

Technical note:

Additional Drainage Information to Outline Drainage Strategy

Earl Shilton, Leicestershire

1. Introduction

WSP has been commissioned to produce a Technical Note, providing additional drainage information to support an outline planning application for residential led mixed-use development on land to the east and south-east of Earl Shilton, Leicestershire (the site).

This document has been prepared in response to the queries raised by Leicestershire County Council (LCC), as the Lead Local Flood Authority (LLFA) in relation to applications 21/01511/OUT and 23/00330/OUT. A copy of these responses is included in Appendix A.

2. Drainage Strategy

The site has been divided into 7 land parcels, labelled Land Parcel 1 (LP1) to Land Parcel 7 (LP7). A more detailed revised drainage Strategy drawing as requested by LCC has been produced showing the location of the proposed SuDS components including outlets from these. This drawing is included in Appendix B.

The plan in Appendix B shows two Options for the SW drainage of pond 7A. Option 1 via LP5 or Option 2 via LP6.

It is proposed that the majority of the attenuation is provided in SuDS basins or within geocellular storage if above ground space is limited, such as in LP2.

For further details on the Drainage Strategy, refer to Appendix G of the Flood Risk Assessment document number 42523-WOOD-XX-XX-RP-OW-0001_S4_P02 - Drainage Strategy for an Outline Planning Application.

It should be noted that the surface water system proposed (including SuDS) may be offered for adoption, to either STW or a New Appointments and Variations (NAV) company, subject to discussion and approval.

Table 2.1 below summarises the attenuation details for each land parcel.

Table 2.1 Attenuation Details for each Land Parcel

Attenuation Details	
Land Parcel 1	Attenuation within SuDS Basins located in the north (Pond 1B) and south (Pond 1A) of LP1. The northern pond (1B) discharges to either a ditch adjacent to Thurlaston Lane or alternatively to an existing SW sewer along Thurlaston Lane to the west of LP1. The attenuation storage volume of this pond is approximately 772m³. These alternatives are shown in Appendix B. The remaining area draining southwards will drain to the watercourse (Earl Shilton Brook) via LP2 and LP3. Attenuation will be provided in pond 1A at a volume of 1892m³. If independent drainage of LP1 is desired then alternative options that may be possible for draining pond 1A are: • Discharge into existing or proposed highway drainage infrastructure on the A47. • Construction of a dedicated off-site surface water sewer along the A47 to discharge to the watercourse.
Land Parcel 2	Attenuation within geocellular storage beneath the car parking areas. Discharge to the watercourse via LP3. Total attenuation storage provided in the geocellular tanks will be approximately 3200m³.
Land Parcel 3	Attenuation within SuDS basin located in the south-west of the LP3 (Pond 3) with discharges into watercourse. Attenuation volume is approximately 1072m³.
Land Parcel 4	Attenuation within SuDS basin located in the east of the LP4 (Pond 4) with discharges into watercourse. Approximate volume of pond 4 is 3472m³.
Land Parcel 5	Attenuation within SuDS basins located in the north of LP5 is provided by the linked ponds 5A, 5B, 5C and 5D. The final discharge from pond 5A is into the watercourse. Direct outlets from the ponds into the watercourse could be added depending on phasing of the development. Approximate attenuation volumes provided by the ponds are as follows: • Pond 5A is 1732m³. • Pond 5B is 4332m³. • Pond 5C is 2392m³. • Pond 5D is 2902m³.
Land Parcel 6	Attenuation within SuDS basins within LP6 is also provided by linked ponds 6A, 6B and 6C. Ponds 6A and/or 6B discharge into the watercourse. Approximate attenuation volumes provided by the ponds are as follows: • Pond 6A is 1102m³. • Pond 6B is 3982m³. • Pond 6C is 1770m³ (This pond is split into 2 portions either side of the road as shown on the plan, total storage volume = 1732m³).
Land Parcel 7	A new pond 7A is situated in the northern section of LP7 and pond 7B capturing the southwards drainage catchment. Both these ponds drain eastwards into the watercourse via LP5. This arrangement enables independent drainage of LP7 from any constraints of LP6.

Attenuation Details

However, an alternative route for the outfall from pond 7A is technical feasible through LP6 if desired. These routes are illustrated as Options 1 and 2 on the plan in Appendix B.

Approximate attenuation volumes provided by the ponds are as follows:

- Pond 7A is 2697m³.
- Pond 7B is 2920m³.

Appendix B includes a plan showing the above drainage options for each land parcel as described above.

3. SuDS Features

Consideration will need to be given to incorporate SuDS features within the surface water drainage network. These features would be subject to discussion and approval with the LLFA at detailed design stage.

Such features could include:

- The provision of rainwater harvesting.
- The provision of Green Roofs (for non-residential uses only).
- The provision of permeable paving to reduce the velocity of the drainage discharge from impermeable areas into the drainage network and increase water quality through percolation through the porous stone media of the parking.
- The use of filter drains or filter strips.
- The provision of open swales or/and detention basins.
- The provision of geocellular/modular storage systems for attenuation storage in areas where open space is limited.

3.1 Operation and Maintenance

The operation and maintenance of the attenuation basins and geocellular storage tanks, and associated drainage pipework, is outlined below.

Operation and maintenance requirements of the drainage components, as listed below, should be undertaken in accordance with Chapter 32 of the CIRIA SuDS Manual, along with the relevant tables and any relevant manufacturer's recommendations. See also BS 8582:2013 Code of Practice for Surface Water Management for Development Sites Section 11 and Susdrain Fact Sheet on SuDS Maintenance and Adoption Options (England) dated September 2015.

The personnel undertaking the maintenance should have appropriate experience of SuDS and drainage maintenance and should be capable of keeping sufficiently detailed records of any inspections. An example of a checklist for SuDS maintenance can be found within Appendix B of the CIRIA C753 SuDS Manual v2. If personnel do not have appropriate experience, then specific

inspection visits may be necessary. During the first year of operations of SuDS, inspections should usually be carried out at monthly intervals (and after significant storm events).

The drainage system's maintenance will be the responsibility of the project developer or any subsequent landowner. This may be undertaken by an appointed maintenance company, and as such, an appropriate maintenance schedule should be implemented.

It should be noted that the surface water system proposed (including SuDS) may be offered for adoption, to either STW or a NAV, subject to discussion and approval.

Silt Traps / Trapped Gullies

All trapped gullies, drainage channels, silt traps, manholes, catch pits and pipework will need to be regularly inspected, to ensure the system remains operable.

Any requirement to clean out these features will need to be identified as part of the above inspections and action taken in reasonable time, to prevent blockages causing any damage to the surrounding area of the site.

Occasional CCTV inspection will be needed to monitor the condition pipework.

The final chambers prior to discharge to the SuDS basins and geocellular storage tanks should be regularly inspected to ensure the system is free flowing.

Table 3.1 below summarises the operation and maintenance requirements for silt traps. The below table has been taken from CIRIA C753, The SuDS Manual, 2015 (Table 14.2).

Table 3.1 Operation and Maintenance Requirements for Silt Traps/Trapped Gullies

Maintenance Schedule	Required Action	Typical Frequency *
Routine Maintenance	Remove litter and debris and inspect for sediment, oil and grease accumulation.	6 monthly
	Change the filter media.	As recommended by manufacturer
	Remove sediment oil, grease and floatables.	As necessary – indicated by system inspection or immediately following significant oil spills
Remedial Actions	Replace malfunctioning parts of structures.	As required
Monitoring	Inspect for evidence of poor operation.	6 monthly
	Inspect filter media and establish appropriate replacement frequencies.	6 monthly
	Inspect sediment accumulation rates and establish appropriate removal frequencies.	Monthly during first half year of operation, then every 6 months

* During the first year of operation, inspections should be carried out at least monthly, and after significant storm events, to ensure the system is functioning as designed, and that no damage is evident.

Flow Control Valves

Table 3.2 below summarises the operation and maintenance requirements for flow control valves. The below table is based on Vortex Flow Control Device manufacturer recommendations.

Table 3.2 Operation and Maintenance Requirements for Flow Control Devices

Maintenance Schedule	Required Action	Typical Frequency
Routine Maintenance	Remove litter and debris and inspect for sediment, oil and grease accumulation.	6 monthly
	Remove sediment, oil, grease and floatable.	As necessary – indicated by system inspection or immediately following significant oil spills
Remedial Actions	Replace malfunctioning parts of structures	As required
Monitoring	Inspect for evidence of poor operation.	Monthly during the first three months, then every 6 months
	Inspect sediment accumulation rates and establish appropriate removal frequencies.	Monthly during first half year of operation, then every 6 months

Attenuation Basins

Land Parcels 1, 3, 4, 5, 6 and 7 all have attenuation basins. The operation and maintenance requirements for attenuation basins are summarised in Table 3.3 below:

Table 3.3 Operation and Maintenance Requirements for Attenuation Basins

Maintenance Schedule	Required Action	Typical Frequency *
Routine Maintenance	Remove litter and debris.	6 monthly
	Vegetation management.	As required
Occasional Maintenance	Clean inlet/outlet pipe.	As required
Remedial Actions	Repair/re-construct damaged components/structure.	As required
Monitoring	Inspect for evidence of damage or erosion.	6 monthly
	Inspect sediment accumulation.	Yearly

* During the first year of operation, inspections should be carried out at least monthly, and after significant storm events, to ensure the system is functioning as designed, and that no damage is evident.

Geo-cellular Underground Storage Tanks

Land Parcel 2 may have an attenuation tank. Regular inspection and maintenance is required to ensure the effective long-term operation of these underground tanks.

Attenuation tanks will need to be inspected on a regular basis, and occasional CCTV inspections will be needed to monitor the condition of the tanks.

Regular servicing of the tanks will also be needed to ensure efficient and problem free operation, and to prevent damage to the system or the tanks themselves.

Table 3.4 below provides guidance on the type of operation and maintenance requirements for Geocellular tanks. The below table has been taken from CIRIA C753, The SuDS Manual, 2015 (Table 21.3).

Table 3.4 Operation and Maintenance Requirements for Geo-cellular Underground Storage Tanks

Maintenance Schedule	Required Action	Typical Frequency *
Routine 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.	Annually, or as required
Remedial Actions	Repair/rehabilitate inlets, outlet, overflows 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, or as required

* During the first year of operation, inspections should be carried out at least monthly, and after significant storm events, to ensure the system is functioning as designed, and that no damage is evident.

Pervious Paving

If pervious paving is provided, then Table 3.5 below provides guidance on the type of operation and maintenance requirements for pervious paving. The below table has been taken from CIRIA C753, The SuDS Manual, 2015 (Table 20.15).

Table 3.5 Operation and Maintenance Requirements for Pervious Paving

Maintenance Schedule	Required Action	Typical Frequency *
Routine Maintenance	Brushing and vacuuming (standard cosmetic sweep over whole surface).	Once a year, after autumn leaf fall, or reduced frequency as required, based on site-specific observations of clogging or manufacturer's recommendations. Pay particular attention to areas where water runs onto pervious surface from adjacent impermeable areas, as this is most likely to collect the most sediment.
Occasional Maintenance	Stabilise and mow contributing and adjacent areas.	As required
	Removal of weeds or management using Glyphosate applies directly into the weeds, by an application rather than spraying.	As required – once per year on less frequently used pavements
Remedial Actions	Remediate any landscaping which, through vegetation maintenance or soil slip, has been raised to within 50mm of the level of paving.	As required
	Remedial work to any depressions, rutting and cracked or broken blocks considered detrimental to the structural performance, or a hazard to users, and replace lost jointing material.	As required
	Rehabilitation of surface and upper structure by remedial sweeping.	Every 10 to 15 years or as required (if infiltration performance is reduced due to significant clogging)
Monitoring	Initial inspection	Monthly for 3 months after installation
	Inspect for evidence of poor operation and/or weed growth – if required, take remedial action.	3-monthly, 48 hours after large storms in first 6 months
	Inspect silt accumulation rates and establish appropriate brushing frequencies.	Annually
	Monitor inspection chambers.	Annually

* During the first year of operation, inspections should be carried out at least monthly, and after significant storm events, to ensure the system is functioning as designed, and that no damage is evident.

4. Flood Storage Compensation

The FRA report recommended level for level floodplain compensation (Section 5.1 of the FRA). Details of the proposed flood storage compensation are indicated in Figures 4.1 and 4.2 below.

Figure 4.1 Level for Level Floodplain Compensation Location



Figure 4.2 Level for Level Floodplain Compensation Storage Details



The orange areas above (1, 2, 3, 4 and 5) are where ground raising would occur. The blue areas 1, 2 and 3 are available areas in the masterplan where potential compensatory lowering could occur. Initial calculations indicate that the proposed development has sufficient available land, at suitable elevations in hydraulic connectivity with the Earl Shilton Brook, that can be lowered to successfully compensate for the land which will need to be raised out of the 0.1% AEP flood zone extent.

Discussions were held with the Environment Agency (EA) to confirm if the proposed mitigation would be acceptable. The EA confirmed via email that they are satisfied with this approach and that no further checks are required. This correspondence is included in Appendix C.

5. Existing Water Features on Site

The site has a few notable hydrological features, including the Earl Shilton brook, which feeds into the Thurlaston Brook downstream, as well as the effluent discharge point for the local wastewater treatment works (WwTW), and a raised deck bridge over the Earl Shilton itself. A Surface Water Feature Plan and photos of these features are included in Appendix D. The land within this site is characterized by higher elevations to the north, west, and south, with a central valley sloping down towards the Earl Shilton Brook where most of the water drains. There is a man-made brook that flows through the area, with few significant natural hydro morphological features, and no noticeable impermeable areas or standing bodies of water. Most of the land is devoted to agricultural fields and grassland. There are also very few ditches in the site, with only a small number of short sections to the south conveying water to the Earl Shilton Brook, and two small ponds located within the site itself.

The Environment Agency has confirmed that there are no abstraction licenses for potable water within a 1 km radius of the site. Local authorities have confirmed that there are no unlicensed private water supplies within 1.5 km of the site. The only permitted discharge in the area is related to the WWTW, which is authorized to discharge into the Earl Shilton Brook.

Assessment

To reduce the impact on surface water quality during construction and operational activities, suitable mitigations will be implemented along the watercourse with the use of sustainable drainage systems (SuDs). A surface water strategy has also been developed to ensure that there are no significant impacts on water quantity.

In addition, flood risk will be mitigated by compensating for lost floodplains and developing outside of the modelled flood zones. A surface water management plan will ensure that flood risk does not change significantly for offsite receptors. Overall, the combination of the proposed development and the identified mitigations will not result in any significant effects on the water environment.

6. Conclusion

This Technical Notes has been prepared in response to the queries raised by Leicestershire County Council (LCC), as the Lead Local Flood Authority (LLFA), and all queries raised by the LCC have been covered in the points above.

Issued by

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Management systems

This document has been produced in full compliance with our management systems, which have been certified to ISO 9001, ISO 14001 and ISO 45001 by Lloyd's Register.

Document revisions

No.	Details	Date
01	First Issue	04/10/2023
02	Final Issue	09/10/2023

Appendix A

Leicestershire County Council Response

Application address Earl Shilton Sustainable Urban Extension (SUE), Mill Lane, Earl Shilton		Planning ref.	21/01511/OUT
		Our ref.	2021/1511/04/F
Description Outline application to include up to 1,000 dwellings (C3) up to 5.3hectares for employment uses comprising a mix of B2, B8 and E(g) uses, a primary school/education uses (F1), retail floor space (E) [and others]		Consultation date	07/02/2022
		Response date	04/03/2022
Planning officer	Leanne Richardson	Reviewing officer	Jack Harriman
Application type	Outline	Extension requested	☐
Refer to standing advice ☐	Conditions ☐	Further consultation required ☒	Concerns ☐

Consultation checklist

No.	Description	Check
1	Location plan	☒
2	Proposed layout plan	☒
3	Evidence that the site can be drained	☐
4	Topographic and ground investigation details	☒
5	The total impermeable area pre and post development	☒
6	All potential flood risk sources have been identified and assessed	☒
7	Existing and proposed peak discharge rates	☒
8	Consideration of sustainable drainage systems	☒
9	Attenuation volume calculations	☐
10	Consideration of the maintenance and management of all drainage elements	☐

LLFA Key Observations and Advice

Leicestershire County Council as Lead Local Flood Authority (LLFA) notes that the 65.37 ha greenfield site is primarily located within Flood Zone 1 being at low risk of fluvial flooding but with an area in Flood Zone 2 and 3 due to the Earl Shilton Brook ordinary watercourse through the site running west to east with varying risks of surface water flood risk across the development.

The site is split into 7 'land parcels' proposed to act as their own surface water catchments with individual attenuation and outfalls. The proposals seek to discharge at Qbar 3.8 l/s/ha with

individual outfalls discharging at this rate as a factor of the drained area. Attenuation volumes are provided to achieve these discharge rates up to the peak 1 in 100 year return period plus an appropriate allowance of increased volumes due to climate change.

The application proposes floodplain compensation in areas adjacent to the Earl Shilton Brook associated with Environment Agency fluvial flood zones. The LLFA is not a statutory consultee nor can confirm the principles of this; therefore the LLFA require correspondence or a positive consultee comment from the Environment Agency accepting the proposals for flood compensation.

Although the proposals are for outline approval, all development must demonstrate that it can be adequately drained. As such, the LLFA would expect level detail of the proposed outfall locations, invert levels of catchment attenuation structures and indicative catchment levels/falls to allow for cross checking of topographical information and ensure that a positively drained gravity solution is viable. Since Table 3.3 in Appendix G shows that some ground reprofiling will be necessary to achieve gravity connections, this detail should be provided on the strategy plan.

It is unclear from the survey submitted if there are ditches or other surface water features throughout the existing site. A plan showing all existing surface water drainage features should be submitted. It is advised that Leicestershire County Council culverting policy does not allow the culverting of existing ditches or watercourses unless it can be demonstrated that it is not reasonably practicable to retain them as open channel. Where a ditch becomes unnecessary due to development, it may be removed from a surface water perspective, however the Environment Agency may require their retention or replacement for ecological benefits.

The provision for sustainable surface water management for the site is minimal. For a development of this scale the LLFA would expect a greater utilisation of SuDS than currently proposed, as advised within our pre-application advice. The scale of the proposal allows for greater control of the site masterplan than usual; the LLFA would expect the detailed design to include 'best practice' for sustainable development with regards to surface water. This should include a provision for source control SuDS within 'land parcels' and other measures for water quality and amenity value around the Earl Shilton Brook to provide 'blue-green' infrastructure. For best practice guidance the applicant should consult CIRIA C753 The SuDS Manual.

Leicestershire County Council as Lead Local Flood Authority (LLFA) advises the Local Planning Authority (LPA) that the application documents as submitted are insufficient for the LLFA to provide a substantive response at this stage. In order to provide a substantive response, the following information is required:

- A more detailed drainage strategy plan which details the site outfalls for each catchment in addition to baseline level detail in order to demonstrate that each catchment can drain as indicated. Levels should account for depth of the proposed basins and receptor invert levels.
- Existing surface water catchment plans which identify all surface water features on-site.
- Confirmation from the Environment Agency that the flood compensation proposals are acceptable.

Advice to the Local Planning Authority

1. Standing Advice – National Planning Policy Framework

When determining planning applications, the local planning authority should ensure flood risk is not increased elsewhere and only consider development appropriate in areas at risk of flooding where informed by a site specific Flood Risk Assessment (FRA) confirming it will not put the users of the development at risk. Where an FRA is applicable this should be undertaken in accordance with the requirements of the National Planning Policy Framework and accompanying Planning Practice Guidance.

2. Standing Advice – Consent

Where there are any works proposed as part of an application which are likely to affect flows in an ordinary watercourse or ditch, the applicant will require consent under Section 23 of the Land Drainage Act 1991. This is in addition to any planning permission that may be granted. Guidance on this process and a sample application form can be found via the following website: <http://www.leicestershire.gov.uk/flood-risk-management>

Applicants are advised to refer to Leicestershire County Council's culverting policy contained within the Local Flood Risk Management Strategy Appendix document, available at the above link. No development should take place within 5 metres of any watercourse or ditch without first contacting the County Council for advice.

This consent does not consider local watercourse bylaws. It is the responsibility of the applicant to check if the local borough or district council has their own bylaws which the proposals will also need to consider.

3. Standing Advice – Maintenance

Note that it is the responsibility of the Local Planning Authority under the DEFRA/DCLG legislation (April 2015) to ensure that a system to facilitate the future maintenance of SuDS features can be managed and maintained in perpetuity before commencement of the works.

Additional information and guidance is available here:

<https://www.leicestershire.gov.uk/environment-and-planning/flooding-and-drainage/>

Note: Response provided by the Lead Local Flood Authority under the delegated authority of the Director of Environment and Transport.

Application address Earl Shilton Sustainable Urban Extension (SUE), Mill Lane, Earl Shilton.		Planning ref.	23/00330/OUT
		Our ref.	2023/0330/04/F
Description Outline application to include up to 500 dwellings, a primary school/education use (Class F1), retail (Class E), community hub (Class E/F1/F2), hot food takeaway (Sui Generis), accesses from Mill Lane and Astley Road and infrastructure including; public open space, SuDS, landscaping, the provision of associated infrastructure and ancillary works.		Consultation date	05/04/2023
		Response date	26/04/2023
Planning officer	Christopher Brown	Reviewing officer	Jack Harriman
Application type	Outline	Extension requested	☐
Refer to standing advice ☐	Conditions ☐	Further consultation required ☒	Concerns ☐

Consultation checklist

No.	Description	Check
1	Location plan	☒
2	Proposed layout plan	☒
3	Evidence that the site can be drained	☐
4	Topographic and ground investigation details	☒
5	The total impermeable area pre and post development	☒
6	All potential flood risk sources have been identified and assessed	☒
7	Existing and proposed peak discharge rates	☒
8	Consideration of sustainable drainage systems	☐
9	Attenuation volume calculations	☒
10	Consideration of the maintenance and management of all drainage elements	☒

LLFA Key Observations and Advice

Leicestershire County Council as Lead Local Flood Authority (LLFA) notes that the two total 23.3ha disaggregated greenfield sites are one phase of a wider SUE development that includes up to 1,500 dwellings. The Flood Risk Assessment submitted as part of this application is for the wider SUE development. While for some elements this is acceptable other elements require greater detail specific to this application's phase.

The sites are entirely located within Flood Zone 1 being at low risk of fluvial flooding and a vein of surface water flooding crosses the southern site indicating an ordinary watercourse.

The proposals seek to discharge at 3.8 l/s/ha at various discharge points. The drainage strategy provided covers the wider SUE however lacks sufficient detail for this application specifically. The applicant should provide plans appropriately detailed with indicative level information for the attenuation and outfall as well as the proposed volumes for attenuation basins. Any supplementary information that best informs the LLFA of how the wider site interacts (if at all) with surface water drainage elements in this application specifically would also be appreciated.

A development of this scale will increase run-off volume and as such; additional SuDS such as swales and pervious paving should be implemented close to source to seek to reduce volumes passed downstream. The LLFA would expect commitment to source control SuDS.

Leicestershire County Council as Lead Local Flood Authority (LLFA) advises the Local Planning Authority (LPA) that the application documents as submitted are insufficient for the LLFA to provide a substantive response at this stage. In order to provide a substantive response, the following information is required:

- Appropriately detailed surface water drainage strategy plans for parts of the development within this specific application.
 - The plan should identify SuDS locations and outfalls for the application land parcels, with sufficient level detail to demonstrate viability. Outfall levels should be based on surveyed data. SuDS basins should show indicative depths.
 - Details of each catchment including total area, impermeable area, discharge rate and attenuation storage volume.
 - Should surface water elements within these parcels rely upon, or be relied upon by or land parcel not part of this submission, details should be provided.
 - All existing drainage features and flood boundaries should be shown.
 - Contours demonstrating the direction of fall.
 - Further consideration should be undertaken for source control SuDS and Natural Flood Management (NFM) measures in the proposed blue/green corridor. This was requested within the pre-application advice to the LPA.
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Advice to the Local Planning Authority

1. Standing Advice – National Planning Policy Framework

When determining planning applications, the local planning authority should ensure flood risk is not increased elsewhere and only consider development appropriate in areas at risk of flooding where informed by a site specific Flood Risk Assessment (FRA) confirming it will not put the users of the development at risk. Where an FRA is applicable this should be undertaken in accordance with the requirements of the National Planning Policy Framework and accompanying Planning Practice Guidance.

2. Standing Advice – Consent

Where there are any works proposed as part of an application which are likely to affect flows in an ordinary watercourse or ditch, the applicant will require consent under Section 23 of the Land Drainage Act 1991. This is in addition to any planning permission that may be granted.

Guidance on this process and a sample application form can be found via the following website: <http://www.leicestershire.gov.uk/flood-risk-management>

Applicants are advised to refer to Leicestershire County Council's culverting policy contained within the Local Flood Risk Management Strategy Appendix document, available at the above link. No development should take place within 5 metres of any watercourse or ditch without first contacting the County Council for advice.

This consent does not consider local watercourse bylaws. It is the responsibility of the applicant to check if the local borough or district council has their own bylaws which the proposals will also need to consider.

3. Standing Advice – Maintenance

Note that it is the responsibility of the Local Planning Authority under the DEFRA/DCLG legislation (April 2015) to ensure that a system to facilitate the future maintenance of SuDS features can be managed and maintained in perpetuity before commencement of the works.

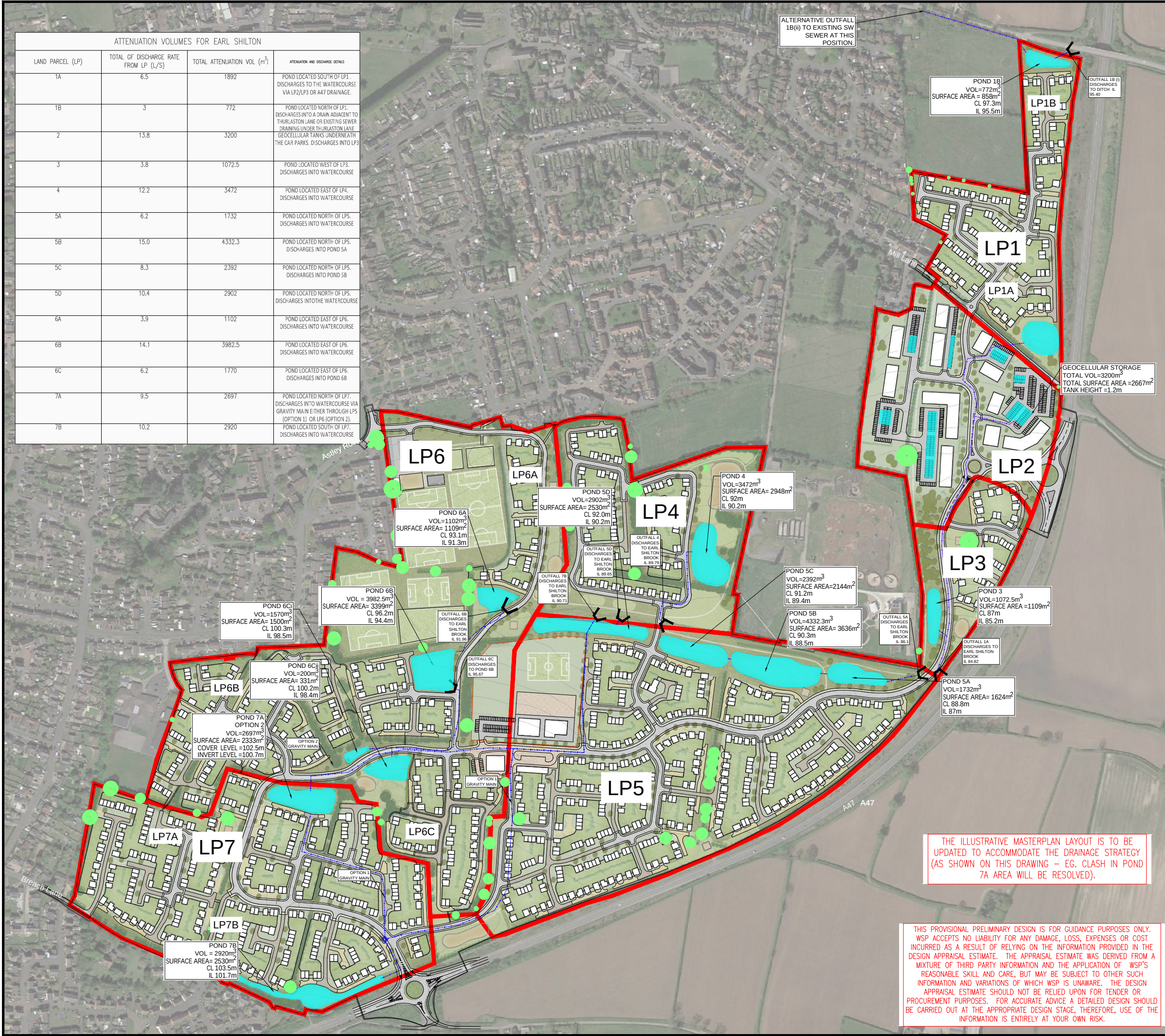
Additional information and guidance is available here:

<https://www.leicestershire.gov.uk/environment-and-planning/flooding-and-drainage/>

Note: Response provided by the Lead Local Flood Authority under the delegated authority of the Director of Environment and Transport.

Appendix B

Indicative Drainage Strategy Drawing



DO NOT SCALE

NOTES:
1. THE LAYOUT IN THIS DRAWING IS NOT FINALISED AND IS ONLY INDICATIVE AT THIS STAGE

KEY

- SITE BOUNDARY
- PROPOSED GRAVITY MAIN
- PROPOSED ATTENUATION FEATURES
- EXISTING WATERCOURSE
- HEADWALL

P03	05/10/2023	JN	MASTERPLAN UPDATE	CD	CP
P02	13/07/2023	JN	UPDATE TO LP7A DRAINAGE NETWORK	CD	CP
P01	30/03/2023	JN	FIRST ISSUE	CD	CP
REV	DATE	BY	DESCRIPTION	CHK	APP

DRAWING STATUS: S0 - WORK IN PROGRESS



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CLIENT:

ARCHITECT:

PROJECT:

EARL SHILTON

TITLE:

INDICATIVE SURFACE WATER DRAINAGE PLAN

SCALE @ A3:	CHECKED:	APPROVED:
1:5000	CD	CP
PROJECT No:	DESIGNED:	DRAWN:
42523	CD	JN
DRAWING No:	DATE:	REV:
42523-WSPE-XX-XX-DR-C-00004_S2	30/03/2023	P03

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Appendix C

EA Response

Craner, Cassie

From: Goldsmith, Paul <paul.goldsmith@environment-agency.gov.uk>
Sent: 13 March 2023 17:30
To: Craner, Cassie
Subject: RE: Planning Application Consultation for Environment Agency ref 21/01511/OUT

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Cassie,

I have now received a response from the flood risk officer who has stated the below.

The FRA is thorough and all the information is contained within the FRA and appears to be included in the original masterplan and modelling so I'm happy with their approach. As such I do not think we need to check in any more detail if they are designing it in line with what's stated in their FRA for application 21/01511/OUT.

I hope this helps and provides the required clarity.

Many thanks

Paul

Paul Goldsmith
Planning Specialist
Sustainable Places Team
East Midlands Area
paul.goldsmith@environment-agency.gov.uk
Environment Agency, Trentside Offices, Scarrington Road, West Bridgford, Nottingham NG2 5FA
External 020 3025 3833
Internal 30253833

I am dyslexic, expect creative thinking and creative spelling but if my email has any errors which make it unclear, please do give me a call

From: Craner, Cassie <cassie.craner@wsp.com>
Sent: 01 March 2023 11:16
To: Goldsmith, Paul <paul.goldsmith@environment-agency.gov.uk>
Subject: RE: Planning Application Consultation for Environment Agency ref 21/01511/OUT

Hi Paul

Thanks for letting me know – I look forward to hearing back from you in due course.

In the meantime, do let me know if you require any additional information for the flood risk team to investigate the matter.

Regards

Cassie

| **Cassie Craner**



Senior Civil Engineer
BEng (Hons) GMICE
She/Her

M+ 44 7811032677

From: Goldsmith, Paul <paul.goldsmith@environment-agency.gov.uk>
Sent: 01 March 2023 09:35
To: Craner, Cassie <cassie.craner@wsp.com>
Subject: RE: Planning Application Consultation for Environment Agency ref 21/01511/OUT

Hello Cassie,

Apologies for the delay in responding to you but I have been waiting for the opinion of the flood risk team. They have now responded and there appears to be a series of questions from them.

I have the flood risk team looking in to this at present and I am waiting for them to come back to me. Once they have then I will come back to you.

Many thanks

Paul

Paul Goldsmith
Planning Specialist
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East Midlands Area
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I am dyslexic, expect creative thinking and creative spelling but if my email has any errors which make it unclear, please do give me a call

From: Craner, Cassie <cassie.craner@wsp.com>
Sent: 16 February 2023 08:51
To: Planning, Lower Trent <planning.trentside@environment-agency.gov.uk>
Cc: Driver, Colin <colin.driver@wsp.com>
Subject: Planning Application Consultation for Environment Agency ref 21/01511/OUT

You don't often get email from cassie.craner@wsp.com. [Learn why this is important](#)

Hi Paul

We note in your initial response (see attached) you advised us the site lies fully within flood zone 1, however our team looked into this further and the hydraulic modelling results along the Earl Shilton Brook indicated that some small areas of residential development are within 0.1% AEP flood extent.

As a result, level for level floodplain compensation was recommended, as shown in the below sketches.



The orange areas above (1, 2, 3 4 and 5) are where ground raising would occur. The blue areas 1, 2 and 3 are available areas in the masterplan where potential compensatory lowering could occur. Initial calculations indicate that the proposed development has sufficient available land, at suitable elevations in hydraulic connectivity with the Earl Shilton Brook, that can be lowered to successfully compensate for the land which will need to be raised out of the 0.1% AEP flood zone extent.

See section 5.1 of the FRA report for more details of the flood compensation areas.

Can you confirm if the proposed mitigation would be acceptable to the EA?

Please contact me for any further information you may require in order to assess the issue.

Regards,

**Cassie Craner**

Senior Civil Engineer
BEng (Hons) GMICE
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Appendix D

Site Water Features Plan and selected Site-Walkover Photos

Earl Shilton Site Visit Photographs – 10/03/12

Plate 1 – Start of the Earl Shilton Brook – surface water outlet – note rag debris.



Plate 2 – upper section of the Earl Shilton Brook



Plate 3 – Earl Shilton Brook (WwTW CSO outlet)



Plate 4 – Earl Shilton Brook (treated effluent outlet)



Plate 5 – Earl Shilton Brook downstream of WwTW outlets



Plate 6 – Earl Shilton Brook (inlet to concrete channel through underpass beneath A47)



Plate 7 – Earl Shilton Brook view upstream (outlet from concrete channel through underpass beneath A47) – structure 1 in foreground



Plate 8– Earl Shilton Brook view upstream from east of A47 (structure 1 and A47 underpass at back of pictures). Outlet structures are associated with A47 bypass SuDS

