JACKSON CIVIL ENGINEERING

WESTERN BRIDGE AND LINK ROAD

Drainage Strategy and Maintenance Statement - Phase 2

WBLR-WSP-HDG-04-RP-C-0138
SEPTEMBER 2024

PUBLIC

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1 INTRODUCTION

1.1 BACKGROUND AND CONTEXT

1.1.1. WSP UK Ltd (herein referred to as 'WSP') has been commissioned by Jacksons Civil Engineering on behalf of Homes England (the 'Applicant') to submit a Reserved Matters Planning Application for the second phase of the Western Bridge and Link Road (WBLR), pursuant to an outline planning permission for wider mixed-use development on land to the northwest of Burgess Hill (Application Reference: DM/18/5114).

1.1.2. The outline planning application (herein referred to as the OPA Development), was submitted to Mid Sussex District Council (MSDC) in December 2018 and was accompanied by an Environmental Statement (ES). The planning application sought:

"Outline planning permission, with all matters reserved for later determination with the exception of some access, is sought for:

Comprehensive, phased, mixed-use development comprising approximately 3,040 dwellings including 60 units of extra care accommodation (Use Class C3) and six permanent gypsy and traveller pitches, including a Centre for Community Sport with ancillary facilities (Use Class D2), three local centres (comprising Use Classes A1-A5 and B1, and stand-alone community facilities within Use Class D1), healthcare facilities (Use Class D1), and employment development comprising a 4 hectare dedicated business park (Use Classes B1 and B2), two primary school campuses and a secondary school campus (Use Class D1), public open space, recreation areas, play areas, associated infrastructure including pedestrian and cycle routes, roads, car parking, bridges, landscaping, surface water attenuation, recycling centre and waste collection infrastructure with associated demolition of existing buildings and structures, earthworks, temporary and permanent utility infrastructure and associated works.

1.1.3. The OPA was granted planning permission by MSDC on 4th October 2019. The wider masterplan for the OPA Development needs to be delivered over a 13-year period from 2020 – 2033.

1.2 DOCUMENT PURPOSE

1.2.1. This Drainage Strategy sets out the surface water drainage strategy for Phase 2 of the WBLR in support of an application to discharge Reserved Matters under the extant Outline Planning Permission.

1.2.2. As a Reserved Matters application there must be consistency with relevant elements of the preceding outline planning permission. As such, and for ease of comparison, this document reflects the structure of the corresponding document submitted as part of the OPA.

1.2.3. The Flood Risk Assessment (FRA), by AECOM includes a surface water drainage strategy for the whole Northern Arc development which was approved under the extant Planning Permission DM/18/5114 and forms the basis of this statement.

1.3 SITE LOCATION

1.3.1. The extent of WBLR Phase 2 boundary considered within this submission is shown in Figure 1.

1.3.2. The National Grid Reference for the site is centred at 529521E, 120567N. The nearest postcode to the site is RH15 8GA. The site location plan is shown in Appendix A. Mid Sussex District Council (MSDC) is the Local Planning Authority.

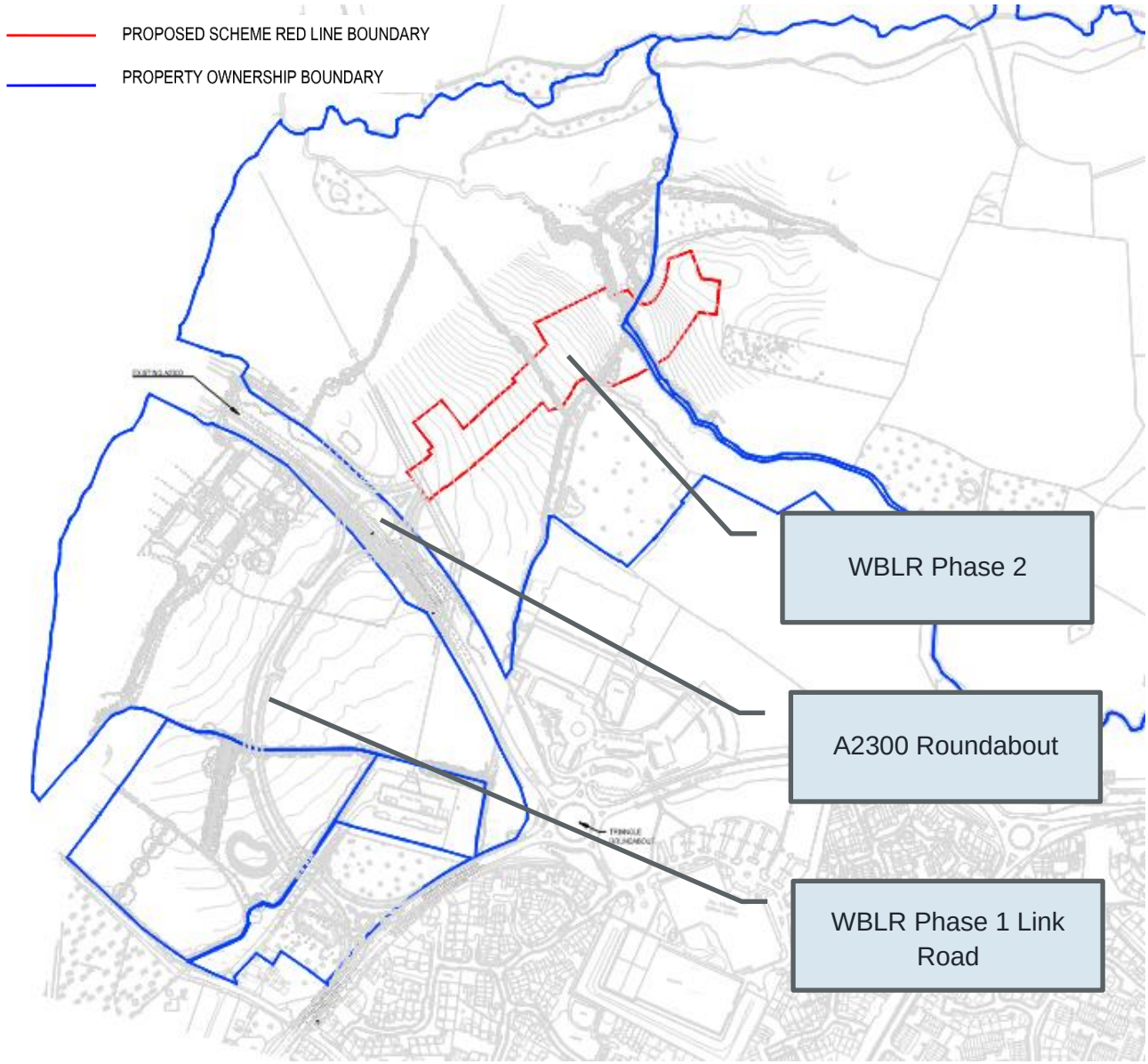

Figure 1 - Site Boundary

1.4 PROPOSED DEVELOPMENT

1.4.1. The proposed development layout is contained in Appendix B.

1.4.2. The Site is located within Burgess Hill, approximately 2km north-west of the town centre, within the administrative area of Mid Sussex District Council.

1.4.3. The Northern Arc Strategic Allocation Area comprises a strategic site of approximately 200 hectares, situated between Bedelands Nature Reserve to the east of Burgess hill and the Goddards Green Waste Water Treatment Works to the west.

1.4.4. The Phase 2 WBLR site lies north-east of Phase 1, starting at the northern arm of the new A2300 roundabout and continuing in a north-easterly direction for approximately 460m. The layout of the first phase is indicated in Figure 1 in support of this reserved matters application.

1.4.5. The general arrangement for the WBLR Phase 2 is provided in Figure 2.

1.4.6. The River Adur is the watercourse over which the proposed scheme will cross on a bridge. The watercourse runs perpendicular to the scheme, approximately 360m north-east of the junction at the existing A2300.

1.4.7. The proposed scheme will pass between two areas of Ancient Woodland; Six Acre Shaw to the north, and Jane Murray Way Shaw to the south. The proposed scheme falls outside the boundary of the woodland.

1.4.8. The first phase was granted approval by Mid-Sussex District Council in July 2020 (reserved matters application reference DM/20/0254).

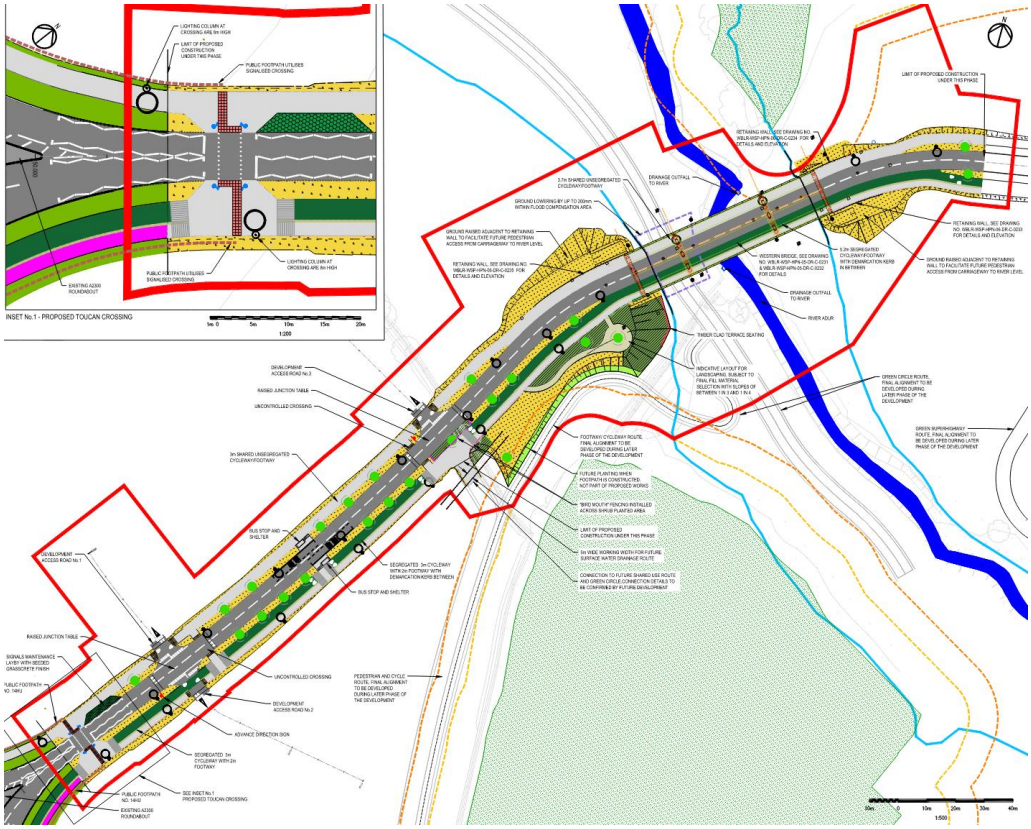

Figure 2 - WBLR Phase 2 General Arrangement

2

DESIGN CRITERIA

2 DESIGN CRITERIA

2.1 SURFACE WATER DRAINAGE STRATEGY

2.1.1. The surface water drainage system has been designed in accordance with the National Planning Policy Framework (NPPF) and the accompanying Guidance and Technical Standards for Sustainable Drainage Systems (SuDS).

2.1.2. In accordance with CIRIA SuDS Manual 2015 (Report C753), Building Regulations Part H and in line with the SuDS hierarchy under paragraph 80 of the Planning Policy Guidance underpinning the NPPF, surface water should be managed by:

1) Infiltration to the maximum extent that is practical – where it is safe and acceptable to do so;
2) Discharge to watercourses;
3) Discharge to surface water sewer, highway drain or another drainage system; and
4) Discharge to combined sewers (last resort).

2.1.3. West Sussex County Council (WSCC) is the Lead Local Flood Authority (LLFA) for Mid Sussex and the surrounding area. As a statutory consultee, the LLFA requires a site-specific drainage strategy that demonstrates that the drainage scheme proposed is in compliance with West Sussex County Council's sustainable drainage policies. In addition to this; any drainage strategy submitted should make reference to the relevant local plan policy and provide evidence which supports delivery of biodiversity, amenity and other benefits.

2.1.4. As LLFA, WSCC has the power to devolve decision making with regards to drainage and flood risk issues to Local Authorities where sufficient resource and local knowledge is available. Within mid Sussex, the LLFA has delegated responsibility for flood risk matters to Mid Sussex District Council (MSDC).

2.1.5. A number of email correspondences between WSP and WSCC to establish the principles of the drainage strategy for the site, are provided in Appendix G.

2.1.6. AECOM is responsible for the wider surface water drainage strategy for Northern Arc as set out in their FRA and Drainage Strategy Report (Dec 2018), the supplementary Flood Risk and Drainage Technical Note of 25th June 2019 and the Environmental Statement Addendum Chapter 7: Water Resources, Flood Risk & Drainage 7.1 Water Resources Consultation. As such, any strategic decisions concerning surface water management within the WBLR should be broadly in line with the principles established by AECOM under cover of their approved planning documents.

2.2 FOUL WATER DRAINAGE STRATEGY

2.2.1. There is no foul water drainage along the phase 2 mainline. Coordination with Aecom for the masterplan site strategy for foul crossing points as shown on planning drawing no. WBLR-WSP-HPN-04-DR-C-0230 included in Appendix F. In addition, provision for the future installation of a foul water rising main across the bridge is being provided in the form of a 450mm sleave under the northern verge.

3

SITE CONTEXT

3 SITE CONTEXT

3.1 SITE DESCRIPTIONS

3.1.1. The site (Phase 2 of the WBLR) covers a total area of 2.6 hectares (ha), including the temporary contractors site compounds within the red line boundary.

3.1.2. The site is currently utilised primarily as farmland. The site is bounded to the north by ancient woodland, to the east by ancient woodland and farmland, to the south by the A2300 roundabout and to the west by farmland.

3.1.3. Due to the large proportion of previously undeveloped land the site is considered, to be a Greenfield site.

The drainage catchment areas within Phase 2 of the WBLR being considered for the current submission are shown on Figure 3 and outlined in Table 1 excluding the verges outside of any footway/cycleway. Any verge between the carriageway and footway/cycleway are considered.

3.1.4. In Figure 2 the red area represents the southern/western catchment, and the blue area represents the northern/eastern catchment, the AECOM highways catchment from the central section is not shown.

Key **Southern / Western Catchment** **Northern / Eastern Catchment**

Figure 3 - Contributing Impermeable Areas

3.1.5. The bridge over the River Adur slopes downward from south to north. Because of this the Southern/ Western highway drainage network extends up to the southern end of the bridge and catchment area representing the bridge drains into the north highway drainage network.

3.1.6. The 0.217 and 0.546 Ha areas represent the WBLR Phase 2 link road highways catchment area, with the southern/ western catchment incorporating the phase 3 shared pedestrian and cycle route which provides a link between the A2300 and the Green Super Highway. The additional 0.719 Ha area in the northern/ eastern catchment represents the central section highway drainage being designed by Aecom that will connect into the Phase 2 northern/ eastern drainage network. with a control flow rate of 5.6l/s, which will pass through the northern attenuation tank.

Table 1 - Development Site Area

Parcel	Phase 2 Link Road Area (Ha)	Other Contributing Areas (Ha)	Total (Ha)
Highway (blue area) – northern/ eastern (including the bridge)	*0.217*	*0.719 (Aecom central section highway drainage using a control flow rate 5.6l/s)*	*0.936*
Highway (red area) – southern/ western of the bridge	*0.546*	*0.225 (Phase 3 shared pedestrian and cycle route)*	*0.771*
Highway Total	*0.763*	*0.944*	*1.707*

3.2 TOPOGRAPHY

3.2.1. Surface topography data has been produced for the project and is part of this assessment and is shown in Figure 4.

3.2.2. A number of topographical surveys have been undertaken for the wider area of the site, however a survey has also been undertaken for the WBLR by 40Seven in August 2018 (ref: 1520) and is contained in Appendix C. The Phase 2 WBLR scheme crosses a natural valley with the River Adur located at its bottom. As the road travels north from the A2300 roundabout the existing ground drops from 31mAOD to approximately 15mAOD at the river and then rises to 22mAOD at chainage 460m.

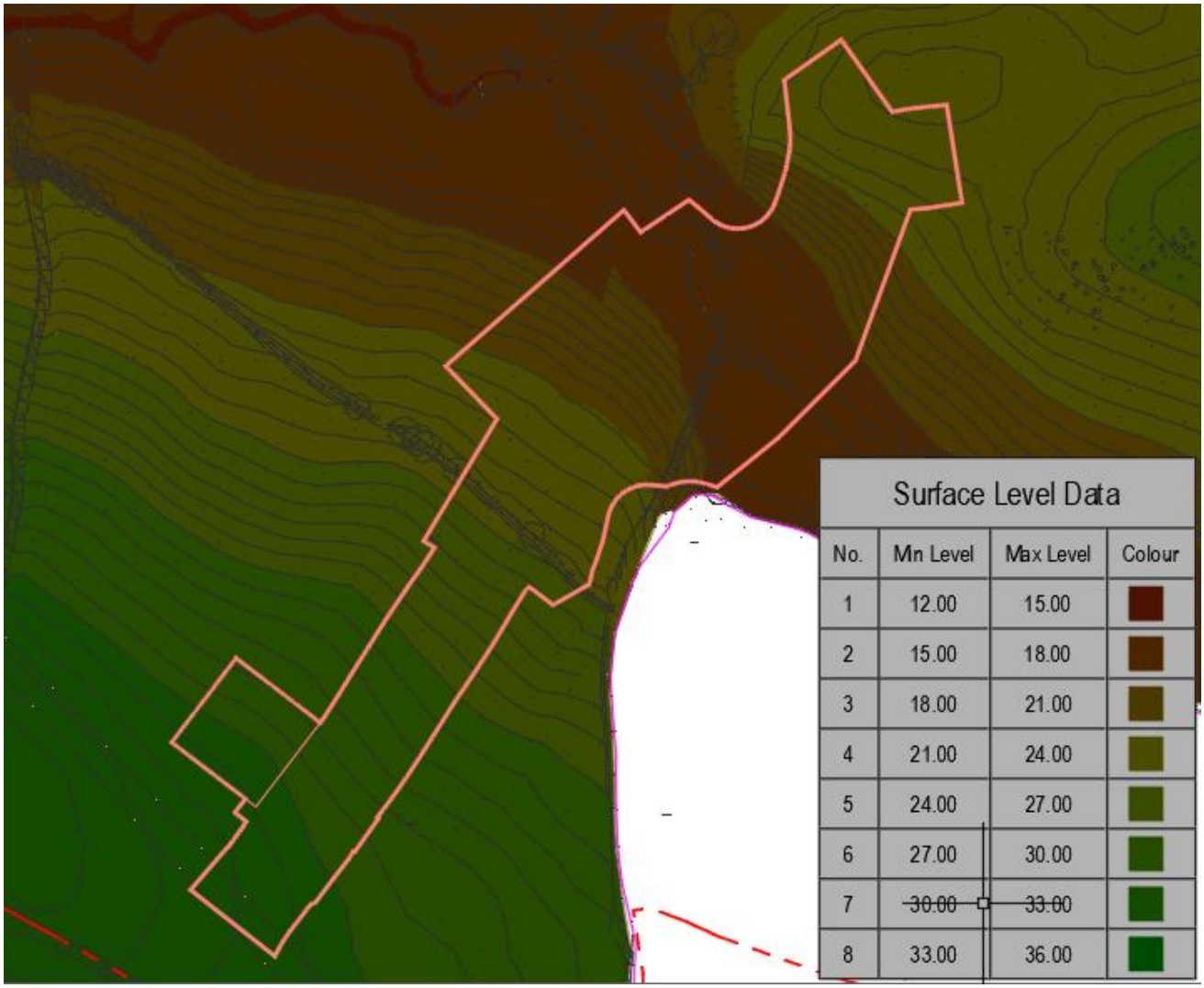

Figure 4 - Surface Topography Model

3.3 GEOLOGY

3.3.1. The British Geological Survey (BGS) Online Geology Viewer notes the underlain bedrock for the site as Weald Clay Formation and notes that there are no record of superficial deposits.

3.3.2. Two phases of ground investigation (GI) have been carried out over the Phase 2 route. The first GI was carried out in 2020, covered the entire WBLR site and was designed by CampbellReith. The second GI was focussed on the bridge over the river Adur and the approach embankments. It was designed by WSP and carried out in September 2022. The anticipated ground conditions are summarised below:

- Made Ground was encountered locally up to 0.8m thickness. The average thickness was 0.5m and was considered to comprise primarily topsoil with anthropogenic inclusions (ceramic/brick);
- Topsoil was encountered typically up to 0.4m thickness with an average of 0.3m thickness. One location encountered 0.7m thickness of topsoil;

- Alluvium was encountered in proximity to the river Adur to depths between 1m and 6.2m, with an average thickness of 3.4m. The thickest deposits were encountered immediately adjacent the river and reduced in thickness with increasing distance from the river. The Alluvium, near the surface, was typically firm becoming soft to very soft with depth and typically comprised slightly gravelly, silty, sandy clay. The soft to very soft clay was more extensive on the eastern side of the river than on the west which is consistent with the published geological map;
- Weald Clay Formation underlies the entire site and forms the bedrock. It comprises an initial weathered layer overlying increasingly less weathered mudstone;
- The weathered Weald Clay Formation comprised firm to stiff becoming very stiff, gravelly very sandy clay. The gravel consisted of mudstone and ironstone fragments. On the western side of the river the weathered Weald Clay Formation was typically between 3m and 5m, locally up to 9.2m thickness. On the eastern side of the river the weathered Weald Clay Formation was typically between 1.7m and 3.45m thickness. Beneath the river the Weathered Weald Clay Formation had been eroded and was encountered up to 2.2m thickness but was typically between 0.3m and 0.9m thickness; and
- The unweathered Weald Clay Formation, proved up to 33.2m depth, however published records indicate to be approximately 350m thickness, of extremely weak to weak grey and brown laminated to thinly bedded mudstone.

3.3.3. Intrusive Ground Investigation Works have been carried out on site in Jan-March 2020. The full results are documented in the Factual Ground Investigation Report 26/06/20, produced by Strata Geotechnics (Proj Ref G194295). In addition, an Interpretative Geotechnical Report has been produced by CampbellReith dated June 2020, Ref: 13258-CRH-XX-XX-RP-GE-0013 and a ground investigation report has been produced by WSP dated July 2023.

3.3.4. In proximity to the River Adur, Alluvium deposits with an average record proven thickness of around 3.40m have been found, which can be generally described as variable mottled CLAY.

Table 2 - Site Bedrock Geology

Strata	Expected Thickness (m)	Generalised Description
Weald Clay Formation	*122-460m*	*This formation is a type of sedimentary bedrock is formed of clays with bands of clay-ironstone which eventually transition into mudstone with depth.*

3.4 HYDROLOGY

3.4.1. A desk-study review of ordnance survey mapping notes several surface water bodies on or near the site. A number of site walkovers has been undertaken to confirm the presence or absence of any on-site surface water features.

3.4.2. The River Adur, classified as a Main River by the Environment Agency, is the principal water feature within the site boundary. It generally flows from southeast to west skirting the east and north edge of Burgess Hill. The river forms a confluence with Copyhold Stream to the northwest of the A2300. A small watercourse to the east of the site joins the River Adur and a site inspection clarifies an indication of a ditch crossing the site joining this small watercourse Is not present.

3.4.3. The Environment Agency (EA) risk of flooding from surface water map shows that the majority of the Application Site has a ‘very low’ risk of surface water flooding as shown in Figure 5. Part of the northern end of the Application site has ‘low to high’ risk of surface water flooding which is likely associated with the presence of the River Adur. There are isolated areas of land within the Application Site which have a ‘low’ risk of surface water flooding, specifically within the.

3.4.4. The adjacent plots to the phase 2 will be developed in accordance with the overall drainage strategy for the wider Northern Arc development, which will manage all drainage within the site. In the temporary situation the design will be developed to ensure falls towards to the river are not interrupted and no local ponding occurs adjacent to the phase 2 road.

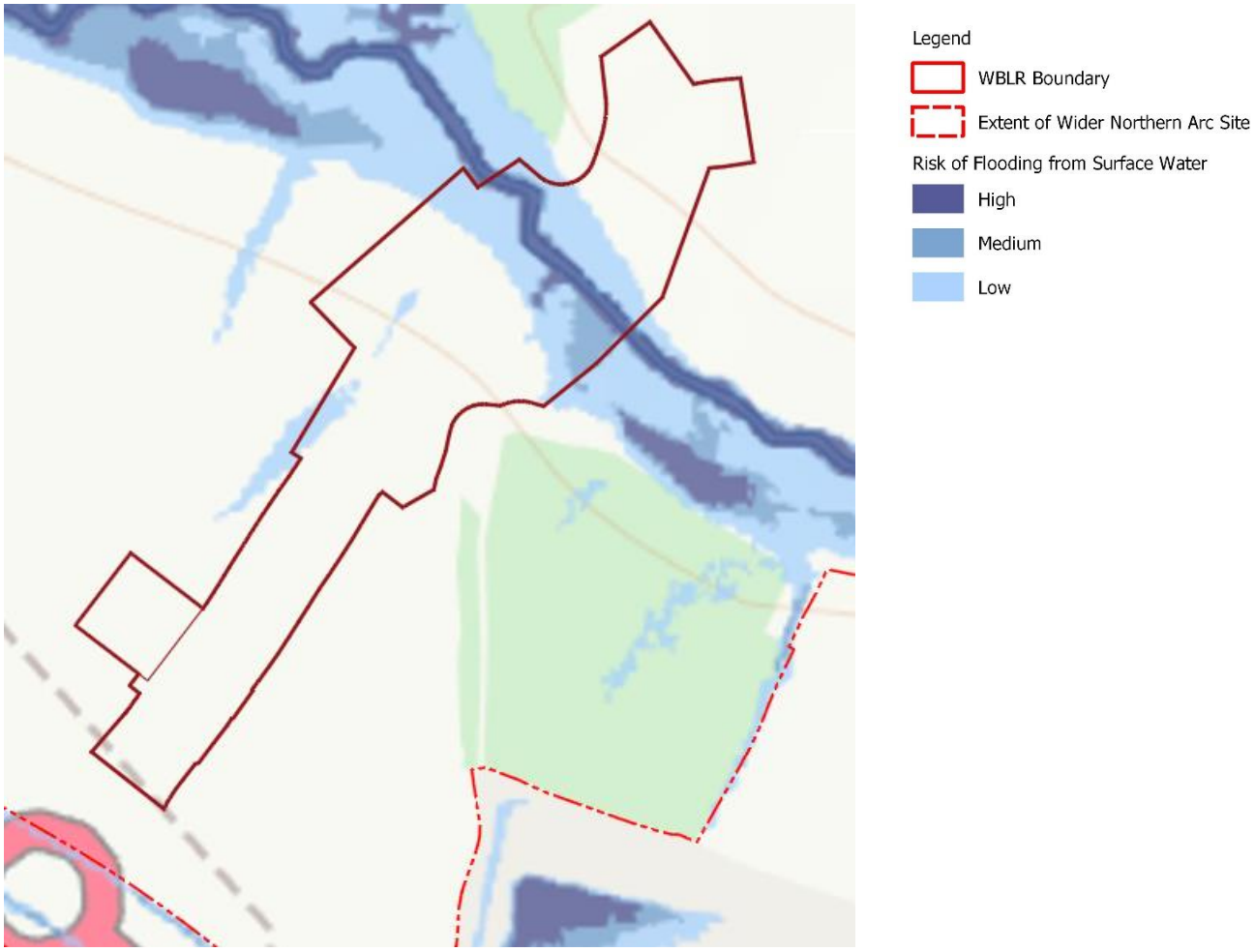

Figure 5 - Environment Agency Flooding from Surface Water

3.5 HYDROGEOLOGY

3.5.1. The site is not located within a Source Protection Zone (SPZ).

3.5.2. The site is situated above an Unproductive Aquifer. Where the site contains the River Adur, there are indications of a superficial deposit aquifer, secondary (A) aquifer – permeable layers. The groundwater vulnerability for the site is low.

3.5.3. Historical logs recorded to the west of the phase 1 WBLR site by WSP in 2016 indicate that groundwater is relatively shallow and resides between 0.17-4.80m bgl and notes seepages between 0.20-2.30m bgl. A further review of BGS borehole logs over the wider Northern Arc site notes groundwater recordings of between 1.80 and 5.50m bgl.

3.5.4. Groundwater levels beneath the site were investigated as part of the Ground Investigation Works performed in 2020 and 2022. These investigations demonstrated that ground water levels varied significantly across the Phase 2 site but near to the North and South attenuation tanks would be 0.95 and 0.55 m bgl respectively.

3.5.5. Due to the relatively high ground water level floatation checks at the attenuation crates will be carried out as part of the detail design.

3.6 EXISTING DRAINAGE

3.6.1. Southern Water is the incumbent sewerage undertaker for the area. A review of Southern Water's Asset Records, extracts contained in Appendix E, confirms that there are no adoptable surface water sewers in the vicinity of the site within the red line boundary.

3.6.2. There is an existing foul water rising main which currently crosses the site just north of the A2300. The existing main runs along the proposed development side roads and under the new Phase 2 carriageway. Southern Water has been engaged with regard to the diversion of the rising main to accommodate the proposed development and an application under Section 185 of the Water Industry Act has been submitted to that effect.

3.6.3. The natural surface water flow paths have been devised from reviewing the available and topographical data and is shown on Figure 6 below with slope values. As discussed previously, levels generally fall to the northeast from A2300 to the River Adur and to the southwest from the most northern point of Phase 2.

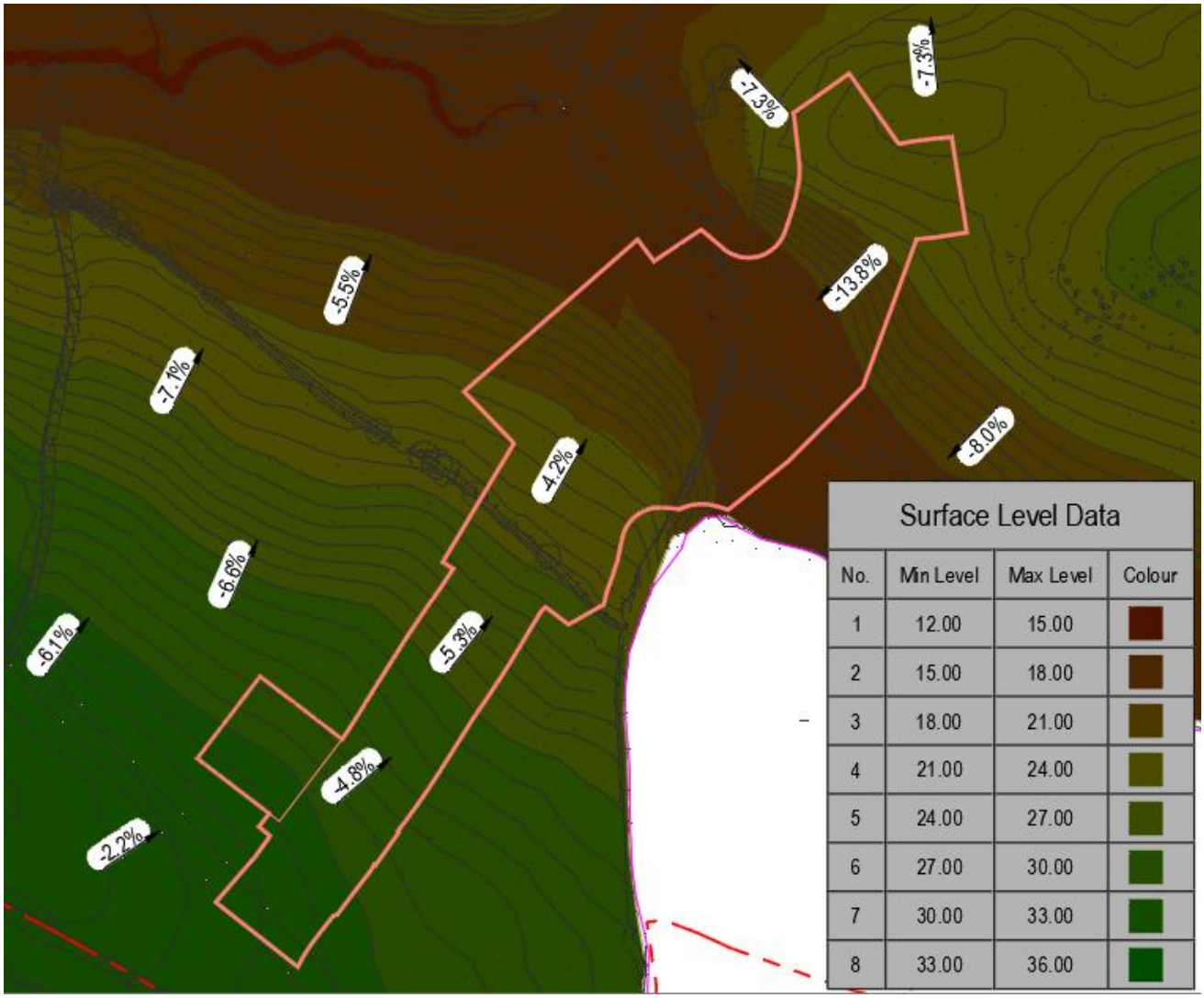

Figure 6 - Existing Surface Water Flow Paths

3.6.4. The Greenfield runoff rates for the site were calculated using the IH124 method and are summarised in Table 3. Supporting calculations are enclosed in Appendix F as provided for WBLR Phase 1.

Table 3 - Greenfield Runoff Rates

Return Period	Greenfield Runoff Rate (litres/second/hectare)
1 in 2 year	*4.90*
1 in 30 year	*13.27*
1 in 100 year	*18.40*
QBar	*5.77*

4

SURFACE WATER

4 SURFACE WATER

4.1 SITE CONSTRAINTS

4.1.1. A review of the site characteristics has informed the following constraints:

- There is a Southern Water foul water rising main to be diverted;
- For the future plot developments, there will be 3 pipe crossings (both surface and foul water) across the Phase 2 link road;
- River Adur flood extents for 1 in 100 year +105%cc;
- Ancient woodland to the North and South of the scheme; and
- OH, cables at Phase 1a and 2 interface being diverted below ground.
- Proposed utilities are to be provided along both sides of the route beneath the footway/cycleway and will need to be coordinated with the drainage to maintain the required clearances.

4.2 PROPOSED SURFACE WATER RUNOFF RATES

4.2.1. As previously mentioned in Section 3.6 an assessment of the surface water catchment has been made and the Greenfield runoff rates (Qbar) calculated. Proposed discharge rates for the highway and each subsequent development parcel should be restricted to Qbar at 5.77 l/s/ha to best mimic current flow off the site.

4.3 SURFACE WATER VOLUME

4.3.1. The northern/ eastern and southern/ western attenuation tanks have been sized at 243.75m^3 and 787.5m^3 respectively. As described in Table 1 calculations accounting for catchment areas from the Phase 2 highway as well as the NMU Phase 3 footpath and cycle route and AECOM drainage network (central section). Runoff will be restricted and attenuated on site for all storm events up to and including the 1 in 100-year return period event + 40 % climate change. The proposed attenuation units have a void ratio of 95%.

4.3.2. It should also be noted that no allowance has been made for urban creep as the application area consists mainly of new carriageway and associated infrastructure for which any changes would require additional planning permission.

4.4 SUDS STRATEGY

4.4.1. The proposed drainage strategy layout presented in Appendix F, illustrates the drainage features proposed to manage the surface water runoff from the site. The drainage strategy for the highway has been discussed and agreed in principle over a number of emails with WSCC (Highway Authority)

4.4.2. SuDS features have been considered for the Phase 2 highway surface drainage, though due to site constraints in this section of the project such features were not considered feasible:

- Bioretention systems should be level to allow distribution of flows across it and these are difficult to incorporate on steeper slopes. With a 1 in 20 longitudinal slope this would required frequent check dams causing considerable depth difference to the shared footway/ cycleway and to traffic.

This would be an unacceptable hazard to both the users of the shared surface and to traffic that could become 'beached' if it pulls onto the verge for any reason;

- Filter drain should not be provided on longitudinal slopes exceeding 2%; and
- Swales were considered but the 2.75m verge, combined with the longitudinal fall is not adequate to make a swale operate as a conveyance for the various storm returns, in accordance with WSCC standard detail S278/38 26 requirements for minimum depth and freeboard. A swale would also not be compatible with the intention to provide a tree lined avenue along the Phase 2 route.

4.4.3. The surface water drainage strategy aims to control runoff from impermeable areas at source and attenuate through underground attenuation tanks, prior to release into the River Adur. Retention basins were not used due to the relatively steep gradients resulting to excessive land take along with the proximity of ancient woodland to the highway. These attenuation tanks have a void ratio of 95%.

4.4.4. During discussions between Aecom, MSDC and WSCC drainage engineers it has been agreed that the surface water drainage to service the plots on either side of the link road can drain independently of the road corridor and have direct connection paths to the River Adur without interfering with the proposed link road.

4.4.5. Due to expected ground conditions, it is not anticipated that infiltration drainage will be possible on site. This principle has been previously been established and approved under the Extant Outline Planning Permission (Ref DM/18/5114). Therefore, following the SuDS hierarchy, the proposed discharge is to the local watercourse, the River Adur is the most appropriate discharge destination. Site specific infiltration testing has been carried out and has confirmed that infiltration is not viable.

4.4.6. Whilst a SuDS solution for the surface water drainage is preferred, it is not feasible for these sections of carriageway due to the steep gradient. The proposal is to use kerb and gullies which connect into a positive drainage system adjacent to the carriageway. Sub surface drainage will be addressed by the use of filter drains.

4.4.7. Only the area immediately surrounding the pipe will be filter material, wrapped in a permeable root barrier, this arrangement maximise the available rooting volume in the verge. This will be sufficient to manage ground water and will also act as a carrier for the gully discharge. Half perforated pipes will be used with the holes orientated upwards.

4.4.8. For the southern western network, the filter/carrier pipes will run both sides of the verge and the flow will be attenuated in cellular storage on the SW corner of the bridge. The existing ground falls at approximately 1 in 20 so it has been necessary to split the tank into 3no. storage units, that have been stepped to suit the gradient. This will require a system of flow control devices between the units which then outfall to the River Adur.

4.4.9. For the northern/ eastern network the filter/carrier pipes will run both side of the verge and the flow will be attenuated in cellular storage on the NE corner at the base level of the retaining wall with an outfall to the River Adur.

4.4.10. For the carriageway along the bridge this will be drained via combined kerb drainage systems.

4.4.11. There is no proposal to alter the existing topography of the site and as such there is no proposed overall change to the existing natural surface water flow paths.

4.4.12. The proposed surface water drainage system can effectively control all runoff generated within the site and maintain pre-development Greenfield runoff, without increasing flood risk elsewhere.

4.4.13. The surface water strategy is contained in Appendix F.

4.4.14. Drainage calculations will be provided upon completion of the detail design.

4.5 SURFACE WATER QUALITY

4.5.1. Petrol interceptors are to be provided between each of the two drainage networks and their associated attenuation tanks to provide additional water quality treatment, since the necessary SuDs Train cannot be provided.

4.5.2. The use of road gullies is recognised within the SuDS Manual (Table 26.7 of the SuDS Manual) and whilst it is acknowledged that no treatment occurs within the road gullies, they do however capture and retain the initial silt and suspended solids from the surface water runoff before it enters the drainage system.

4.6 FLOOD COMPENSATION

The Phase 2 bridge has been checked to see if it presents any adverse impacts to the River Adur's conveyance or the flood plain storage volume from the columns resulting in a reduction in the current floodplain, as indicated in Figure 7. This was assessed against a 1:100 +105% cc flood level of 17.620m. Up to this level the columns of the bridge will result in a volume loss of 4.286m^3. However, the Green Circle Route will pass underneath the bridge and to provide adequate clearance underneath the bridge, the existing ground here will need to be lowered. The volume gain provided by this lowering is 64.410m^3 which is significantly greater than that lost by the bridge columns and so there will be no adverse impacts against flooding by the bridge. Figure 8 provides and indicative area of flood compensation.

Hydraulic modelling of the river with the bridge in place was carried out during the OPA process, the EA have now reviewed and signed off this drainage model confirming that the impact of the bridge is acceptable.

The EA e-mails confirming the acceptance of the flood compensation are provided in Appendix G.

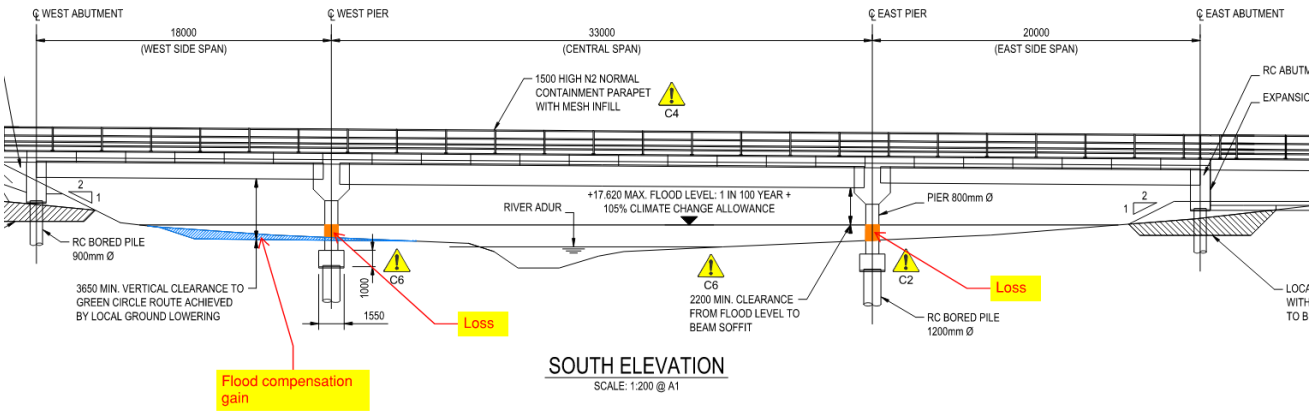

Figure 7 - Bridge South Elevation with Indication of Loss Areas

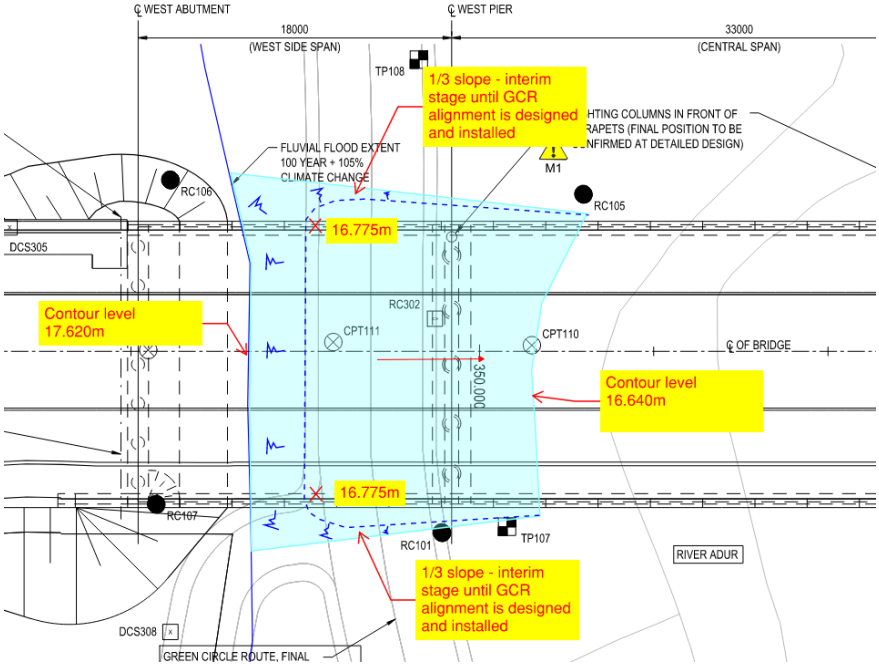

Figure 8 - Indicative Plan Area of the Flood Compensation

4.7 SCOUR ASSESSMENT

A scour assessment is not proposed to be undertaken, on the basis that the pile caps have been kept 1m below ground level to minimise the risk of scour. The surface treatment of the area under the bridge will be agreed during the detailed design.

5

SCHEDULE OF MAINTENANCE

5 SCHEDULE OF MAINTENANCE

5.1 INTRODUCTION

5.1.1. The maintenance of SuDS components is vital ensuring that they work as efficiently as they set out to do. Maintenance activities can be broadly defined as:

- Regular maintenance - basic tasks carried out regularly;
- Occasional maintenance – tasks that are required periodically but on a much less frequent basis; and
- Remedial maintenance – tasks required when a fault needs rectifying and often includes unforeseen events.

5.1.2. Subject to formal agreement with the Highway Authority the surface water network is to be offered for adoption under Section 38 agreement. The below ground drainage components (not including any on-plot devices) including gullies, filter drains and connecting pipework will be maintained by the Highway Authority up to and including the attenuation tanks and outfalls to watercourse. Regular inspection of drainage assets will be the responsibility of the Highway Authority.

5.1.3. During construction, it is the responsibility of the Principal Contractor to ensure the relevant management and maintenance requirements outlined below are implemented. The principal contractor will retain responsibility during construction up to the handing over.

5.1.4. WSCC is to adopt all elements of the drainage networks for Phase 2.

5.1.5. Maintenance access for the petrol interceptor/ control chambers for the southern/ western drainage network, will be from a vehicle is parked on the road any hoses will cross the segregated/ shared routes. This is an infrequent activity and there can be a temporary diversion to other side of road with shared access. Access to the southern/western corner tanks is also possible from the bridleway. For the northern/ eastern drainage network petrol interceptor/ control chamber, access will be via the developer's road network.

5.2 FILTER DRAINS

CONSTRUCTION

5.2.1. During construction it is important to prevent muddy water from flowing into the system. Where possible, construction should be undertaken during dry periods. The filter drains should be constructed with adequate fall to ensure the area drains efficiently. During construction the contractor must ensure the designed width and depth are correct and the geotextile has the specified porosity.

MAINTENANCE SCHEDULE

5.2.2. Table 4 shows the operation and maintenance requirements for filter drains, taken from the CIRIA C753 SuDS Manual.

Table 4 - Operation and Maintenance Requirements for Filter Drains (CIRA C753, 2015)

Maintenance Schedule	Required Action	Typical Frequency
Regular maintenance	*Remove litter (including leaf litter) and debris from filter drain surface, access chambers and pre-treatment devices*	*Monthly (or as required)*
	Inspect filter drain surface, inlet/outlet pipework and control systems for blockages, clogging, standing water and structural damage.	*Monthly*
	Inspect pre-treatment systems, inlets, and perforated pipework for silt accumulation, and establish appropriate silt removal frequencies	*Six monthly*
	Remove sediment from pre-treatment devices.	*Six monthly, or as required*
Occasional maintenance	*Remove or control tree roots when they are encroaching the sides of the filter drain, using recommended methods (e.g. NJUG, 2007 or BS 3998:2010)*	*As required*
	Clear perforated pipework or blockages	*As required*

5.3 ATTENUATION STORAGE TANKS

CONSTRUCTION

5.3.1. To be installed as per manufactures requirements for installation method and backfill specification with vehicle loading.

MAINTENANCE SCHEDULE

5.3.2. Table 5 below shows the operation and maintenance requirements for attenuation storage tanks, taken from the CIRIA C753 SuDS Manual.

Table 5 - Operation and Maintenance Requirements for Attenuation Storage Tanks

Maintenance Schedule	Required Action	Typical Frequency
Regular maintenance	*Inspect and identify any areas that are not operating correctly. If required, take remedial action*	*Monthly for 3 months, then annually*
	Remove debris from the catchment surface (where it may cause risks to performance)	*Monthly*
	Remove sediment from pre-treatment structures and/or internal forebays	*Annually, or as required*

Maintenance Schedule	Required Action	Typical Frequency
Remedial actions	*Repair/rehabilitate inlets, outlet, overflow's and vents*	*As required*
Monitoring	*Inspect/check all inlets, outlets, vents, and overflows to ensure that they are in good condition and operating as designed*	*Annually*
	Survey inside of tank for sediment build-up and remove if necessary	*Every 5 years as required*

5.4 PROPRIETARTY TREATMENT SYSTEMS

5.4.1. The proprietary treatment systems include conventional pipework, gullies, catchpits, combined drainage kerb, headwalls, and petrol interceptors.

CONSTRUCTION

5.4.2. During construction the principal contractor must ensure that preventative measures have been put in place as to not allow the construction runoff drain into the system. Measures must be taken to ensure debris from the construction site does not block the components. Routine inspections should be undertaken ensuring that the drainage is functioning properly. Outfalls must be constructed to the correct level and all joints must be correctly sealed. During construction backfill should be correctly installed as specified as per the manufactures' recommendations.

MAINTENANCE SCHEDULE

5.4.3. Table 6 below shows the operation and maintenance requirements, taken from the CIRIA C753 SuDS Manual.

Table 6 - Proprietary Treatment Systems

Maintenance Schedule	Required Action	Typical Frequency
Regular maintenance	*Remove litter and debris*	*Monthly (or as required)*
	Monitoring	*Inspect monthly*
Occasional maintenance	*Sediment management*	*Annually or as required*
Remedial maintenance	*Structure rehabilitation/repair*	*As required*

6

CONCLUSION

6 CONCLUSION

6.1.1. WSP has prepared this drainage strategy and maintenance statement to support an application for reserved matters for the area of the Northern Arc development known as Western Bridge and Link Road (WBLR) - Phase 2. The extant Planning Permission refers to the OPA Development under *DM/18/5114*. This statement has been based on the approved Flood Risk Assessment and addendum reports produced by AECOM.

6.1.2. The BGS online geology viewer notes that the site is predominantly underlain by Wealdstone Clay Formation which is unlikely to be suitable for infiltration drainage. Intrusive ground investigation including infiltration testing were carried out between January to March 2020 and again in September 2022 following changes to the alignment.

6.1.3. The topography of the site generally falls in a north -eastwards direction towards the River Adur though to the north of the River Adur the slope direction varies towards either the River Adur or a tributary of it. The main watercourse on site is the River Adur which flows in a north westerly direction off the site.

6.1.4. The surface water drainage strategy has been designed in accordance with the NPPF and accompanying guidance and technical standards for SuDS. The Proposed surface water strategy seeks to retain and mimic the existing flow paths for the site. Filter drains and attenuation tanks will attenuate the flow before a controlled discharge at QBar into the River Adur.

6.1.5. Petrol interceptors are to be provided between each of the two drainage networks and their associated attenuation for treatment. since the necessary SuDs Train cannot be provided.

6.1.6. The maintenance of SuDS features is vital ensuring that they work as efficiently as they set out to do.

6.1.7. Subject to agreement with the Highway Authority, the drainage network is to be offered for adoption. The below ground SuDS components, pipework and outfalls will be maintained by West Sussex County Council as Highway Authority.

6.1.8. The proposed drainage system to service the application site is in accordance with the approved strategy set under AECOM's Addendum Environmental Statement Chapter 7.1 and has been discussed with WSCC's drainage engineers. The proposed drainage system effectively caters for all rainfall events up to and including the 1 in 100-year storm event plus climate change allowance without any increase in flood risk elsewhere.