



Yorkshire & Humber
Drainage Boards

Technical Guidance for Developers & Standing Advice for Local Planning Authorities

Black Drain Drainage Board

Cowick and Snaith Internal Drainage Board

Danvm Drainage Commissioners

Dempster Internal Drainage Board

Ouse & Humber Drainage Board

Rawcliffe Internal Drainage Board

Reedness & Swinefleet Internal Drainage Board

Vale of Pickering Internal Drainage Board

The South Holderness Internal Drainage Board also subscribe to this guidance

01430 430237
development@yorkshirehumberdrainage.gov.uk
yorkshirehumberdrainage.gov.uk
@idbyorkshire

Document Control		
Version	Approved	Next Review
2.01	17/08/2020	17/08/2021
2.02	05/09/2020	05/09/2021

Contents

1.	Introduction	5
2.	Policy Area.....	5
3.	The Role of IDBs, other RMAs and LPAs.....	5
4.	Land Drainage Consent	6
5.	Design Principles (Surface Water Drainage)	7
6.	Design Principles (Fluvial or Tidal Displacement)	8
7.	Design Principles and Policies of other Authorities	9
8.	Hydraulic Design (Surface Water)	9
9.	Further Advice	11
10.	Standing Advice for Local Planning Authorities	12
11.	How to Provide Supporting Information.....	15
12.	Box A1 – Total Area of The Proposed Development Site (Redline Area).....	15
13.	Box A2 – Existing Impermeable Area	16
14.	Box A3 – Total New Impermeable Area	16
15.	Box A4 – Urban Creep Allowance	16
16.	Box A5 – Design Impermeable Area.....	16
17.	Box A6 – Is the design impermeable area greater than 249m ² ?	17
18.	Box A7 – Design Discharge Rate.....	17
19.	Box A8 – Peak Flow Control Rate	18
20.	Box A9 – Surface Water Disposal Hierarchy	18
21.	Box B1 – Have You Conducted a Valid Soakaway Test?.....	19
22.	Box C1 – Can You and Do You Wish to use The Simple Method?.....	19
23.	Box C2 – Simple Method - Rainfall Volume Over Duration.....	20
24.	Box C3 – Simple Method - Volume Discharged Over Duration.....	20
25.	Box C4 – Simple Method - Design attenuation volume	20
26.	Box D1 – Complex Method - Design Attenuation Volume.....	20
27.	Box D2 – Complex Method - Critical Storm Duration	21
28.	Box E1 – Have You Provided a Suitable Engineering Design?	21
29.	Box E2 – Do You Have a Long-Term Maintenance Plan in Place?.....	22

Legal Notice

The Applicant, Agent or any other user of this guidance agrees that by following the advice given, the Internal Drainage Boards (“IDBs”) shall under no circumstances whatsoever, be liable to the Applicant, Agent or user of this document, whether in contract, tort (including negligence), breach of statutory duty, or otherwise, for any loss of profit, or any indirect or consequential loss arising under or in connection with advice given or procedures followed.

A favourable response from an IDB to a planning application does not imply land drainage consent is or will be granted. On becoming aware of changes to a planning application the IDBs reserve the right to withdraw any comment made to the local planning authority.

The IDBs that subscribe to the standing advice and guidance contained within this document are listed on the cover page of this document, please refer to individual policy positions of other IDBs.

Yorkshire and Humber Drainage Boards (“YHDB”) is a public sector management group that directly represents 8 IDBs through arrangements made under S11 of the Land Drainage Act 1991. Administrative services are provided on behalf of YHDB by Ouse and Humber Drainage Board, a public authority constituted under statutory instrument.

A map showing England’s Internal Drainage Districts and contact details for all IDBs in England can be found at www.ada.org.uk.

Data Protection Notice

We will process the information you provide in line with the Data Protection Act 2018 so that we can deal with your application. We may also process or release the information to:

- offer you documents or services relating to environmental matters;*
- consult the public, public organisations and other organisations (for example, Health & Safety Executive, local authorities, emergency services, Department for Environment, Food and Rural Affairs) on environmental issues;*
- carry out research into environmental issues and develop solutions to problems;*
- provide information from the public register to anyone who asks;*
- prevent anyone from breaking environmental law, investigate cases where environmental law may have been broken, and take any action that is needed;*
- assess whether customers are satisfied with our service and improve it where necessary; and*
- respond to requests for information under the Freedom of Information Act 2000 and the Environmental Information Regulations 2004 (if the Data Protection Act allows).*

We may pass information on to our agents and representatives to do these things for us.

Copyright Notice

© Ouse and Humber Drainage Board 2020

© Yorkshire and Humber Drainage Boards 2020

The content of this document may be used by other RMAs under licence.

This policy references and acknowledges the works of others throughout this document.

1. Introduction

- 1.1. The following guidance is intended to assist developers when designing drainage systems that are both sustainable and where appropriate mimic natural processes. This means a development will not result in an increased flood risk elsewhere or result in a negative impact on existing drainage systems and should ensure the users of the development are safe. Any such design should work over the lifetime of the development within acceptable design parameters which consider future climate change. This kind of drainage design is commonly referred to as Sustainable Drainage Systems ("**SuDS**").
- 1.2. In addition to SuDS the placement of any development, its associated infrastructure or ancillary works must not physically interfere with the local land drainage system.
- 1.3. These measures are required to protect the local land drainage network to ensure lawful compliance with local land drainage bylaws ("**the Bylaws**") and the Land Drainage Act 1991 ("**the Act**").
- 1.4. The information given in this guidance is intended to help a developer support a Land Drainage Consent Application. It is also intended to support the local planning authority ("**LPA**") with their consultation, validation, and decision-making processes where YHDB internal drainage districts coincide with unitary or lower tier local authority districts.
- 1.5. YHDB encourages developers to work within the town and country planning process to provide evidence required by relevant [Flood] Risk Management Authorities ("**RMAs**") to support an application in respect of drainage and flood risk.
- 1.6. Failure to provide information or consult with IDBs during the planning process may result in delays or viability issues later, or in worst case scenarios *'returning to the drawing board'*.

2. Policy Area

- 2.1. The area to which this guidance applies is made up of the internal drainage districts of the Black Drain Drainage Board, Cowick and Snaith Internal Drainage Board, Danvm Drainage Commissioners, Dempster Internal Drainage Board, Ouse & Humber Drainage Board, Rawcliffe Internal Drainage Board, Reedness & Swinefleet Internal Drainage Board, Vale of Pickering Internal Drainage Board and the South Holderness Internal Drainage Board and from time to time may be applied to the catchment area outside of, but draining into these internal drainage districts. This is the ("**Policy Area**").
- 2.2. A map of internal drainage districts in England can be accessed at ada.org.uk.

3. The Role of IDBs, other RMAs and LPAs

- 3.1. IDBs have a very important role in any process that may have an impact on flood risk or the local land drainage system. The statutory position is that IDBs are public authorities that shall exercise a general supervision over all matters relating to the drainage of land within their districts, meaning they are the relevant authority that makes decisions about land drainage

including giving permission to discharge to the land drainage system and regulating actions that may impact it through the land drainage consent process.

- 3.2. IDBs are not currently a statutory consultee to the town and country planning process but do have powers to stop and reverse unlawful changes that may increase flooding or impact the local land drainage system using enforcement powers.
- 3.3. LPAs may consult IDBs on development proposals; this is to ensure that as the relevant authority, IDBs are satisfied that the proposals mitigate potential increased flood risk and have no adverse impact on the local land drainage system.
- 3.4. Outside of internal drainage districts the relevant authority for land drainage is the LLFA, this is a statutory function provided by a unitary or upper tier local authority. The LLFA holds many of the same powers as an IDB, but not all LLFAs make use of local land drainage bylaws.
- 3.5. The LLFA is also the statutory body for managing and coordinating flood risk management locally and publish the Local Flood Risk Management Strategy that other RMA's must act consistently with or have regard to when making decisions. The LLFA is a statutory consultee to the town and country planning process which means the LPA must consult with them on major planning applications.
- 3.6. The Environment Agency ("**EA**") is the authority that has powers to manage flooding from main rivers and the sea. The EA is a statutory consultee to the planning process. The EA hold a strategic role to coordinate the national response to all types of flood risk.
- 3.7. Water and Sewerage Companies ("**WSC**") are responsible for the public sewerage system. They have powers to manage the impact on the public sewer network and may enter into an agreement to adopt sewers built by the developer.
- 3.8. The highway authority may adopt drainage apparatus, however these apparatus are usually associated exclusively with the drainage of the adoptable highway.
- 3.9. There are 6 LLFAs and 8 LPAs in the Policy Area, we recognise that although each authority will have broadly the same technical requirements, one authority may require a higher standard than another. YHDB boards will always accept a higher technical standard if required by another RMA or LPA. In the unlikely event technical standards of two authorities' conflict YHDB officers may communicate directly with the other authority to seek an agreed standard.

4. Land Drainage Consent

- 4.1. If a person wishes to change, or by their actions cause changes to the local land drainage system, either directly or indirectly, a land drainage consent may be required. A land drainage consent is a separate permission to a planning consent.
- 4.2. In the simplest terms a land drainage consent is required if any proposal or action may be contrary to Bylaws or the Act. If you can answer yes to any of the following questions it is likely a land drainage consent will be required:

- ***“Do you plan to place any structure, fencing or planting within 9 metres of the top of the bank of a watercourse, the outside toe of a raised flood defence or the outside edge of a piped watercourse?”***
- ***“Will your actions increase the flow or volume of water entering a board maintained watercourse either directly or indirectly by any means whatsoever, including water entering the internal drainage district from outside and water entering via any other watercourse or pipeline?”***
- ***“Do you plan to introduce anything in, below, above, or next to a watercourse?”***

4.3. When considering the above questions, the answer may not be obvious, e.g. stripping topsoil off a site planned for a major development will increase the flow and volume of water and will require consent.

4.4. Please also consider if any action may displace water within or into a drainage district, without the agreement of the IDB this may contravene the Bylaws e.g. a scheme to divert exceedance flows from a river to prevent flooding elsewhere will still require land drainage consent if it increases flows to a watercourse within the Policy Area.

4.5. For further information and to make an application for land drainage consent please download our consent guidance document and application form which can be found on our website.

5. Design Principles (Surface Water Drainage)

5.1. Before considering any commercial or other viability issues, the developer should first work with his designer to ask - ***“is the development at flood risk, and how can it be drained without causing a flood risk to its users or increasing flood risk outside of the development?”***. The answer to this question will influence the design and layout of roads, other infrastructure, and buildings. Taking the opposite approach e.g. ***“firstly let’s assess how many housing units can this piece of land accommodate”*** could result in costly abortive design works if the site is at flood risk or cannot be effectually drained.

5.2. If the new development is proposed to discharge all surface water directly to the sea or a large tidal body such as an estuary, YHDB do not require attenuation on site, otherwise the guidance should be followed. Please be aware that any new discharge to main rivers may require the consent of the EA.

5.3. YHDB recognise that for smaller developments the level of information required to assess flood risk is sometimes disproportionate to the size of the development. There is an option in this guidance to follow a simple method which explains to smaller developers how to undertake hydraulic equations without support from specialists, although this method is acceptable to YHDB, other RMAs may require more detailed information. For larger developments, the developer may wish to seek the advice of a consulting engineer or other qualified or experienced person.

5.4. The IDBs advocate the dual use of public open space (“POS”) and regional SuDS systems. If the LPAs policy agrees with this stance, from an engineering standpoint it is important to understand where on the site POS is proposed.

6. Design Principles (Fluvial or Tidal Displacement)

6.1. Deliberate flooding of land within an internal drainage district (either directly or by displacement) to prevent more damaging flooding elsewhere, may be an appropriate method of managing flood risk in other areas, however the agreement of the affected landowner should be sought and land drainage consent applied for to ensure technical and maintenance proposals are robust.

6.2. If works are planned to lower or raise flood defences on a river or tidal body that impacts the Policy Area (either directly or indirectly) or diverts exceedance flows from a river or tidal body into the Policy Area which will cause an increase in volume of flow to a watercourse, land drainage consent will be required.

6.3. Exceedance flows should be established by understanding how changes on the entire fluvial or tidal system may impact the policy area e.g. raising flood defences on the opposite bank of a river may cause the Policy Area to flood earlier than it does presently.

6.4. Any such proposal should be designed to accommodate exceedance flows in the 1 in 200-year event plus allowances for climate change over the lifetime of the development, which should be taken to be 100-years. Climate change allowances should use the Higher Central Estimate for peak river flow and sea level rise estimates contained within the latest climate change allowances for flood risk assessments published by the EA.

6.5. If water is introduced into the Policy Area from elsewhere that results in over 25,000m³ of water being impounded above natural ground level, this may be classified as a reservoir. Any engineering proposal that is a reservoir will need to meet the reservoir safety regulations¹, which may include for the provision of a designed spillway. You must tell the EA if you intend to build a reservoir. The position of the spillway and any designed secondary flow exceedance route that enters the Policy Area must be agreed with YHDB.

6.6. For land drainage consent to be considered in these circumstances the following 4 preliminary tests must be passed:

- TEST 1 - Will the proposals result in an exceedance volume being contained in a discrete area e.g. impounded using barrier banks, valves?
- TEST 2 - Are there formal agreements in place with the owner(s) of land within the discrete area where exceedance volume is to be contained?
- TEST 3 – Do the proposals include for the provision of permanent infrastructure to remove at least 95% of the exceedance volume from the discrete area, by extent, from the Policy

¹ For more information visit <https://www.gov.uk/government/publications/design-operation-and-adaptation-of-reservoirs-for-flood-storage>

Area to a depth of less than 100mm within 72 hours of the event occurring (provided the fluvial or tidal system has capacity to accept the return of the exceedance volume)?

- TEST 4 - Is there a long-term funded maintenance strategy in place to manage the permanent infrastructure constructed to meet the above tests over the lifetime of the development?

6.7. If you are planning these types of works anywhere on a tidal or fluvial system and this may impact the Policy Area, please speak with YHDB officers early as possible in the process.

7. Design Principles and Policies of other Authorities

7.1. Developers are encouraged to speak to the IDB, LPA, EA, Highways Authority and WSC early to discuss a development's drainage and flood risk proposals. This is important to ensure the proposed design is compatible with the individual authorities' acceptable technical standards.

7.2. This guidance should be read in conjunction with the National Planning Policy Framework, the Local Flood Risk Management Strategy², the Strategic Flood Risk Assessment³ and relevant technical notes or supplementary planning advice issued by local authorities. If any part of the drainage design forms part of an adoption agreement with a WSC the designer should ensure that the design complies with the WSC's technical requirements.

8. Hydraulic Design (Surface Water)

8.1. This guidance is based on the publication "*Sustainable Drainage Systems – Non-statutory technical standards for sustainable drainage systems: Department for Environment, Food and Rural Affairs: 2015*" ("**NSTS**") and other publications referenced throughout.

8.2. The guidance differs from the NSTS where it asks the developer to identify the Critical Duration rather than the 6-hour duration. The Critical Duration is the event likely to cause the highest volume within the proposed engineered drainage system for the specified return period. YHDB consider that applying a standard duration regardless of the size of impermeable area and peak runoff rate will give erroneous results, e.g. a large warehousing development with metalled car parks will have a very different critical duration to a small residential development with gardens and landscaping.

8.3. Other RMAs may ask for the 6-hour duration storm to be used for the calculation; however, sensitivity testing should be undertaken to compare this to the critical duration. The IDB will accept designs that are oversized for the critical duration but not undersized.

8.4. If a proposed development introduces a new impermeable area that is estimated to be greater than 249m², applicants are advised to complete the form found at Appendix A – '*Sustainable Drainage Information*' accompanied by guidance notes found later on in this document. Please then submit this and the required supporting information as evidence along with the planning application documents to the LPA (or in the case of permitted development directly to YHDB). Once this information is published by the LPA, YHDB development control

² Published by Unitary or Upper Tier Local Authority Lead Local Flood Authority Department

³ Published by Unitary or District Authority Local Planning Authority Department

officers may assess the information and if relevant make comments to the LPA or directly to the developer.

- 8.5. The design should consider flooding within the development, peak flow control, design attenuation, off site flood risk and the runoff destination.
- 8.6. In the case of greenfield areas to be developed the design should ensure runoff from the development mimics natural processes as closely as possible. The drainage system should be designed to attenuate (store) additional rainfall volume generated over the duration of the design rainfall event due to the development and release this at a controlled rate to the runoff destination, usually a downstream watercourse or piped system.
- 8.7. Ideally the design should restrict flows generated from the site in the 1 in 1-year rainfall event using the method set out in IH124 QBAR⁴ (Nominally 1.4 litres per second per hectare (l/s/ha)), this is normally achieved using an engineered flow control device, this could be a pump or a mechanically actuated valve but in most cases will be a static flow control device which restricts the amount of water that can pass through it. Where static flow control device such as a vortex flow control or orifice plates are used, they must not have an orifice (diameter) of less than 75mm which will give a flow rate that is normally not less than 3.5 litres per second (l/s).
- 8.8. YHDB consider orifices smaller than 75mm may block more easily and will result in unacceptable drain-down periods increasing flood risk overall, however new designs or novel approaches to reduce this runoff rate further may be considered if effective operation and long term serviceability issues are proven to be met. If a novel approach or new proprietary product is proposed that has a diameter of less than 75mm or flow rate of less than 3.5 l/s then please contact YHDB to discuss this further.
- 8.9. For residential development, a 10% additional allowance in impermeable area should be made for 'urban creep'; this accounts for extensions, patios and conservatories built during the life of the development.
- 8.10. The design event shall be based on the critical duration for the 1 in 100-year rainfall event + allowances for climate change on greenfield sites (always 40% for residential development). FSR⁵/FEH⁶ rainfall profiles will be accepted when making this calculation.
- 8.11. It is important to understand that a return period does not represent a future time frame, it represents a statistical probability of an event occurring, e.g. a 1 in 100-year rainfall event represents a 1% chance of that rainfall event occurring in a given year. It is entirely feasible that a 1 in 100-year event could occur in the same place twice in the same year.
- 8.12. The runoff destination should be considered in accordance with the following hierarchy:

⁴ Institute of Hydrology Report Nr. 124: 1994

⁵ Flood Studies Report: 1975

⁶ Flood Estimation Handbook: 2013

- Infiltration to ground
 - Discharge to a watercourse or river
 - Discharge to a surface water sewer or highway drain
 - Discharge to a combined sewer
- 8.13. Due to the nature of ground conditions and seasonal variation in ground water levels within an internal drainage district, conditions are often not conducive to infiltration to ground.
- 8.14. Unless an existing connection exists (and this was made lawfully), discharge to a watercourse or river outside of the development will require the agreement of the landowner(s) through which the watercourse or river passes. Discharge to a main river may require the consent of the EA. Discharge to a public sewer or highway drain may require the consent of the WSC or Highway Authority.
- 8.15. The developer should show they have considered a Sustainable Drainage (SuDS) approach to design:
- Source Control - *e.g. unbound surfaces, planted areas, runoff paths to gardens*
 - Site Control - *e.g. slowing the flow down, e.g. swales in verges*
 - Regional Control - *e.g. dry attenuation basin with a flow control device*
- 8.16. The design should consider exceedance flow above the design event, consider if the route of the water will be changed due to the development e.g. will a new wall deflect water in a new direction?
- 8.17. For developments on previously developed land the peak runoff rate, where the water leaves the site should be as close as reasonably practicable to the greenfield runoff rate especially where there is no existing positive drainage system. For areas that have a proven existing positive drainage system, a higher rate will be accepted only where detailed sensitivity testing is undertaken to establish the current maximum rate at which water leaves that system. This should be assessed up to the current 1 in 30-year rainfall event where water does not escape at ground level. In other words, the peak runoff rate should never exceed the rate of discharge from the drainage system prior to the redevelopment. Any such proposal will require a body of evidence potentially including surveys and computer modelling.

9. Further Advice

- 9.1. YHDB offers up to 30 minutes of free pre-application telephone advice to developers. We also offer a chargeable pre-application service for more detailed advice; please contact us for more details on 01430 430237.

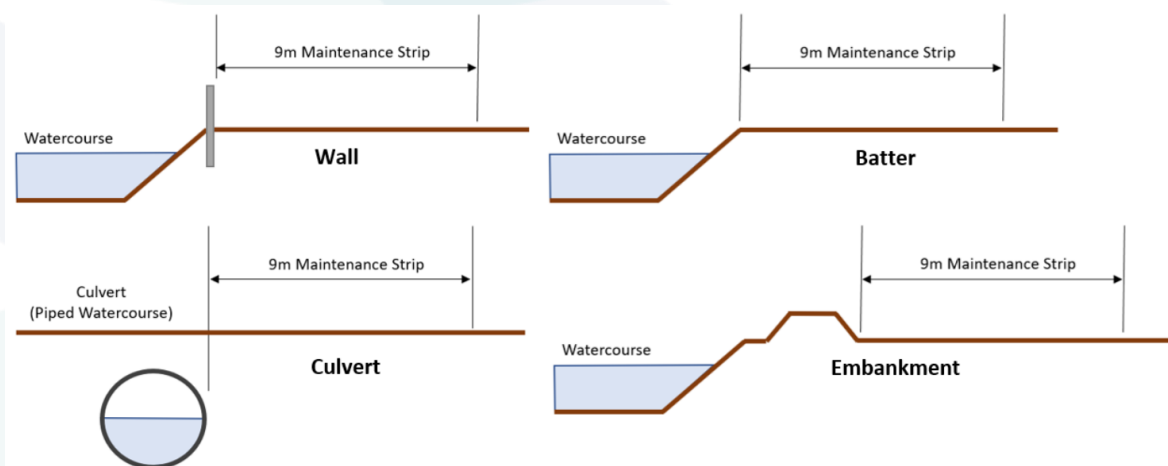
10. Standing Advice for Local Planning Authorities

- 10.1. YHDB wish to better support LPAs in making decisions about drainage and flood risk in internal drainage districts and catchment areas, this guidance is intended to assist with their validation and decision-making process. YHDB development control officers are available to offer reasonable support to LPA case officers on drainage and flood risk matters; please contact us on **01430 430237** for further guidance or assistance.
- 10.2. Paragraph 163 of the National Planning Policy Framework states that ***“when determining planning applications, local planning authorities should ensure that flood risk is not increased elsewhere.”*** This provision is underpinned by the statutory definition of flooding set out in Section 1 of the Flood and Water Management Act 2010 which defines a flood as ***“any case where land not normally covered by water becomes covered by water”***.
- 10.3. It is important that the control of flow of water and the proximity of development to drainage systems should be considered against provisions that are set out the Bylaws or the Act e.g. if planning consent was given to construct a building 5m from a watercourse without land drainage consent, and this development was to go ahead this would be unlawful.
- 10.4. Please use the standing advice matrix below to decide if you should consult the IDB. If you are unclear, please contact us on **01430 430237**.

Any development		
Any development with a new impermeable area greater than 249m ²	Consult	Include roofs, drives and paths even if they are marked as unbound or permeable.
A discharge to the local land drainage system is proposed in the application	Consult	The applicant should consult the IDB to establish if land drainage consent is required before further consultation. See NOTE 1
The proposed means of access for the development crosses a watercourse	Consult	The applicant should consult the IDB to establish if land drainage consent is required before further consultation. See NOTE 1
A structure, road, fence-line, or planting is proposed within 9 metres of a watercourse	Consult	The applicant should consult the IDB to establish if land drainage consent is required before further consultation. See NOTE 1
A garden or landscaped area is within 9m of a watercourse.	Consult	The applicant should consult the IDB to establish if land drainage consent is required before further consultation. See NOTE 1
No structure, road, fence-line, or planting is proposed within 9 metres of a watercourse	Do not consult	
Change of use only	Do not consult	With no significant changes to paths, drives, roads or means of access
I am unclear if I should consult the IDB		
Please speak with an IDB development control officer on 01430 430237		

Note 1 – No Obstructions within NINE metres of the Edge of the Watercourse

It is unlawful without the prior consent of the internal drainage board for any person to erect any building or structure, whether temporary or permanent, or plant any tree, shrub, willow or other similar growth within 9 metres of the landward toe of the bank where there is an embankment or wall or within 9 metres of the top of the batter where there is no embankment or wall, or where the watercourse is enclosed within 9 metres of the enclosing structure.



By section 66(6) of the Land Drainage Act 1991 every person who acts in contravention of or fails to comply with any of the land drainage Byelaws is liable on summary conviction in respect of each offence.

Consultation email addresses

Black Drain Drainage Board
Cowick and Snaith Internal Drainage Board
Danvm Drainage Commissioners
Dempster Internal Drainage Board
Ouse & Humber Drainage Board
Rawcliffe Internal Drainage Board
Reedness & Swinefleet Internal Drainage Board
Vale of Pickering Internal Drainage Board

development@yorkshirehumberdrainage.gov.uk

South Holderness Internal Drainage Board

info@southholdernessidb.co.uk

11. How to Provide Supporting Information

- 11.1. This guidance is to be read in conjunction with the “*Sustainable Drainage Information*” form which can be found at **Appendix A**. It advises you on how to fill in the form and what information and evidence is required to support the information you have given. These requirements are not exhaustive so further information may be required.
- 11.2. The planning authority or the applicant have no statutory requirement to provide this information, however failure to do so may result in YHDB objecting to the proposed development due to lack of information.

12. Box A1 – Total Area of The Proposed Development Site (Redline Area)

- 12.1. Provide a location plan of the development, to scale of 1:1000 or 1:1250 or 1:2500 ideally on a recent Ordnance Survey base-map, the plan should include a local named road and nearby building to help identify its location, along with a north arrow.
- 12.2. Provide a site plan of the development, of an appropriate scale that allows all the items listed below to be easily identified.
- 12.3. The plan should have a red line drawn around the area to be developed to define the exact area of the application including means of access. The exact area should be entered in Box A1.
- 12.4. You should include lines for existing below ground surface water drainage or watercourse culverts (where known), these should be marked with a dashed blue line with an arrow marking the direction of flow. Ideally you should mark any manhole or outfall positions and annotate (label) these.
- 12.5. Watercourses should be shown and marked with a solid blue line with an arrow indicating direction of flow and annotated with the words: “**watercourse**”.
- 12.6. If topographical (level) information is available this should be shown with the datum clearly indicated e.g. Metres above Ordnance Datum (mAOD).
- 12.7. There must be no new buildings, hedges, fences, or trees within 9m of a watercourse without consent of the IDB. If any are proposed and you have not contacted the IDB in advance, it is likely the IDB will object to the application.
- 12.8. The IDB always presumes against culverting (piping) of watercourses, and in general will only ever consider this in respect of means of access and health and safety (where health and safety cannot be managed in another way). If culverting is proposed and you have not contacted the YHDB in advance, we are likely to object to the application

13. Box A2 – Existing Impermeable Area

- 13.1. On the site plan of the development you have prepared for box A1 shade the existing impermeable area Green, annotate this with ***“Existing Impermeable Area”*** with the area shown in m².
- 13.2. If there is an existing positive (piped) drainage system that you intend to use as part of the proposed development please provide evidence of this such as, as-built records of drainage or a recent drainage / CCTV survey report proving positive drainage.
- 13.3. If an impermeable area has been constructed previously without land drainage consent, the IDB may ask for the whole area to be treated as greenfield.

14. Box A3 – Total New Impermeable Area

- 14.1. On the site plan of the development you have prepared for box A1, shade the total impermeable area red. The shaded area should be annotated ***“New Impermeable Area”*** with the area shown in m². Enter this value in Box A3.
- 14.2. Include roofs, paths, roads, parking, drives or any other surface that will not allow rainfall to naturally percolate into the ground below.
- 14.3. For residential developments where there is an estate road, include verges between the adoptable footpath and the adoptable highway.
- 14.4. You may exclude unbound surfaces from the impermeable area such as gravel or non-crushable clean stone that is placed directly on earth or on a permeable geotextile fabric.
- 14.5. You may exclude surfaces from the impermeable area where a proprietary product that is designed for infiltration such as permeable paving is proposed, provided such a product is accredited and the proposed installation meets the technical specification of the manufacturer. If a proprietary product is proposed, please supply supporting product and technical information.
- 14.6. Any material that will compact or bind over time, such as crushed stone or bitumen macadam planings are to be treated as impermeable.

15. Box A4 – Urban Creep Allowance

- 15.1. This value only applies to residential development and accounts for the fact that householders build extensions, conservatories, and new paved areas over the lifetime of the development.

16. Box A5 – Design Impermeable Area

- 16.1. There is no additional guidance - follow instructions on the form.

17. Box A6 – Is the design impermeable area greater than 249m²?

17.1. If the answer is no, then you do not have to submit any more information at this stage. The IDB may consider allowing an unrestricted discharge to the local land drainage system and may ask for a contribution to improve the local land drainage system to allow such a discharge.

18. Box A7 – Design Discharge Rate

18.1. Enter the runoff value; this will depend if the development is greenfield or brownfield or both. If the site is entirely or partly brownfield with a proven positive drainage system you may enter the brownfield runoff rate. If you are unsure or you are unable to provide the evidence requested to calculate brownfield runoff, you may wish to treat the development as greenfield only, this would be acceptable.

Greenfield Calculations

18.2. If applicable, calculate and enter the figure for the greenfield runoff rate of the part of the development that is to be made impermeable. Enter this in Box A7. You can do this in 2 ways:

18.3. Divide Box A5 by 10,000 and multiply by 1.4[†] or;

18.4. Divide Box A5 by 10,000 and multiply by Qbar (1 year) ^{††}

18.5. [†]1.4 l/s/ha is the generic standard greenfield runoff rate adopted by most flood risk management authorities⁷. YHDB accept this greenfield runoff rate.

18.6. ^{††} A more advanced method may give a higher existing runoff rate than 1.4l/s/ha. The accepted method is to use Qbar (1 year) which may result in a smaller attenuation area. This should be established by the method set out in Institute for Hydrology Report 24 (IH124). You should show your workings which should include hydrological region, soil type, standard annual average rainfall (SAAR) and the 2.3 year to 1-year growth factor adjustment.

Brownfield Calculations

18.7. If applicable, calculate and enter the figure for the brownfield runoff rate for the part of the site that is already impermeable and has a proven positive drainage system. If you are unsure or you are unable to provide the evidence requested, you may wish to treat the development as greenfield only.

18.8. Provide evidence of an existing positive drainage system such as a recent CCTV survey accompanied by a plan.

18.9. Using hydraulic modelling software to undertake sensitivity testing, calculate the critical duration and peak volume in the piped system up to the point that no part of the existing drainage system surcharges (floods out of manholes at ground level); do this for a range of

⁷ If this rate differs from a rate determined another RMA or the LPA please contact the Board for further advice.

durations and return periods up to a maximum of the 1 in 30-year rainfall event. Please provide the results of this simulation.

- 18.10. From this simulation calculate the maximum discharge rate where water leaves the site; this is the brownfield design discharge rate. Enter this value in l/s in Box A7.
- 18.11. If applicable, if the development is partly greenfield and partly brownfield, you may add the brownfield design discharge rate and the greenfield design discharge rate together and enter this value in Box A7.

19. Box A8 – Peak Flow Control Rate

- 19.1. The flow control rate is the maximum rate at which the rainwater that lands on the new impermeable area is permitted to leave the development.
- 19.2. Flow is usually controlled using a static orifice pipe or a vortex control device but can be controlled using other methods. When using a static flow control device this should be 75mm in diameter or larger to prevent blockage, if you are considering using a small diameter product please contact the IDB on 01430 430237.
- 19.3. YHDB considers that if flows are restricted to less than 3.5l/s, drain down times may be unacceptable; therefore, if the design discharge rate is less than 3.5l/s this figure should be rounded up to 3.5l/s. If this value cannot be achieved, please contact the IDB on 01430 430237.
- 19.4. The IDB recognises that proprietary products that may achieve a lesser rate are available and will consider these if robust evidence can be provided on the effectiveness and serviceability of these products over the lifetime of the development.

20. Box A9 – Surface Water Disposal Hierarchy

- 20.1. The applicant should always take a hierarchical approach to disposal of surface water in the following order:
- 20.2. Infiltration
- 20.3. *Due to the nature of ground conditions and seasonal variation in ground water levels within an internal drainage district conditions are often not conducive to infiltration, the IDB require a high degree of evidence that this method will work.*
- 20.4. *If you are using this method, please go to Box B1.*
- 20.5. Discharge to watercourse
- 20.6. *This is the IDB's preferred method. A watercourse can include discharge to a culverted (piped) watercourse; in this case please provide evidence that the culvert is in a serviceable condition and maintained. The applicant will need the permission of the person(s) that owns the land on the route to, or next to the watercourse.*

- 20.7. *If you are using this method, please go to Box C1.*
- 20.8. Discharge to surface water sewer
- 20.9. *The applicant is advised to contact their local WSC before considering this method.*
- 20.10. *If you are using this method, please go to Box C1.*
- 20.11. Discharge to combined sewer
- 20.12. *The applicant is advised to contact their local WSC before considering this method. If the IDB considers that this will increase the volume of water entering the local land drainage system elsewhere, it will object.*

21. Box B1 – Have You Conducted a Valid Soakaway Test?

- 21.1. If you are intending to use a soakaway as your means of disposal you must provide a valid test.
- 21.2. The test should be carried out in accordance with BRE365 or other method approved by the IDB. In addition:
- 21.3. The test should be conducted between December 1st and March 31st. If this is not possible results should be supported by a report from a qualified hydrologist.
- 21.4. Two test pits are required to be excavated to a minimum depth of 1.5m. The test should be conducted 3 times per pit and on each occasion the pit should be allowed to drain completely.
- 21.5. The tests should be evidenced with photographs with a tape or measuring staff included in the image for scale.
- 21.6. The IDB should be contacted and given notice of at least 7 days of when the test is to be undertaken and invited to witness the test. The IDB may or may not attend. Alternatively, if the test is witnessed by an officer of another flood risk management authority the IDB will accept the results.
- 21.7. If groundwater or saturated earth is exposed during the excavation the IDB will consider the test to have failed.
- 21.8. For developments where the new impermeable area is over 500m² please contact the IDB first to discuss the technical approach to a soakaway for a larger development.

22. Box C1 – Can You and Do You Wish to use The Simple Method?

- 22.1. The IDB does not unduly wish to impose disproportionate requirements on small developers.
- 22.2. If the design impermeable area in Box A5 is between 250m² and 750m² the applicant can choose a simple method for hydraulic calculations that the IDB will accept.

22.3. To ensure these results are robust it is important the applicant understands and accepts that this method uses figures that are conservative and are likely to overestimate requirements such as attenuation volume.

23. Box C2 – Simple Method - Rainfall Volume Over Duration

23.1. The simple method assumes 60mm of rain will fall over the design impermeable area; this figure already includes an allowance for climate change. By multiplying this figure by the design impermeable area this tells us how much water the drainage system needs to cope with.

24. Box C3 – Simple Method - Volume Discharged Over Duration

24.1. The simple method assumes the (critical) storm duration is 60 minutes (3,600 seconds); by multiplying the flow control rate in Box A8 by 3.6, this tells us how much water leaves the drainage system during the critical storm duration.

25. Box C4 – Simple Method - Design attenuation volume

25.1. This is the amount of water that needs to be stored on site and released at a controlled rate so that flood risk is not increased elsewhere.

26. Box D1 – Complex Method - Design Attenuation Volume

26.1. This is the amount of water that needs to be stored on site and released at a controlled rate so that flood risk is not increased elsewhere for the critical storm duration.

26.2. Work this out using industry standard probabilistic rainfall data and catchment descriptors. Ensure the method used matches the figures stated in Part A.

26.3. You may use modelling software to produce the results. You may submit calculations produced by the software as evidence, however this information should be summarised clearly in a cover sheet.

26.4. Failure to summarise results clearly may result in a request for further information.

26.5. The design attenuation volume shall be calculated using the 1 in 100-year rainfall event + 40%⁸ (1% Annual Exceedance Probability + 40% allowance for climate change (CC)). The entire attenuation volume should be accommodated within the development area unless clearly achievable off-site arrangements have been identified.

26.6. If any part of the development is subject to an agreement under Section 104 of the Water Industry Act 1991 the WSC may require that attenuation below the 1 in 30-year rainfall event (3.3% Annual Exceedance Probability) event + CC is held in a drainage system without

⁸ If a smaller climate change allowance is proposed for non-residential development, please contact the YHDB

surcharging, any volume between the 1 in 30-year rainfall event + CC and 1 in 100-year rainfall event + CC may be designed to be held in above ground areas designed for such a purpose e.g. swales, public open space or a car park. If a two-tier solution of this type is proposed, please show calculations for the 1 in 30-year event + CC and 1 in 100-year event + CC.

26.7. Please state any assumptions on the cover sheet.

27. Box D2 – Complex Method - Critical Storm Duration

27.1. Establish the critical storm duration based on the peak design attenuation volume for the 100-year (1% Annual Exceedance Probability) event + 40% for climate change.

28. Box E1 – Have You Provided a Suitable Engineering Design?

28.1. For all developments components must be designed to ensure structural integrity of the drainage system and any adjacent structures or infrastructure under anticipated loading conditions over the design life of the development considering the requirement for reasonable levels of maintenance. The materials, including products, components, fittings or naturally occurring materials, which are specified by the designer must be of a suitable nature and quality for their intended use.

28.2. For minor developments, a general arrangement drawing should be provided showing the line and direction of any proposed drainage system. This should indicate manhole, outfall, flow control details and attenuation proposals. The drawing should be clearly annotated.

28.3. For major developments the following information is requested:

28.4. A topographical survey in metres Above Ordnance Datum (mAOD) which should include existing general site levels, existing intermediate ground levels for proposed off-site drainage works, crown, intermediate and channel level of the nearest adjacent public highway, bank/cover and invert level of the receiving watercourse/sewer/culvert.

28.5. A plan showing the line, dimensions, and levels in mAOD of all existing (and to be retained) and proposed drainage apparatus, flow control details and attenuation systems.

28.6. Cross sections with dimensions and levels in mAOD of all existing and proposed drainage apparatus.

28.7. The engineering standard to be used for construction and materials, e.g. WRC Sewers for Adoption. Where novel proprietary products or bespoke solutions are proposed please submit supporting technical information.

28.8. For sites over 4 hectares or 'masterplan' developments the IDBs encourage a regional SuDS scheme which should drain water into a central storage area which can be drained down at the flow control rate. Ownership or commercial considerations should not influence this approach.

28.9. This list is not exhaustive, if further information is required, the LPA will be asked for further information.

29. Box E2 – Do You Have a Long-Term Maintenance Plan in Place?

29.1. For major development, the LPA is required by a development management procedure order (Written Statement HCWA161) to ensure that suitable ongoing maintenance arrangements are in place over the lifetime of the development. The IDB will always ask for a condition to ensure a suitable maintenance plan is in place and will ask the LPA to ensure that any such plan is monitored and if necessary, enforced over the lifetime of the development.

29.2. The IDB does not favour private maintenance arrangements for drainage apparatus and associated land, from a land drainage consent stance any such proposal will result in a high degree of scrutiny from the Board unless the development is likely to remain under single ownership and within a single curtilage over its lifetime. If a private maintenance arrangement is planned, please contact the IDB to discuss your proposals before making your planning submission.

29.3. The following approaches to maintenance arrangements are supported by the IDBs:

- Vesting of drainage apparatus in an IDB or other public RMA
- Adoption of drainage apparatus under section 104 of the Water Industry Act 1991.
- Adoption of drainage apparatus as part of a Section 38 agreement
- Or a combination of the above.

29.4. Please provide a comprehensive statement on how drainage apparatus will be maintained in the future.

Appendix A – Sustainable Drainage Information Form

Please Read in Conjunction with Above Guidance

SUSTAINABLE DRAINAGE INFORMATION

This form and the associated guidance is provided to assist developers so they might prepare adequate information so the IDB is better able to comment on planning applications within its district / catchment area. There is no statutory requirement to complete this form or provide the suggested supporting information, however failure to provide relevant information in an appropriate form or level of detail may result in the Board objecting to the application on grounds of insufficient information. Determination of planning applications remains a matter for the Local Planning Authority (LPA).

Regardless of the LPA decision, if any part of a development is found to be constructed contrary to the Land Drainage Act 1991 or Local Land Drainage Bylaws this may be an offence.

As well as planning consent the development may require land drainage consent, please see our website for further information.

PART A - BASIC INFORMATION

Fill the Box in marked "VALUE" with a number or response

Refer to the accompanying Guidance Sheet about how to complete this form and ensure all supporting information is included

LINE	INFORMATION REQUIRED	VALUE	UNIT	DESCRIPTION
A1	Total area of proposed development	A1	m ²	Also known as the redline area. Include everything within the redline regardless of surface type. Enter this value.
A2	Existing impermeable area.	A2	m ²	Enter Existing Impermeable Area Enter this value.
A3	Total new impermeable area	A3	m ²	Enter New Impermeable Area Enter this value.
A4	Urban Creep Allowance	A4	m ²	This is for residential development only, enter NA if the development is not residential. This is the value on Line A3 multiplied by 0.1 or 10%. Enter this value = (A3 x 0.1) .
A5	Design impermeable Area	A5	m ²	This is the value on Line A3 added to the value on Line A4. Enter this value = (A3 + A4) .
A6	Is the design impermeable area greater than 250m ² ?	A6	YES/NO	If the answer is NO then STOP . The Board does not require any further information. Do not fill in any more of this form and submit it with the information requested so far. Enter this value = (YES or NO) .
A7	Design Discharge Rate	A7	l/s	Enter the Design Discharge Rate To calculate these values see the guidance note. Enter this value = (Greenfield Rate) OR (Brownfield Rate) OR (Greenfield + Brownfield Rate)
A8	Peak Flow Control Rate	A8	l/s	If the value on Line A7 is less than 3.5 then enter 3.5 otherwise enter the value from Line A7. Enter this value = (A7) or (3.5) .
A9	Surface water disposal heirarchy	A9	I/W/S/C	Enter I for Infiltration, W for Watercourse, S for Surface Water Sewer or C for Combined Water Sewer. If discharge is to infiltration go to Line B1 otherwise go to Line C1 . Enter this value = (I) or (W) or (S) or (C) .

PART B - DISCHARGE TO INFILTRATION (SOAKAWAY)

Fill the Line in marked "VALUE" with a number or response

Refer to the accompanying Guidance Sheet about how to complete this form and ensure all supporting information is included

B1	Have you conducted a valid soakaway test?	B1	YES/NO	Have you completed a successful BRE 365 (or approved) soakaway test and did it pass? If the answer is NO use another method of surface water disposal. Enter this value (YES) or (NO) . Go to Line E1.
----	---	----	--------	--

PART C - DISCHARGE TO WATERCOURSE, CULVERT, SURFACE WATER SEWER or COMBINED SEWER - SIMPLE METHOD

Fill the Line in marked "VALUE" with a number or response

Refer to the accompanying Guidance Sheet about how to complete this form and ensure all supporting information is included

C1	Can you and do you wish to use the simple method?	C1	YES/NO	If you wish to use the simple method, enter YES and go to Line C2 . Otherwise enter NO and go to Line D1 . Enter this value = (YES) or (NO) .
C2	Simple Method - Rainfall volume over duration including climate change	C2	m ³	This is the value on Line A5 multiplied by 0.06 Enter this value = (A5 x 0.06)
C3	Simple Method - Volume discharged over duration	C3	m ³	This is the value in Line A8 multiplied by 3.6 . Enter this value = (A8 x 3.6)
C4	Simple Method - Design attenuation volume	C4	m ³	This is the value on Line C2 minus the value on Line C3 . Enter this value = (C2 - C3) Go to Line E1

PART D - DISCHARGE TO WATERCOURSE, CULVERT, SURFACE WATER SEWER or COMBINED SEWER - COMPLEX METHOD				
Fill the Line in marked "VALUE" with a number or response				
Refer to the accompanying Guidance Sheet about how to complete this form and ensure all supporting information is included				
D1	Complex Method - Design Attenuation Volume	D1	m3	Enter the design attenuation volume for the 100 year event (1% Annual Exceedance Probability) and include an allowance of 30%* to account for climate change. (*See Guidance) Enter this value.
D2	Complex Method - Critical Storm Duration	D2	min	Enter the critical storm duration. Enter this value.
D4	Go to Line E1			
PART E - DESIGN AND SUBMISSION				
Fill the Line in marked "VALUE" with a number or response				
Refer to the accompanying Guidance Sheet about how to complete this form and ensure all supporting information is included				
E1	Have you provided a suitable engineering design?	E1	YES / NO	Provide a suitable engineering design - see guidance. Enter this value = (Yes or No)
E2	Do you have a long term maintenance plan in place?	E2	YES / NO / NA	Only fill this in for a major development. Provide a statement on how the drainage apparatus will be maintained in the future. Enter this value = (Yes, No or NA)
E3	Have you prepared all of the supplementary documents and evidence requested in the guidance document?	E3	YES/NO	Ensure all the information requested is submitted to the local planning authority to support your application Enter this value = (Yes or No)

The applicant understands that by following the advice given, the Internal Drainage Boards (IDBs) shall under no circumstances whatsoever be liable to the applicant, whether in contract, tort (including negligence), breach of statutory duty, or otherwise, for any loss of profit, or any indirect or consequential loss arising under or in connection with advice given or procedures followed.

Name of Applicant / Business Name of Developer

Address of Applicant

Name of Agent (If authorised to act on behalf of applicant)

Telephone Number(s) of Applicant

Email Address of Applicant

Address of Agent

Agent Telephone Number(s)

Agent Email Address

Signed on Behalf of Developer

Name

Position

Date