ Infiltration system [Type: ☐ Surface level ☐ Below ground]		☐ Filter strips	☐ Filter drains	☐ Swales
	☐ Bio retention system	☐ Detention basins	☐ Ponds and wetlands	☐ Attenuation tanks/ Oversized pipes	☐ Other (state below)
	If 'Other' please state:				

Off site (not within the boundary of the proposed development)	Please state:
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I confirm that the above selected components have been designed in accordance with The SuDS Manual (C753).	I confirm ☒
I confirm that the management of flows resulting from rainfall in excess of a 1 in 100 year plus climate change rainfall event, and their exceedance route(s), has been fully considered in order to minimise the risks to people, property (new and existing) and infrastructure.	I confirm ☒

Please list any relevant document and or drawing numbers (including revision reference) to support your answers to Section 7c.	B048805-TTE-11-XX-RP-C-400001-P01
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The applicant is responsible to ensure that ALL components selected in Section 7 can be maintained for the design life of the development. This information is required so the Local Planning Authority can ensure the maintenance and management of the sustainable drainage system. The Local Planning Authority will discuss how this will be secured (e.g. via planning condition or planning obligation).

	Information Provided?
Management Plan	Yes ☐ No ☒
Evidence Required: Plan/ drawing provided to show the position of the different SuDS components with: • Key included to identify any of the adopting bodies that you will be offering your sustainable drainage components for adoption (<i>relates to maintenance and management arrangements below</i>). • Plan/ drawing to identify any areas where certain activities are prohibited, detailing reasons why.	☐
Action plan for accidental pollutant spillages.	☐

		Information Provided?
Maintenance Schedule		Yes ☐ No ☒
Evidence Required: A copy of the maintenance schedule including: Proactive and preventative maintenance Detailing regular, occasional and remedial maintenance activities including recommendations for inspection and monitoring. This should include recommended frequencies, advice on plant/ machinery required and an explanation of the objectives for the maintenance proposed and potential implications of not meeting them. Reactive and corrective maintenance (e.g. product repair and replacement). Including advice on excavations, or similar works, in locations that could affect the SuDS components/ adjacent structures.		☐

Information Provided?	
Maintenance and Management Arrangements	Yes ☐ No ☒
Evidence Required: Evidence of formal agreement with the party responsible for undertaking maintenance. Please select any of the adopting bodies that you will be offering your sustainable drainage components for adoption. Tick all that apply. ☐ Water and Sewerage Company <i>Section 104 agreement (Water Industry Act 1991)</i> ☐ Highway Authority <i>Section 278/38 agreement (Highways Act 1980)</i> ☐ Local Authority Public Open Space <i>[Refer to Local Authority Policy]</i> Please select the arrangement(s) for all non-adopted sustainable drainage components. Tick all that apply. ☐ Management Company ☐ Property Owner <i>(for SuDS components within property boundary only)</i> ☐ Other (please state)	☐

Please list any relevant document and or drawing numbers (including revision reference) to support your answers to Section 8.	B048805-TTE-11-XX-RP-C-400001-P01
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DECLARATION AND SUBMISSION

This pro-forma has been completed using evidence from information which has been submitted with the planning application.

The information submitted in the Sustainable Drainage Strategy and site-specific Flood Risk Assessment (FRA), where submitted, is proportionate to the site conditions, flood risks and magnitude of development and I agree that this information can be used as evidence to this sustainable drainage approach.

Submitter Details			
Completed by	Vincent Wai	Email Address	vincent.wai@tetrattech.com
		Telephone Number(s)	0113 278 7111
Signed off by	James Peters	Accreditation(s) and/or Qualification(s) of Signatory	MEng (Hons), CEng MICE
Date (dd/mm/yyyy)	18/03/2025	Company	Tetra Tech Ltd

Client Details			
Name	Harworth Estates Investments Ltd & Russell Homes Ltd	Company	Northern Gateway Development Vehicle LLP

