

Home Farm, Deeping St Nicholas, Lincolnshire

Flood Risk Assessment and Drainage Strategy

Revision C

March 2020



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Contents

1	Introduction	07
2	Existing Site and Proposed Development	09
3	Flood Risk	11
	Risk of Flooding to the Development from Known Sources	14
	Risk of Flooding from the Proposed Development	17
4	Proposed Development Drainage Strategy	19
	Surface water Drainage Strategy	20
	Discharge Strategy	21
	Foul Water Drainage Strategy	26
4	Summary and Conclusions	27

Appendices

Appendix A	Site Location Plan
Appendix B	Proposed Site Plan
Appendix C	Environment Agency - Flood Map for Planning
Appendix D	Environment Agency - Flood Risk from Rivers or the Sea Map
Appendix E	Flood Map Plan
Appendix F	Environment Agency - Surface Water Flood Map
Appendix G	British Geological Survey Map
Appendix H	Anglian Water Services Wastewater Map
Appendix I	Environment Agency - Reservoir Flood Map
Appendix J	Drainage Calculations - Surface Water
Appendix K	Proposed Drainage Strategy
Appendix L	Anglian Water - Pre-Planning Assessment Report
Appendix M	Drainage Calculations - Foul Water

Report Reference

18706/FRA and DS Rev C

Revision History

Rev	Amendments	Prepared By	Checked By	Date
First Issue	N/A	YK	GBR	13/03/2020
A	Drainage Strategy updated	YK	MF	06/07/2020
B	FRA updated following EA comments	YK	GBR	31/07/2020
C	FRA updated following EA comments	YK	GBR	02/09/2020

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Introduction

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Introduction

The following paragraphs state the purpose of this document, and its constraints. A summary of existing and future site details; together with relevant pre-planning correspondence is also provided.

- 1.1 This Flood Risk Assessment (FRA) and Drainage Strategy has been prepared by Woods Hardwick Infrastructure LLP on behalf of Ashwood Homes in support of a Full Planning Application for a proposed development comprising 118 residential dwellings and a village hall on a site known as 'Home Farm' in Deeping St Nicholas, Lincolnshire. A copy of the Site Location Plan is provided in **Appendix A**.
- 1.2 The application boundary for the site covers an area of approximately 4.4ha. Site access will be taken from Littleworth Drove to the north west of the site.
- 1.3 In terms of flood risk, the majority of the application site is situated in Flood Zone 2. However, the southern part of the site lies within Flood Zone 3. land which has a 1 in 100 or greater annual probability of river flooding or a 1 in 200 or greater annual probability of flooding from the sea.
- 1.4 This document has been written in accordance with the guidance contained within the Flood Risk and Coastal Change section of the Government's Planning Practice Guidance (FRCC, PPG).
- 1.5 This FRA concludes that the proposed development will not significantly impede flood flows and will not materially increase the risk of flooding on the site itself, adjacent properties or to third parties situated either upstream or downstream of the site.
- 1.6 This document includes a Surface Water Drainage Strategy that identifies a suitable sustainable strategy for the disposal of surface water from the proposed development site that conforms with the guidance contained within the following documents:
 - CIRIA C753 SuDS Manual (2015)
 - Lincolnshire Development Roads and Sustainable Drainage Design Approach (2017)
- 1.7 The proposed Drainage Strategy is based on a maximum allowance of 40% climate change in accordance with the Supplementary Planning Document for Sustainable Drainage Systems.
- 1.8 A suitable foul water outfall by way of a pumped connection to Anglian Water assets west of the site has also been identified for the proposed development.
- 1.9 **From the findings of this report, the development proposals are considered appropriate for the site location; therefore, should be fully supported through the Planning process in terms of Flood Risk, Foul and Surface Water Drainage.**

Existing Site and Proposed Development

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Existing Site and Proposed Development

The following paragraphs provide detail on the existing and proposed future development site; in relation to location, land uses and topography.

- 2.1 The proposed development site is located on the east side of Littleworth Drove in Deeping St Nicholas. Deeping St Nicholas is situated approximately 7km south west of Spalding Town Centre and 17km north of Peterborough City Centre.
- 2.2 By road, Deeping St Nicholas is accessible from the north and south via the A1175. The A1175 connects to the A16 north east of the site; and the A15 to the south west of the site, providing direct links to Spalding, Peterborough and Stamford.
- 2.3 The existing site covers an area of 4.4ha and comprises undeveloped open land in the southern part of the site. The north western extent of the site is previously developed land with 2no. existing steel frame shed/store and associated hardstanding.
- 2.4 Site access is currently taken from Littleworth Drove via an existing tarmac and concrete access road which runs adjacent to the western site boundary.
- 2.5 The site is abutted; by agricultural land to the east and south. To the north and west of the site are existing residential areas.
- 2.6 The Topographic Survey of the site records the location and type of land features observed on site, including type of surface finishes, land boundaries, access routes, existing building outlines, vegetation and the geometric constraints of adjacent open channel ditches. All surveyed elevations were recorded at heights in metres above Ordnance Datum (mAOD). Ground levels and spot levels are also indicated on the drawing where they were recorded onsite.
- 2.7 In terms of existing drainage utilities, the Anglian Water Services (AWS) Wastewater Plan did not identify any public sewers within the site boundary. The nearest AWS foul and surface water sewers appear to serve the existing residential properties to the west of the site.
- 2.8 Inspection of the topographical survey indicates that the northern part of the site is positively drained via gullies and rainwater pipes. However, it is unclear where surface water runoff discharges to as no pipe runs have been identified.
- 2.9 In addition, the topographical survey identifies existing ditches adjacent to the south west and north eastern site boundaries.
- 2.10 The development proposals comprise 118 residential dwellings plus a village hall and associated infrastructure. Vehicular access will be taken from Littleworth Drove to the north west of the site. A copy of the Proposed Site Plan is provided in **Appendix B**.

Flood Risk

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Flood Risk

The following paragraphs will identify whether or not there are any flood risks associated with the future development which may affect the proposals impact on the surrounding environment.

- 3.1 Following the increased frequency of flooding during recent years, much work has been undertaken at a national level to assess the relationship between new development and flood risk. This work resulted in the publication of Planning Policy Statement 25 (PPS25) in early 2007 with an update being released in March 2010.
- 3.2 Alongside the release of the National Planning Policy Framework in March 2012 the Technical Guidance to the NPPF (TGNPPF) was released serving as a flood risk-based addendum to the national planning guidance. These documents replaced PPS25; however, many of the principles set out in PPS25 remain relevant. The TGNPPF has since been replaced by the Planning Practice Guidance which continues to follow the same principles.
- 3.3 Table 1 of the FRCC, PPG seeks to define Flood Risk Zones. An extract of this table is shown in Figure 3.1 which follows.
- 3.4 The definition of the flood zones noted in Figure 3.1, reaffirms the guidance and categorisation included within PPS25 and TGNPPF.
- 3.5 Table 2 of the FRCC, PPG defines 'Flood Risk Vulnerability Classification'. Residential dwellings are classified under the 'More Vulnerable' category, whilst the village hall is considered to be a 'Less Vulnerable' type of development.
- 3.6 The Environment Agency (EA) Flood Map demonstrates that the site lies partially in Flood Zones 2 and 3. A copy of the EA Flood Map covering the immediate surrounding area for the proposed development is shown in **Appendix C**.
- 3.7 Table 3 of the FRCC, PPG compares the suitability of a development within a particular Flood Zone based on its corresponding Flood Risk Vulnerability Classification. Residential dwellings and village halls are classified as 'More Vulnerable' and 'Less Vulnerable', respectively, and are deemed appropriate for development within Flood Zone 2. However, 'More Vulnerable' land uses within Flood Zone 3 require an Exception Test. It is noted that Table 3 of the FRCC, PPG does not show the application of the Sequential Test which should be applied first to guide development to Flood Zone 1, then Zone 2, and then Zone 3.
- 3.8 The Strategic Flood Risk Assessment (SFRA) for the area states that large parts of the South Holland district lie within Flood Zone 3 therefore it is not possible to guide development entirely to Flood Zone 1 and 2. Instead the suitability of the proposed development has been assessed with reference to the refined flood risk information (Hazard and Depth maps) from the South East Lincolnshire SFRA.

Flood Zone	Definition
Zone 1 Low Probability	Land having a less than 1 in 1,000 annual probability of river or sea flooding. (Shown as 'clear' on the Flood Map – all land outside Zones 2 and 3)
Zone 2 Medium Probability	Land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding; or land having between a 1 in 200 and 1 in 1,000 annual probability of sea flooding. (Land shown in light blue on the Flood Map)
Zone 3a High Probability	Land having a 1 in 100 or greater annual probability of river flooding; or Land having a 1 in 200 or greater annual probability of sea flooding. (Land shown in dark blue on the Flood Map)
Zone 3b The Functional Floodplain	This zone comprises land where water has to flow or be stored in times of flood. Local planning authorities should identify in their Strategic Flood Risk Assessments areas of functional floodplain and its boundaries accordingly, in agreement with the Environment Agency. (Not separately distinguished from Zone 3a on the Flood Map)

Figure 3.1: Flood Zone Definitions - Planning Practice Guidance Extract

Risk of Flooding to the Development from Known Sources

- 3.9 Notwithstanding the above, presented below is a summary and analysis of the potential for the site to flood from known sources.

Flooding from Rivers and/ or Watercourses

- 3.10 As previously mentioned, the topographical survey identifies existing ditches adjacent to the south west and north eastern site boundaries. Both ditches discharge to the River Welland, which is an EA main river located approximately 2.8km south east of the site.
- 3.11 It should be noted that the existing ditch to the south west of the site is known as Picks Home Farm drain and is managed by Welland and Deepings Internal Drainage Board (IDB).
- 3.12 The EA Flood Map shows that the majority of the application site (approximately 60%) is situated in Flood Zone 2, with the exception of the site's southern extent (approximately 40%) which lies in Flood Zone 3.
- 3.13 The UK Government website also provides the 'Flood risk from rivers or the sea' map, included in **Appendix D**, which indicates that the site is situated in an area at low to very low risk of flooding from rivers or the sea. Low risk means that each year this area has a chance of flooding of between 0.1% and 1%. This takes into account the effect of any flood defences in the area which reduce but not completely stop the chance of flooding as they be overtopped, or fail.
- 3.14 The SFRA Fluvial and Tidal Source Mapping indicates that only areas adjacent to the southern site boundary are within the fluvial flooding extent.
- 3.15 The SFRA also contains hazard mapping which includes modelled flooding consequences resulting from both overtopping and breaching of flood defences. Two scenarios were modelled; the 1 in 200 (0.5%) and 1 in 1000 (0.1%). This was undertaken for the 'present' day (2006 baseline) and 2115 (the year to which the final Defra sea level allowances related and allows for a lifetime of development).
- 3.16 From the Flood Map Plan provided in **Appendix E**, it can be seen that in the worst modelled scenario (2115); only areas in the southern extent of the site are classified as low hazard with peak flood depth and velocity of less than 0.25m and 0.3m/s, respectively. The low hazard classification represents the outer extent of where flood water would reach during the breach or overtopping scenario, but should not pose a hazard to people.

- 3.17 The proposed dwellings in these areas and the EA Flood Zone 3 which covers the southern extent of the site, will be constructed with a minimum finished floor level (FFL) of 300mm above the existing ground level in accordance with South East Lincolnshire Standing Advice Matrix. The proposed FFLs are shown on the Drainage Strategy Drawing provided in **Appendix K**.
- 3.18 Additional precautionary measures which may be considered at detailed design stage include; installing 600mm high floodgates on all ground entrances and raising flood resilience to a minimum of 600mm above the FFLs. This may be achieved through the use of water-resistant materials for floors, walls and fixtures and the siting of electrical controls, cables and appliances at a higher than normal level.

Flooding from the Sea

- 3.19 The nearest sea to the site is the North Sea, which is located some 30km to the north.
- 3.20 As confirmed by the SFRA Fluvial and Tidal Source Mapping, the site and immediate surrounding areas are not at risk of flooding from this source.

Flooding from Land

- 3.21 The potential for overland flows needs to be considered to ensure that neither the development nor adjacent land and/ or property, including that which may be under the responsibility of a third party is placed at an unacceptable risk of flooding.
- 3.22 From the EA Surface Water Flood map for the site, which is enclosed in **Appendix F**, the majority of the development site is considered to be at very low risk of surface water flooding. However, it is noted that there are very small isolated patches of land which are considered to be at low risk of surface water flooding.
- 3.23 It is therefore envisaged that; any surface water flows which may emanate on the site will be managed within the proposed drainage network following development of the site.

- 3.24 Final external levels will be designed to ensure that surface water flows are routed away from the vulnerable areas and towards the proposed drainage network.

Flooding from Groundwater

- 3.25 Inspection of the British Geological Survey (BGS) website identified that the site's underlying geology comprises Tidal Flat Deposits, 1 - Clay and Silt underlain by Oxford Clay Formation - Mudstone. A copy of the BGS map is provided in **Appendix G**.
- 3.26 Ground Investigation Report previously carried out on site identified water strikes at minimum depth of 1m bgl to 2.9m bgl.
- 3.27 However, it should be noted that the SFRA for the area did not highlight any groundwater flooding issues in the study area. In addition, there are also no known anecdotal reports of flooding from this source.
- 3.28 Prior to detailed design stage it will be necessary for groundwater monitoring to be undertaken in order to confirm the appropriateness of drainage methods proposed within this document. If there is a risk of groundwater ingress into the proposed drainage features, lining will be necessary.

Flooding from Sewers

- 3.29 A copy of the AWS Wastewater Plan illustrating the site extents and the immediate surrounding areas on Ordnance Survey (OS) mapping; together with appropriate locations of AWS assets is enclosed in **Appendix H**.
- 3.30 From the plan, it can be seen that there are no existing public sewers within or in the immediate vicinity of the site. The nearest foul water sewer is located in Herdmans Close to the west of the site. Further foul and surface water sewers are located within the Fallow Fields residential area to the south west of the site.
- 3.31 Based on the information above, the proposed site is not considered to be at risk of flooding from this source.

Flooding from Reservoirs, Canals and Other Artificial Sources

- 3.32 The EA Reservoir Flood Map was acquired by Woods Hardwick Infrastructure LLP on the 4th March 2020 from the EA's website. A copy of this mapping is enclosed in **Appendix I**. The application site and immediate surrounding area is shown to be at risk of flooding from reservoirs.
- 3.33 However, it should be noted that an occurrence of flooding from reservoirs is considered by the EA to be extremely rare. There has been no loss of life in the UK from reservoir flooding since 1925.

Risk of Flooding from the Proposed Development

- 3.34 Presented below is a summary and analysis of the potential for the site to exacerbate the risk of flooding to third parties both upstream and downstream.

Encroachment onto Floodplain

- 3.35 As outlined above, the site and wider surrounding area is already located in Flood Zones 2 and 3. Therefore it is not possible to guide development to Flood Zone 1.
- 3.36 The proposed dwellings in Flood Zone 3 will be constructed with a minimum finished floor level (FFL) of 300mm above the existing ground level in accordance with South East Lincolnshire Standing Advice Matrix.

Impedance of Flood Flows

- 3.37 For the reasons outlined in the paragraph above, there is very minimal risk of the proposed development impeding flood flows.

Contribution of Flood Flows by Development Drainage

- 3.38 As previously mentioned, the existing site covers an area of approximately 4.4ha.
- 3.39 The proposed development comprises a total of 118 residential dwellings plus a village hall with associated infrastructure such as access road and car parking. These elements will all contribute to the development's surface water discharge.

- 3.40 If considered appropriate at the detailed design stage, flooding routing measures will be incorporated to ensure that flood waters in excess of those for which the site has been designed to accommodate, will be routed away from the more vulnerable areas of the site.
- 3.41 The surface and foul water disposal strategies for the site are described in greater detail in the following 'Chapter 4 - Proposed Development Drainage Strategy'.

Climate Change

- 3.42 There is an increasing body of scientific evidence that suggests that the global climate is changing as a result of human activity. Past, present and future emissions of greenhouse gases are expected to cause significant climate change during this century.
- 3.43 The nature of climate change will vary for the UK. Projections of future climate change indicate that more frequent short-duration, high-intensity rainfall and more frequent periods of long-duration rainfall can be expected. These kinds of changes will have implications on river-flooding and also localised flash flooding.
- 3.44 The Planning Practice Guidance requires developments to consider the potential impacts of climate change. In February 2016 the EA released new guidance titled 'Flood risk assessments: climate change allowances' (FRA:CC), in which the peak rainfall intensity allowance in small and urban catchments is assessed.
- 3.45 Considering the above, the climate change allowance that the proposed development's drainage strategy will be based on, is set at a value of +40% ('Upper End' value i.e. 90th Percentile, taken from Table 2 of the FRA: CC, representing the total potential change anticipated for 2070 to 2115).

Proposed Development Drainage Strategy

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Proposed Development Drainage Strategy

The following paragraphs will provide detail on the proposed site generated foul and surface water disposal methods, design criteria, maintenance regimes and potential third-party legal agreements.

- 4.1 In addition to ensuring that the development is not at risk of flooding from external sources, it is also important to ensure that the scheme itself does not exacerbate flood risk for others. It is therefore essential that the arrangements for storm and foul water disposal are fully assessed to guarantee that the effects are mitigated and that there will be no impact on the existing land drainage regime.

Surface Water Drainage Strategy

- 4.2 All of the recent guidance on the arrangements for storm water disposal from new developments has encouraged the application of a hierarchy for surface water disposal. This has now been formalised in the Building Regulations Part H. The hierarchy is also the basis of the advice on surface water disposal contained within Lincolnshire County Council's 'Lincolnshire Development Roads and Sustainable Drainage Design Approach'.
- 4.3 The first choice for surface water disposal which should be pursued is via infiltration. Only where it has been determined that the ground conditions are not suitable should the second choice of disposal to a ditch and/ or watercourse be considered. If there is no alternative the third and last choice of disposal to the public sewer can be considered.

Method of Surface Water Discharge

Infiltration

- 4.4 The results of infiltration testing previously carried out on site indicates that infiltration techniques would not be viable for the discharge of surface water.
- 4.5 In light of the above, and in accordance with the hierarchy for surface water disposal, the next option to be explored is disposal via ditch and/watercourse.

Ditch and/ or Watercourse.

- 4.6 As previously mentioned, there is an existing ditch which flows towards the south east adjacent to the south western site boundary.

- 4.7 The topographical survey indicates that this ditch has an invert level of -0.82m AOD at the head of the ditch. It is therefore proposed to discharge surface water runoff from the development site to this ditch via gravity.

Discharge Strategy

Rainfall Data

- 4.8 The Flood Studies Report (FSR) methodology has been used in order to determine the requirements of the drainage network.

Runoff Rate

- 4.9 The impermeable area of the site has been calculated from the Proposed Site Plan. This impermeable area comprises surfaces occupied by the proposed buildings, private drives, car parking and the access road.

Attenuation Volume Requirement

- 4.10 The majority of the site is currently undeveloped; therefore, the proposed development will generate an increase in impermeable area. Based upon the current layout drawings, the proposed development would generate an impermeable area of approximately 1.979ha.
- 4.11 It is therefore necessary to ensure that sufficient attenuation is provided to accommodate the runoff from 1.979ha of impermeable surfacing during the 1 in 100 year (+40% climate change) storm event.
- 4.12 The associated drainage calculations can be found in **Appendix J**. These calculations demonstrate that the proposed attenuation basin is capable of accepting flows from the 100 year rainfall event, including 40% allowance for climate change, without flooding.

Method of Attenuation

- 4.13 In accordance with current guidelines and best practice, the Developer's best endeavours will be made to ensure that appropriate Sustainable Urban Drainage Systems (SuDS) are used wherever practicable. There are a number of primary methods available, the appropriateness of which has been considered and summarised in Table 4.2 below;

Table 4.1: SuDS Feasibility Consideration

SuDS System	Feasibility	Comments
Green Roofs	X	Cost is likely to adversely affect the scheme's viability.
Permeable Paving	X	Will not be incorporated within the currently proposed Drainage Strategy.
Soakways	X	Underlying ground conditions are considered unsuitable for infiltration methods.
Rainwater Harvesting	✓	Feasible and will be utilised where practicable, although not accounted for within currently proposed drainage Strategy or attenuation calculations.
Swales	X	Swales are currently proposed for surface water treatment.
Attenuation Basin	✓	An attenuation basin is currently proposed on this scheme to provide surface water storage and treatment.
Geo-cellular Storage Crates	✓	Geo-cellular crates will be used for surface water storage.

- 4.14 Based on the above assessment, which takes into account the underlying ground conditions, it is proposed to provide the majority of the site's surface water storage within the proposed attenuation basin and geo-cellular crates in the southern extent of the site.

Surface Water Conveyance

- 4.15 Surface water runoff from the proposed impermeable areas will generally be routed towards the existing ditch in the south western part of the site, via a series of gravity pipes interlinking the drainage catchments across the site. Along this network, an online swale and offline basin is proposed in the south western extent of the site to provide surface water storage. In addition, offline geo-cellular crates will be placed underneath one of the proposed parking courts in the southern part of the site.
- 4.16 The adoptable road network will discharge into grassed swales which run alongside the carriageway as shown on the drainage strategy drawing. The swales have perforated pipes underneath, which connect to the main surface water network serving the site. Ultimately, surface water flows from the adoptable road will be directed toward the ditch in the south western extent of the site.
- 4.17 A flow control chamber will be installed upstream of the outfall ditch to restrict the site runoff to 7l/s in all storm events up to and including the 1 in 100 year +40% climate change.
- 4.18 The proposed drainage network has been modelled using Causeway Flow. The results demonstrate that the features are capable of accepting flows from the 100 year storm event, including 40% allowance for climate change, without flooding. The proposed drainage strategy and associated calculations can be found in **Appendix K and J**, respectively.

Surface Water Drainage Maintenance

- 4.19 The arrangements for further maintenance of the surface water drainage system needs to be fully considered and, in that respect, it is anticipated that the proposed offline attenuation basin and geo-cellular crates would be maintained by a developer funded management company.
- 4.20 The proposed swales will be adopted by the Highway Authority whilst the perforated pipes beneath the swales will be maintained by Anglian Water.
- 4.21 A summary of the likely maintenance requirements for the proposed permeable paving and attenuation basin/grassed swales are provided in Tables 4.2 and 4.3 below.

Table 4.2: Recommended Maintenance for Swales/Attenuation Basin

Swales/Attenuation Basin	
Monitoring	Frequency
To be visually inspected after heavy rainfall events to ensure they are free of debris and litter.	As required
Regular Maintenance	
Litter and debris removal from the site	Monthly
Amenity grass cutting at 35 - 50mm	As required
Inspect and clear inlets, outlets, control structures and overflows	Monthly
Occasional Maintenance	
Remove leaf accumulation	As required
Remove sediments from inlets and structures	As required
Remedial Work	
Inspect and repair damage to inlets, outlets, banks and overflows	As required

Table 4.3: Recommended Maintenance for Geo-cellular Crates

Geo-cellular Crates		
Monitoring	Frequency	Responsibility
Inspect/check all inlets, outlets, vents and overflows to ensure that they are in good condition operating as designed.	Annually	Management Company
Survey inside the storage structure, where applicable to determine the extent of any sediment build up and remove if necessary.	Every 5 years or as required.	
Regular Maintenance		
Inspect and identify any areas that are not operating correctly. If required, take remedial action.	Monthly for 3 months, then annually	Management Company
Remove debris from the catchment surface (where it may cause risk to performance)	Monthly	
Occasional Maintenance		
Remove leaf accumulation	As required	Management Company
Remove sediments from inlets and structures	As required	
Remedial Work		
Repair/rehabilitate inlets, outlets, overflows and vents	As required	Management Company

- 4.22 It should be noted that the maintenance schedule should be considered indicative only. The frequency and type of maintenance tasks to be carried out should be reviewed as necessary to ensure that the schedule remains relevant to the nature and location of the proposed development.

Foul Water Drainage Strategy

- 4.23 The AWS Pre-Planning Assessment Report contained in **Appendix L**, confirms that the nearest practicable connection is to the 150mm diameter sewer at manhole 3502 in Haywain Drive. The report states this connection is acceptable as the foul sewerage system, at present, has available capacity for your site.
- 4.24 It is therefore proposed to pump foul water flows from the site into the aforementioned public foul water network in Haywain Drive. Within the site, foul flows will gravitate towards the proposed foul pumping station which will be placed adjacent to the western site boundary. The proposed drainage strategy and associated foul calculations can be found in **Appendix L and M**, respectively.
- 4.25 A suitable foul sewer network to discharge the proposed development, will be designed in accordance with AWS' adoptable standards, providing a direct point of connection to the aforementioned AWS foul sewer. Further details of this design will be provided at the detailed design stage.
- 4.26 Notwithstanding the above, in accordance with relevant drainage policy, AWS are obliged to accept foul water flows from a proposed development, subject to the site receiving planning consent. In anticipation that such a consent will be granted for the proposed scheme, it is expected that AWS will make the necessary arrangements to ensure that the required provision within their public foul sewer network and treatment works will be available at the time that the Applicant wishes to connect the site's foul sewers to the public foul network.

Foul Water Drainage Maintenance

- 4.27 In anticipation that the proposed development will be connected to the AWS public foul sewer network; it is considered reasonable to expect that AWS will act in their full capacity as the wastewater provider for the local area, to ensure that maintenance of their public sewers will be carried out as required from the point at which the existing private sewer outfalls connect to the public sewer network.

Summary and Conclusion

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Summary and Conclusions

The following paragraphs summarise the findings of this Flood Risk Assessment and Drainage Strategy. Details of foul and surface water outfalls, SuDS features and legal agreements are also provided.

- 5.1 This Flood Risk Assessment (FRA) and Drainage Strategy has been prepared by Woods Hardwick Infrastructure LLP on behalf of Ashwood Homes in support of a Full Planning Application for a proposed development comprising 118 residential dwellings and a village hall on a site known as 'Home Farm' in Deeping St Nicholas, Lincolnshire.
- 5.2 The application boundary for the site covers an area of approximately 4.4ha. Site access will be taken from Littleworth Drove to the north west of the site.
- 5.3 The majority of the application site is situated in Flood Zone 2. However, the southern part of the site lies within Flood Zone 3; therefore, having a 1 in 100 or greater an annual probability of river flooding or a 1 in 200 or greater annual probability of sea flooding.
- 3.46 However, the SFRA Fluvial and Tidal Source Mapping indicates that only areas adjacent to the southern site boundary are within the fluvial flooding extent.
- 5.4 All other potential sources of flooding to the proposed development have been considered and it has been demonstrated that the site will not be at any significant risk of flooding.
- 5.5 It has been demonstrated that the proposed development will not significantly exacerbate the risk of flooding to third parties either upstream or downstream from the site.
- 5.6 The surface water drainage strategy has been developed in accordance with the hierarchy for sustainable surface water disposal.
- 5.7 Given the site's underlying ground conditions it is considered that infiltration will not be suitable for discharge of surface water runoff at this site.
- 5.8 It is therefore proposed to discharge surface water runoff from the application site to an existing ditch which runs adjacent to the south western site boundary at a restricted runoff rate of 7l/s in all storm events up to and including the 1 in 100 year +40% climate change.
- 5.9 Surface water storage will be provided within the proposed attenuation basin in the southern western extent of the site. In addition, offline geo-cellular crates will be placed underneath one of the proposed parking courts in the southern part of the site.
- 5.10 It is proposed to pump foul flows from the site into the existing AWS foul sewer in Haywain Drive south west of the site.

- 5.11 AWS are obliged to accept foul water flows from a proposed development, subject to the site receiving planning consent. In anticipation that such a consent will be granted for the proposed development, it is expected that AWS will make the necessary arrangements to ensure that the required provision within their public foul sewer network and treatment works will be available at the time that the Applicant wishes to connect the site's foul sewers to the public foul network.
- 5.12 From the information provided within this report, it is concluded that there is no reason in terms of drainage or flood risk why the proposed development on 'Home Farm' Deeping St Nicholas, should not be fully supported through the planning process.

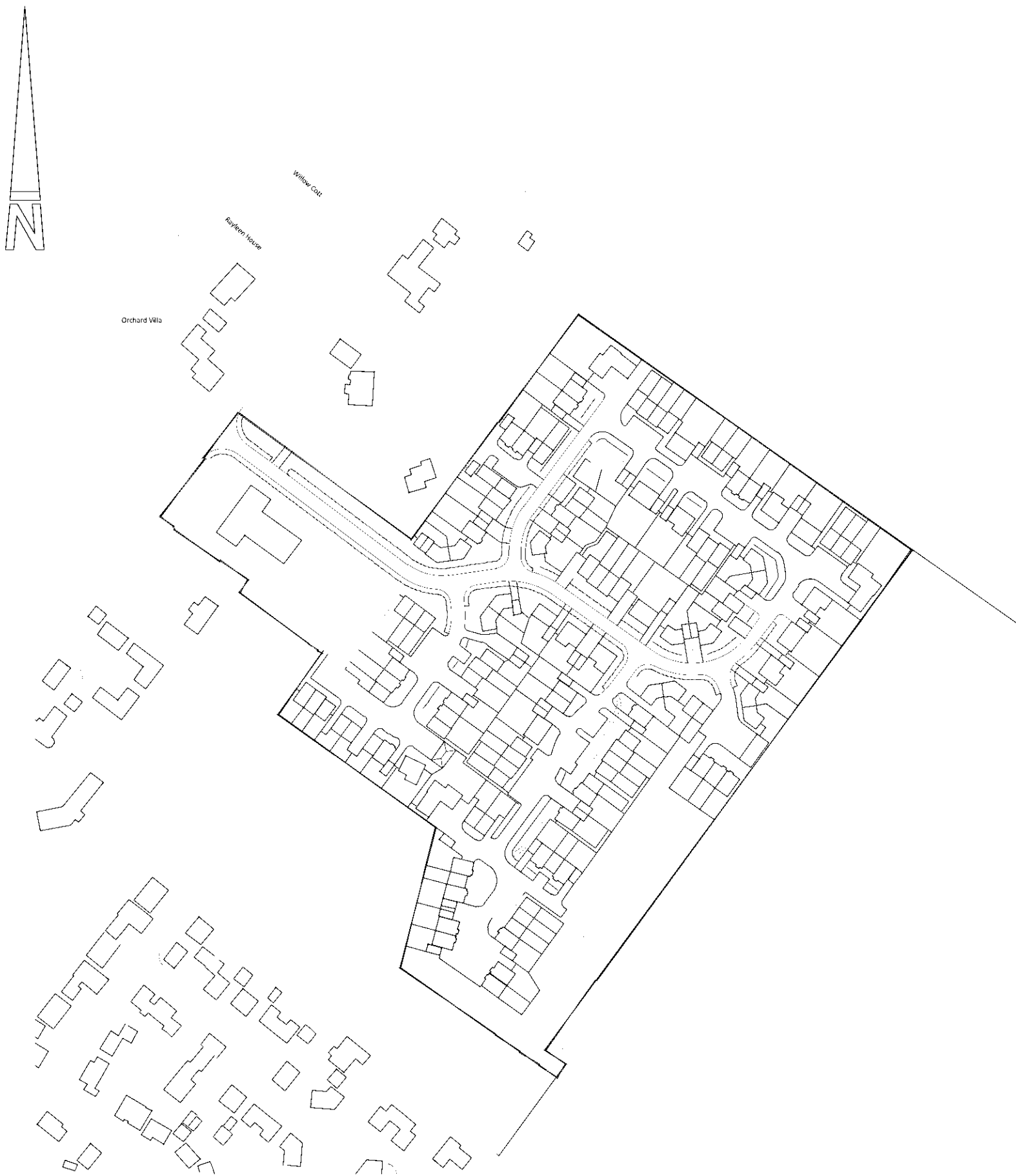
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Appendix A

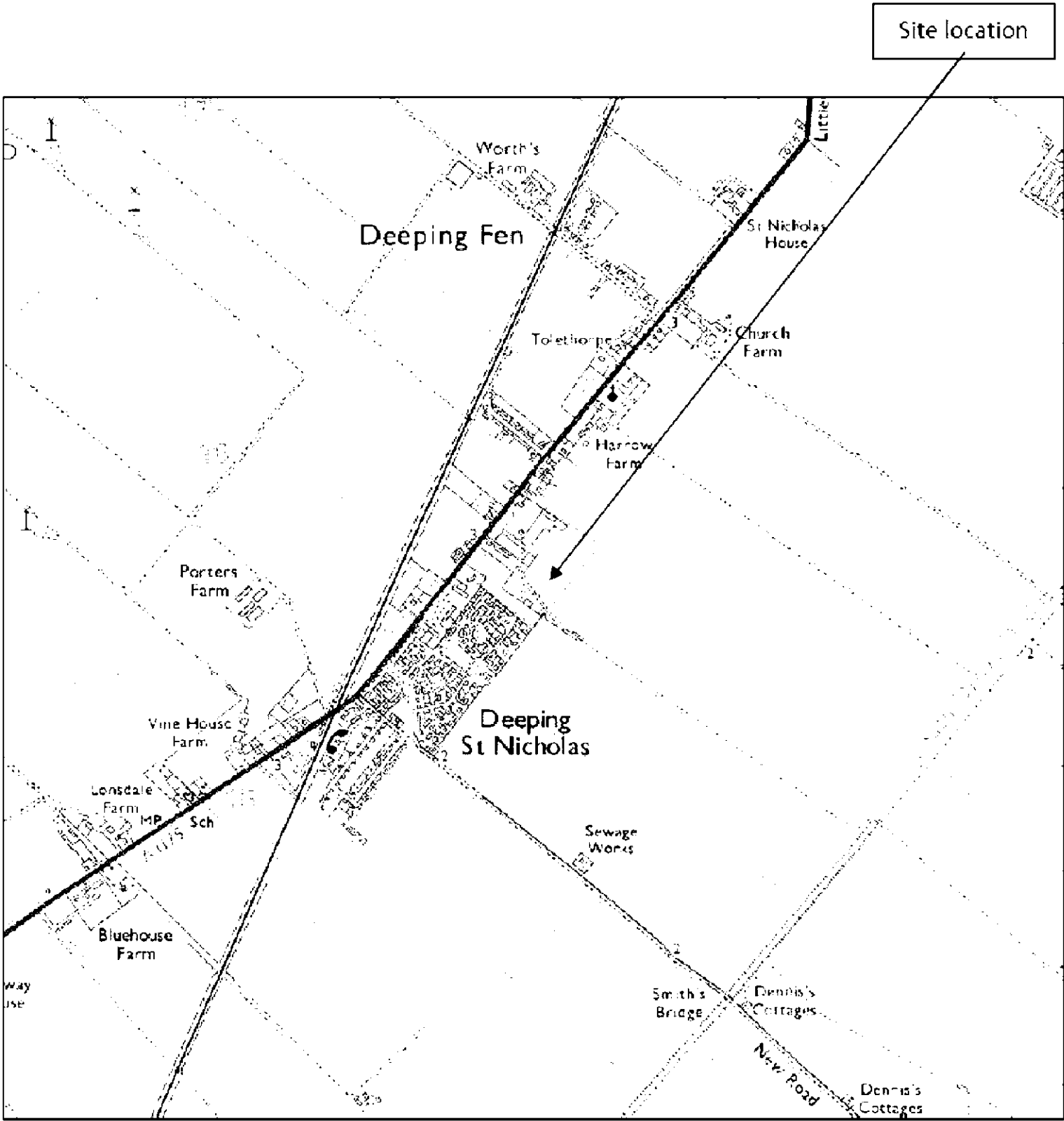
Site Location Plan

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General Arrangement
Scale 1:2000



Location Plan
Scale 1:50,000

NOTES

- Contractors must check all dimensions on site. Only figured dimensions are to be worked from. Discrepancies must be reported to the Architect or Engineer before proceeding.
© This drawing is copyright.
- Reproduced from OS Sitemap ® by permission of Ordnance Survey on behalf of The Controller of Her Majesty's Stationery Office. © Crown copyright 2008. All rights reserved. Licence number 100007126.
- Until technical approval has been obtained from the relevant authorities, all drawings are issued as preliminary and not for construction. Should the Contractor commence site work prior to the approval being given it is entirely at their own risk.
- Woods Hardwick cannot accept any discrepancies in terms of coordinates or any other information deciphered from .dwg files.
- The exact location and level of all existing sewers, drains and services are to be confirmed on site prior to the commencement of any works.

SAFETY, HEALTH AND ENVIRONMENTAL

There are no exceptional risks associated with these works. Refer to the Designers Risk Assessment for the full assessment of risks.

It is assumed that all works will be carried out by a competent Contractor, where appropriate, to an approved method statement.

REV	DESCRIPTION	DRN	CHD	DATE	
☐	PRELIMINARY	☐	INFORMATION	☐	TENDER
☐	CONSTRUCTION	☐	AS BUILT		
SCALE	AS SHOWN	DATE	MARCH 2020		
DRAWN	MR	CHK	MDF		
DRAWING NO.	18706-LEBC-5-100	REV	-		
TITLE	LAND EAST OF BEVILLS CLOSE&NORTH OF EASTMORE LANE, CAMBRIDGESHIRE				
DETAILS	LOCATION PLAN				

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Appendix B

Proposed Site Plan



Rayleen House

Orchard Villa

Drain

SITE LAYOUT



Appendix C

Environment Agency - Flood Map for Planning

Flood map for planning

Your reference
Deeping

Location (easting/northing)
521488/315666

Created
4 Mar 2020 11:35

Your selected location is in flood zone 3, an area with a high probability of flooding.

This means:

- you must complete a flood risk assessment for development in this area
- you should follow the Environment Agency's standing advice for carrying out a flood risk assessment (see www.gov.uk/guidance/flood-risk-assessment-standing-advice)

Notes

The flood map for planning shows river and sea flooding data only. It doesn't include other sources of flooding. It is for use in development planning and flood risk assessments.

This information relates to the selected location and is not specific to any property within it. The map is updated regularly and is correct at the time of printing.

The Open Government Licence sets out the terms and conditions for using government data.
<https://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/>

Flood map for planning

Your reference

Deeping

Location (easting/northing)

521488/315666

Scale

1:2500

Created

4 Mar 2020 11:35

- 
- Selected point
-
- 
- Flood zone 3
-
- 
- Flood zone 3: areas
-
- benefitting from flood
-
- defences
-
- Flood zone 2
-
- 
- Flood zone 1
-
- Flood defence
-
- 
- Main river
-
- Flood storage area


0 20 40 60m

Page 2 of 2

Appendix D

**Environment Agency - Flood Risk from Rivers
or the Sea Map**

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DEEPING ST NICHOLAS



Extent of flooding from rivers or the sea

● High Medium Low Very low

Appendix E

Flood Map Plan



- NOTES
- Contractors must check all dimensions on site. Only figured dimensions are to be worked from. Discrepancies must be reported to the Architect or Engineer before proceeding. © This drawing is copyright.
 - Reproduced from OS Sitemap © by permission of Ordnance Survey on behalf of The Controller of Her Majesty's Stationery Office. © Crown copyright 2008. All rights reserved. Licence number 100007126.
 - Until technical approval has been obtained from the relevant authorities, all drawings are issued as preliminary and not for construction. Should the Contractor commence site work prior to the approval being given it is entirely at their own risk.
 - Woods Hardwick cannot accept any discrepancies in terms of coordinates or any other information deciphered from .dwg files.
 - The exact location and level of all existing sewers, drains and services are to be confirmed on site prior to the commencement of any works.
 - South Holland District Council flood map and key shown "Residential peak depth district - Year 2115 1% Fluvial / 0.5% Tidal Event Probability" (2017).

SAFETY, HEALTH AND ENVIRONMENTAL

There are no exceptional risks associated with these works. Refer to the Designers Risk Assessment for the full assessment of risks.

It is assumed that all works will be carried out by a competent Contractor, where appropriate, to an approved method statement.

KEY

Peak Depth	
0m - 0.25m	
0.25m - 0.5m	
0.5m - 1m	
1m - 2m	
2m +	
Functional Floodplain	
South Holland District Boundary	

REV	DESCRIPTION	DRN	CHD	DATE	
☐	PRELIMINARY	☐	INFORMATION	☐	TENDER
☐	CONSTRUCTION	☐	AS BUILT		
SCALE	1:1250 @ A2	DATE	JULY 2020		
DRAWN	CG	CHK	MDF		
DRAWING NO.	18706-LEBC-5-SK004	REV	-		
TITLE	HOME FARM, DEEPIING ST. NICHOLAS, LINCOLNSHIRE				
DETAILS	FLOOD MAP PLAN				

Woods Hardwick

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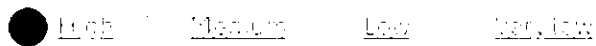
PLEASE CONSIDER THE ENVIRONMENT BEFORE PRINTING THIS DRAWING

Appendix F

Environment Agency - Surface Water Flood Map



10/10/1994



Appendix G

British Geological Survey Map

Woods Hardwick

Architecture Engineering Planning Surveying

Surface Geology

- Superficial only
- Bedrock only
- Bedrock and Superficial

Visible geology:
1:50 000 scale

Geology
Key

More on digital geology

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Go to
Location

Switch
Basemap

100%0%

Geology Transparency

Grid Ref: 514964, 313051

Superficial geology



Location

1:50 000 scale superficial deposits description:
Tidal Flat Deposits, 1 - Clay And Silt. Superficial Deposits formed up to 3 million years ago in the Quaternary Period. Local environment previously dominated by shorelines (U).

Setting: shorelines (U). These sedimentary deposits are shallow-marine in origin. They are detrital, generally coarse-grained forming beaches and bars in a coastal setting.

[Further details](#) [What are Superficial Deposits?](#)

[To purchase detailed geological reports for this area, try our GeoReports service](#)

Location

Location

Location

Appendix H

Anglian Water Services Wastewater Maps



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Date updated: 01/02/20

Scale: 1:1250
Map Centre: 521422.315692

Date: 06/03/20
Our Ref: 374715 - 2

Wastewater Plan A2
Powered by digdat

Foul Sewer	---	Outfall*	⊕	Sewage Treatment Works	□
Surface Sewer	---	Inlet*	⊖	Public Pumping Station	●
Combined Sewer	---	Manhole*	●	Decommissioned Pumping Station	●
Final Effluent Sewer	---				
Rising Main*	---				
Private Sewer*	---				
Decommissioned Sewer*	---				

*(Colour denotes effluent type)

i.ziecina@woodshardwick.com	
Deeping St Nicholas	



This plan is provided by Anglian Water pursuant to its obligations under the Water Industry Act 1991 sections 198 or 199. It must be used in conjunction with any search results attached. The information on this plan is based on data currently recorded but position must be regarded as approximate. Service pipes, private sewers and drains are generally not shown. Users of this map are strongly advised to commission their own survey of the area shown on the plan before carrying out any works. The actual position of all apparatus MUST be established by trial holes. No liability whatsoever, including liability for negligence, is accepted by Anglian Water for any error or inaccuracy or omission, including the failure to accurately record, or record at all, the location of any water main, discharge pipe, sewer or disposal main or any item of apparatus. This information is valid for the date printed. This plan is produced by Anglian Water Services Limited (c) Crown copyright and database rights 2020 Ordnance Survey 100022432. This map is to be used for the purposes of viewing the location of Anglian Water plant only. Any other uses of the map data or further copies is not permitted. This notice is not intended to exclude or restrict liability for death or personal injury resulting from negligence.

Manhole Reference	Liquid Type	Cover Level	Invert Level	Depth to Invert
2400	F	-	-	-
2401	F	-	-	-
2402	F	-	-	-
2403	F	-	-	-
2500	F	-	-	-
2501	F	-	-	-
2502	F	-	-	-
2503	F	-	-	-
2504	F	-	-	-
2505	F	-	-	-
2506	F	-	-	-
2600	F	-	-	-
2601	F	-	-	-
3400	F	-	-	-
3401	F	-	-	-
3402	F	-	-	-
3403	F	-	-	-
3404	F	-	-	-
3405	F	-	-	-
3406	F	-	-	-
3500	F	-	-	-
3501	F	-	-	-
3502	F	-	-	-
3503	F	-	-	-
3504	F	-	-	-
3505	F	-	-	-
3506	F	-	-	-
1451	S	-	-	-
1452	S	-	-	-
2451	S	-	-	-
2452	S	-	-	-
2453	S	-	-	-
2454	S	-	-	-
2455	S	-	-	-
2551	S	-	-	-
2552	S	-	-	-
2553	S	-	-	-
2554	S	-	-	-
2555	S	-	-	-
2556	S	-	-	-
3451	S	-	-	-
3452	S	-	-	-
3453	S	-	-	-
3454	S	-	-	-
3455	S	-	-	-
3456	S	-	-	-
3457	S	-	-	-
3551	S	-	-	-
3552	S	-	-	-
3553	S	-	-	-
3554	S	-	-	-
3555	S	-	-	-
3556	S	-	-	-

Manhole Reference	Liquid Type	Cover Level	Invert Level	Depth to Invert
-------------------	-------------	-------------	--------------	-----------------

Manhole Reference	Liquid Type	Cover Level	Invert Level	Depth to Invert
-------------------	-------------	-------------	--------------	-----------------

Appendix I

Environment Agency - Reservoir Flood Map

A.175

DEEPING ST NICHOLAS



Extent of flooding from reservoirs

Maximum extent of flooding

Appendix J

Drainage Calculations - Surface Water

Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	30.00
Return Period (years)	1	Maximum Rainfall (mm/hr)	50.0
Additional Flow (%)	0	Minimum Velocity (m/s)	1.00
FSR Region	England and Wales	Connection Type	Level Soffits
M5-60 (mm)	20.000	Minimum Backdrop Height (m)	0.200
Ratio-R	0.400	Preferred Cover Depth (m)	1.200
CV	0.750	Include Intermediate Ground	x
Time of Entry (mins)	5.00	Enforce best practice design rules	✓

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
1	0.360	5.00	2.796		521343.110	315778.338	1.646
2	0.000		2.947		521406.566	315730.840	1.997
3	0.120	5.00	2.436		521387.309	315676.783	1.736
4	0.100	5.00	2.540		521397.081	315670.270	1.865
5	0.000		2.582		521421.598	315704.872	2.007
6	0.040	5.00	2.642		521423.487	315717.057	2.092
7	0.062	5.00	2.652		521422.176	315729.422	2.127
8	0.165	5.00	2.411		521482.026	315794.552	1.661
9	0.090	5.00	2.347		521449.412	315751.327	1.747
10	0.000		2.346		521448.590	315732.572	1.896
11	0.160	5.00	2.323		521465.271	315726.693	1.923
12	0.250	5.00	2.505		521501.464	315783.399	1.730
13	0.016	5.00	1.925		521566.133	315737.789	1.725
14	0.000		1.787		521542.116	315703.133	1.812
15	0.130	5.00	1.628		521527.733	315694.359	1.803
16	0.000		1.842		521515.422	315693.993	2.042
17	0.088	5.00	2.119		521501.203	315700.193	2.369
18	0.000		2.095		521485.647	315680.566	2.395
19	0.075	5.00	2.110		521473.094	315669.619	2.460
20	0.093	5.00	1.670		521453.665	315635.053	2.120
21	0.230	5.00	2.030		521438.634	315615.343	2.530
22	0.000	5.00	2.000		521466.627	315593.354	2.400
23	0.000		1.802		521449.050	315605.449	2.452
24			1.984		521422.819	315569.117	2.734

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.000	1	2			1.150		0.200		450		
1.001	2	7					0.350				
2.000	3	4			0.700		0.025		525		
2.001	4	5					0.100				

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
1.000	1.015	161.4	48.0		1.547	0.360	0.0	167	0.889
1.001		484.1	47.7	1.547	1.602	0.360	0.0	94	1.969
2.000	1.027	222.2	16.3	1.211	1.340	0.120	0.0	95	0.608
2.001	1.081	234.0	29.8	1.340	1.482	0.220	0.0	125	0.750

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
2.002	5	6					0.025				
2.003	6	7					0.025				
1.002	7	10					0.075				
3.000	8	9			0.750		0.150		450		
3.001	9	10					0.075				
1.003	10	11					0.050				
1.004	11	17					0.575				
4.000	12	13			0.775			137.6	525		
4.001	13	14					0.150				
4.002	14	15					0.150		600		
4.003	15	16					0.025				
4.004	16	17					0.050				
1.005	17	18					0.050		600		
1.006	18	19					0.050				
1.007	19	20					0.100				
1.008	20	21					0.050				
1.009	21	23									
5.000	22	23			-0.400		0.250		600		
1.010	23	24					0.100				

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
2.002	1.002	216.8	29.8	1.482	1.567	0.220	0.0	130	0.711
2.003		215.9	34.8	1.567	1.602	0.260	0.0	141	0.739
1.002	1.183	256.1	87.9	1.602	1.371	0.682	0.0	211	1.077
3.000	1.064	169.2	22.4	1.211	1.297	0.165	0.0	109	0.745
3.001	1.280	203.6	34.6	1.297	1.371	0.255	0.0	124	0.962
1.003	1.185	256.5	118.6	1.371	1.398	0.937	0.0	250	1.162
1.004	2.543	550.6	136.0	1.398	1.769	1.097	0.0	177	2.122
4.000	1.907	412.9	33.9	1.205	1.200	0.250	0.0	101	1.172
4.001	1.331	288.1	35.7	1.200	1.212	0.266	0.0	124	0.918
4.002	2.297	649.4	35.4	1.212	1.203	0.266	0.0	93	1.253
4.003	1.090	308.2	51.9	1.203	1.442	0.396	0.0	166	0.820
4.004	1.377	389.3	51.2	1.442	1.769	0.396	0.0	146	0.967
1.005	1.081	305.6	191.0	1.769	1.795	1.581	0.0	344	1.138
1.006	1.328	375.6	188.3	1.795	1.860	1.581	0.0	300	1.329
1.007	1.216	344.0	190.5	1.860	1.520	1.656	0.0	319	1.246
1.008	1.087	307.2	196.5	1.520	1.930	1.749	0.0	350	1.150
1.009	2.488	703.6	221.1	1.930	1.852	1.979	0.0	230	2.214
5.000	2.637	745.5	0.0	1.800	1.852	0.000	0.0	0	0.000
1.010	1.144	323.3	213.2	1.852	2.134	1.979	0.0	357	1.218

Simulation Settings

Rainfall Methodology	FSR	Skip Steady State	✓
FSR Region	England and Wales	Drain Down Time (mins)	240
M5-60 (mm)	20.000	Additional Storage (m³/ha)	20.0
Ratio-R	0.400	Check Discharge Rate(s)	✓
Summer CV	0.750	Check Discharge Volume	✓
Winter CV	0.840	100 year 360 minute (m³)	
Analysis Speed	Normal		

Storm Durations											
15	30	60	120	180	240	360	480	600	720	960	1440
Return Period (years)	Climate Change (CC %)		Additional Area (A %)		Additional Flow (Q %)						
2	0		0		0						
30	0		0		0						
100	40		0		0						

Pre-development Discharge Rate

Site Makeup	Greenfield	Growth Factor 30 year	1.95
Greenfield Method	IH124	Growth Factor 100 year	2.48
Positively Drained Area (ha)		Betterment (%)	0
SAAR (mm)		QBar	
Soil Index	1	Q 1 year (l/s)	
SPR	0.10	Q 30 year (l/s)	
Region	1	Q 100 year (l/s)	
Growth Factor 1 year	0.85		

Pre-development Discharge Volume

Site Makeup	Greenfield	Return Period (years)	100
Greenfield Method	FSR/FEH	Climate Change (%)	0
Positively Drained Area (ha)		Storm Duration (mins)	360
Soil Index	1	Betterment (%)	0
SPR	0.10	PR	
CWI		Runoff Volume (m³)	

Node 23 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	-0.650	Product Number	CTL-SHE-0110-7000-1900-7000
Design Depth (m)	1.900	Min Outlet Diameter (m)	0.150
Design Flow (l/s)	7.0	Min Node Diameter (mm)	1200

Node 22 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	0.200
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	
Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	455.0	0.0	1.500	1130.0	0.0
			1.501	0.0	0.0

Node 14 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	0.675
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	13
Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	144.0	0.0	0.800	144.0	0.0
			0.801	0.0	0.0

Results for 2 year Critical Storm Duration. Lowest mass balance: 95.27%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	1	10	1.349	0.199	65.6	1.1561	0.0000	OK
15 minute winter	2	11	1.065	0.115	64.1	0.1639	0.0000	OK
15 minute winter	3	11	0.830	0.130	21.9	0.4100	0.0000	OK
15 minute winter	4	12	0.822	0.147	39.6	0.4177	0.0000	OK
15 minute winter	5	12	0.809	0.234	37.9	0.4131	0.0000	OK
15 minute winter	6	11	0.804	0.254	40.6	0.5451	0.0000	OK
15 minute winter	7	11	0.798	0.273	114.2	0.6419	0.0000	OK
15 minute winter	8	10	0.874	0.124	30.1	0.4235	0.0000	OK
15 minute winter	9	11	0.759	0.159	45.4	0.3914	0.0000	OK
15 minute winter	10	11	0.729	0.279	155.7	0.4936	0.0000	OK
360 minute winter	11	344	0.605	0.205	28.4	0.7042	0.0000	OK
15 minute winter	12	10	0.890	0.115	45.6	0.5339	0.0000	OK
360 minute winter	13	344	0.613	0.413	6.9	0.8059	0.0000	OK
360 minute winter	14	344	0.612	0.637	5.1	1.1254	0.0000	
360 minute winter	15	344	0.615	0.790	7.0	2.5341	0.0000	
360 minute winter	16	336	0.605	0.805	6.6	1.4218	0.0000	
360 minute winter	17	344	0.606	0.856	36.2	2.1489	0.0000	
360 minute winter	18	352	0.607	0.907	36.0	1.6030	0.0000	
360 minute winter	19	352	0.605	0.955	36.9	2.2700	0.0000	
360 minute winter	20	352	0.606	1.056	39.7	2.7918	0.0000	
360 minute winter	21	352	0.606	1.106	45.2	3.9638	0.0000	
360 minute winter	22	352	0.606	1.006	39.3	223.5962	0.0000	
360 minute winter	23	360	0.606	1.256	46.4	2.2187	0.0000	
15 minute summer	24	1	-0.750	0.000	6.5	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	1	1.000	2	64.1	1.315	0.397	3.9109	
15 minute winter	2	1.001	7	64.5	1.543	0.133	0.7753	
15 minute winter	3	2.000	4	21.4	0.487	0.096	0.5315	
15 minute winter	4	2.001	5	37.9	0.643	0.162	3.0180	
15 minute winter	5	2.002	6	34.7	0.401	0.160	1.2090	
15 minute winter	6	2.003	7	41.6	0.442	0.193	1.3472	
15 minute winter	7	1.002	10	113.5	0.991	0.443	3.0618	
15 minute winter	8	3.000	9	29.0	0.700	0.171	2.3103	
15 minute winter	9	3.001	10	43.8	0.821	0.215	1.1263	
15 minute winter	10	1.003	11	157.2	1.630	0.613	1.7172	
360 minute winter	11	1.004	17	28.4	0.968	0.052	6.5673	
15 minute winter	12	4.000	13	44.7	1.133	0.108	6.4982	
360 minute winter	13	4.001	14	5.1	0.499	0.018	8.3932	
360 minute winter	14	4.002	15	3.9	0.318	0.006	4.7457	
360 minute winter	15	4.003	16	6.6	0.367	0.022	3.4691	
360 minute winter	16	4.004	17	5.8	0.206	0.015	4.3694	
360 minute winter	17	1.005	18	36.0	0.502	0.118	7.0543	
360 minute winter	18	1.006	19	35.0	0.509	0.093	4.6916	
360 minute winter	19	1.007	20	37.3	0.471	0.108	11.1691	
360 minute winter	20	1.008	21	39.3	0.552	0.128	6.9819	
360 minute winter	21	1.009	23	46.4	0.299	0.066	4.0466	
360 minute winter	22	5.000	23	-39.3	-0.140	-0.053	6.0099	
360 minute winter	23	Hydro-Brake®	24	6.5				198.9

Results for 30 year Critical Storm Duration. Lowest mass balance: 95.27%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	1	10	1.436	0.286	124.3	1.6584	0.0000	OK
15 minute winter	2	10	1.122	0.172	121.6	0.2457	0.0000	OK
15 minute winter	3	13	1.031	0.331	41.4	1.0421	0.0000	OK
15 minute winter	4	13	1.031	0.356	71.0	1.0110	0.0000	OK
15 minute winter	5	13	1.022	0.447	59.4	0.7904	0.0000	OK
15 minute winter	6	13	1.014	0.464	60.2	0.9977	0.0000	OK
15 minute winter	7	12	1.005	0.480	198.9	1.1273	0.0000	OK
15 minute winter	8	13	1.006	0.256	57.0	0.8736	0.0000	OK
15 minute winter	9	14	0.983	0.383	86.8	0.9440	0.0000	OK
15 minute winter	10	14	0.977	0.527	260.5	0.9310	0.0000	
600 minute winter	11	570	0.970	0.570	33.0	1.9555	0.0000	
480 minute winter	12	472	0.975	0.200	9.4	0.9328	0.0000	OK
480 minute winter	13	472	0.974	0.774	10.0	1.5125	0.0000	
480 minute winter	14	472	0.974	0.999	11.5	44.8877	0.0000	
480 minute winter	15	472	0.976	1.151	12.3	3.6947	0.0000	
480 minute winter	16	456	0.968	1.168	13.9	2.0642	0.0000	
720 minute winter	17	705	0.972	1.222	38.0	3.0676	0.0000	
600 minute winter	18	570	0.971	1.271	43.3	2.2459	0.0000	
600 minute winter	19	585	0.968	1.318	45.5	3.1333	0.0000	
600 minute winter	20	585	0.969	1.419	48.0	3.7524	0.0000	
600 minute winter	21	585	0.968	1.468	55.1	5.2641	0.0000	
600 minute winter	22	585	0.969	1.369	48.8	485.3558	0.0000	
600 minute winter	23	585	0.968	1.618	54.6	2.8588	0.0000	
15 minute summer	24	1	-0.750	0.000	6.5	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	1	1.000	2	121.6	1.569	0.753	6.4064	
15 minute winter	2	1.001	7	128.0	1.592	0.264	1.5256	
15 minute winter	3	2.000	4	36.5	0.529	0.164	1.7567	
15 minute winter	4	2.001	5	59.4	0.673	0.254	7.4617	
15 minute winter	5	2.002	6	51.3	0.376	0.237	2.4541	
15 minute winter	6	2.003	7	59.7	0.402	0.277	2.5361	
15 minute winter	7	1.002	10	191.9	1.083	0.749	5.6183	
15 minute winter	8	3.000	9	55.7	0.784	0.329	6.3825	
15 minute winter	9	3.001	10	78.2	0.844	0.384	2.8373	
15 minute winter	10	1.003	11	236.0	1.590	0.920	3.8196	
600 minute winter	11	1.004	17	31.5	0.861	0.057	9.6452	
480 minute winter	12	4.000	13	9.4	0.543	0.023	11.5402	
480 minute winter	13	4.001	14	9.1	0.449	0.032	9.1090	
480 minute winter	14	4.002	15	8.0	0.323	0.012	4.7457	
480 minute winter	15	4.003	16	13.9	0.364	0.045	3.4691	
480 minute winter	16	4.004	17	11.3	0.203	0.029	4.3694	
720 minute winter	17	1.005	18	37.6	0.494	0.123	7.0543	
600 minute winter	18	1.006	19	43.1	0.523	0.115	4.6916	
600 minute winter	19	1.007	20	45.1	0.464	0.131	11.1691	
600 minute winter	20	1.008	21	47.9	0.486	0.156	6.9819	
600 minute winter	21	1.009	23	54.6	0.295	0.078	4.0466	
600 minute winter	22	5.000	23	-48.8	-0.173	-0.065	6.0099	
600 minute winter	23	Hydro-Brake®	24	6.5				302.3

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 95.27%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	1	12	2.656	1.506	226.0	8.7448	0.0000	
15 minute winter	2	12	2.409	1.459	191.2	2.0882	0.0000	
15 minute winter	3	12	2.384	1.684	75.3	5.3041	0.0000	
15 minute winter	4	12	2.381	1.706	110.3	4.8454	0.0000	
15 minute winter	5	12	2.362	1.787	98.6	3.1574	0.0000	
15 minute winter	6	12	2.350	1.800	115.5	3.8705	0.0000	
15 minute winter	7	12	2.337	1.812	315.4	4.2590	0.0000	
15 minute winter	8	12	2.239	1.489	103.6	5.0900	0.0000	
15 minute winter	9	12	2.209	1.609	136.9	3.9624	0.0000	
15 minute winter	10	12	2.170	1.720	431.1	3.0401	0.0000	
15 minute winter	11	12	1.931	1.531	507.6	5.2538	0.0000	
30 minute winter	12	23	1.719	0.944	121.8	4.3973	0.0000	
30 minute winter	13	23	1.665	1.465	118.4	2.8606	0.0000	
30 minute winter	14	23	1.618	1.643	305.1	118.2468	0.0000	
30 minute winter	15	23	1.606	1.781	218.8	5.7164	0.0000	
30 minute winter	16	23	1.594	1.794	162.3	3.1701	0.0000	
960 minute winter	17	930	1.595	1.845	46.3	4.6318	0.0000	
960 minute winter	18	930	1.594	1.894	45.2	3.3464	0.0000	
960 minute winter	19	930	1.593	1.943	48.7	4.6187	0.0000	
960 minute winter	20	945	1.593	2.043	51.6	5.4043	0.0000	
960 minute winter	21	945	1.594	2.094	60.5	7.5057	0.0000	
960 minute winter	22	945	1.593	1.993	53.2	1073.9070	0.0000	
960 minute winter	23	930	1.592	2.242	59.5	3.9621	0.0000	
15 minute summer	24	1	-0.750	0.000	6.4	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	1	1.000	2	191.2	1.611	1.185	12.5589	
15 minute winter	2	1.001	7	171.7	1.617	0.355	2.4834	
15 minute winter	3	2.000	4	53.9	0.545	0.243	2.5371	
15 minute winter	4	2.001	5	98.6	0.707	0.421	9.1613	
15 minute winter	5	2.002	6	100.7	0.466	0.465	2.6639	
15 minute winter	6	2.003	7	120.7	0.559	0.559	2.6862	
15 minute winter	7	1.002	10	312.0	1.444	1.218	5.7467	
15 minute winter	8	3.000	9	80.4	0.816	0.475	8.5796	
15 minute winter	9	3.001	10	119.2	0.859	0.585	2.9745	
15 minute winter	10	1.003	11	429.0	1.986	1.673	3.8210	
15 minute winter	11	1.004	17	503.1	2.329	0.914	9.6452	
30 minute winter	12	4.000	13	111.1	1.104	0.269	17.0958	
30 minute winter	13	4.001	14	118.9	0.858	0.413	9.1090	
30 minute winter	14	4.002	15	-213.5	-0.758	-0.329	4.7457	
30 minute winter	15	4.003	16	-158.9	0.564	-0.516	3.4691	
30 minute winter	16	4.004	17	-162.3	-0.576	-0.417	4.3694	
960 minute winter	17	1.005	18	45.2	0.518	0.148	7.0543	
960 minute winter	18	1.006	19	45.8	0.529	0.122	4.6916	
960 minute winter	19	1.007	20	48.0	0.454	0.139	11.1691	
960 minute winter	20	1.008	21	51.7	0.558	0.168	6.9819	
960 minute winter	21	1.009	23	59.5	0.266	0.085	4.0466	
960 minute winter	22	5.000	23	-53.2	-0.189	-0.071	6.0099	
960 minute winter	23	Hydro-Brake®	24	7.6				477.6

Results for 2 year 15 minute summer. 255 minute analysis at 1 minute timestep. Mass balance: 97.04%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	1	10	1.345	0.195	62.3	1.1294	0.0000	OK
15 minute summer	2	11	1.061	0.111	61.3	0.1595	0.0000	OK
15 minute summer	3	10	0.826	0.126	20.8	0.3975	0.0000	OK
15 minute summer	4	11	0.815	0.140	37.7	0.3976	0.0000	OK
15 minute summer	5	12	0.802	0.227	36.8	0.4011	0.0000	OK
15 minute summer	6	12	0.797	0.247	39.3	0.5306	0.0000	OK
15 minute summer	7	11	0.791	0.266	110.0	0.6244	0.0000	OK
15 minute summer	8	10	0.871	0.121	28.6	0.4151	0.0000	OK
15 minute summer	9	11	0.754	0.154	43.5	0.3790	0.0000	OK
15 minute summer	10	11	0.722	0.272	149.0	0.4812	0.0000	OK
15 minute summer	11	11	0.605	0.205	172.6	0.7021	0.0000	OK
15 minute summer	12	10	0.888	0.113	43.3	0.5242	0.0000	OK
15 minute summer	13	14	0.471	0.271	72.9	0.5288	0.0000	OK
15 minute summer	14	13	0.437	0.462	96.6	0.8160	0.0000	OK
15 minute summer	15	15	0.432	0.607	88.7	1.9494	0.0000	
15 minute summer	16	15	0.434	0.634	62.8	1.1211	0.0000	
15 minute summer	17	15	0.434	0.684	221.0	1.7178	0.0000	
15 minute summer	18	15	0.414	0.714	171.0	1.2608	0.0000	
15 minute summer	19	15	0.395	0.745	173.1	1.7704	0.0000	
15 minute summer	20	15	0.360	0.810	180.0	2.1429	0.0000	
15 minute summer	21	24	0.339	0.839	211.0	3.0080	0.0000	
15 minute summer	22	26	0.339	0.739	225.1	69.2917	0.0000	
15 minute summer	23	27	0.339	0.989	225.9	1.7481	0.0000	
15 minute summer	24	1	-0.750	0.000	6.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	1	1.000	2	61.3	1.300	0.380	3.7867	
15 minute summer	2	1.001	7	61.7	1.555	0.127	0.7402	
15 minute summer	3	2.000	4	20.5	0.481	0.092	0.5035	
15 minute summer	4	2.001	5	36.8	0.665	0.157	2.8724	
15 minute summer	5	2.002	6	33.3	0.403	0.154	1.1657	
15 minute summer	6	2.003	7	39.8	0.449	0.184	1.3010	
15 minute summer	7	1.002	10	109.0	0.980	0.426	2.9614	
15 minute summer	8	3.000	9	27.9	0.698	0.165	2.2249	
15 minute summer	9	3.001	10	42.2	0.837	0.207	1.0769	
15 minute summer	10	1.003	11	151.0	1.611	0.589	1.6881	
15 minute summer	11	1.004	17	174.4	1.585	0.317	6.4444	
15 minute summer	12	4.000	13	43.1	1.151	0.104	5.1716	
15 minute summer	13	4.001	14	55.5	0.954	0.193	5.7137	
15 minute summer	14	4.002	15	-55.0	0.484	-0.085	4.3315	
15 minute summer	15	4.003	16	-71.0	0.532	-0.230	3.4691	
15 minute summer	16	4.004	17	-62.8	0.253	-0.161	4.3694	
15 minute summer	17	1.005	18	171.0	1.049	0.559	7.0543	
15 minute summer	18	1.006	19	170.2	0.987	0.453	4.6916	
15 minute summer	19	1.007	20	174.5	0.840	0.507	11.1691	
15 minute summer	20	1.008	21	191.7	0.681	0.624	6.9819	
15 minute summer	21	1.009	23	225.9	0.802	0.321	4.0466	
15 minute summer	22	5.000	23	-225.1	-0.799	-0.302	6.0099	
15 minute summer	23	Hydro-Brake®	24	6.5				83.4

Results for 2 year 15 minute winter. 255 minute analysis at 1 minute timestep. Mass balance: 97.23%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	1	10	1.349	0.199	65.6	1.1561	0.0000	OK
15 minute winter	2	11	1.065	0.115	64.1	0.1639	0.0000	OK
15 minute winter	3	11	0.830	0.130	21.9	0.4100	0.0000	OK
15 minute winter	4	12	0.822	0.147	39.6	0.4177	0.0000	OK
15 minute winter	5	12	0.809	0.234	37.9	0.4131	0.0000	OK
15 minute winter	6	11	0.804	0.254	40.6	0.5451	0.0000	OK
15 minute winter	7	11	0.798	0.273	114.2	0.6419	0.0000	OK
15 minute winter	8	10	0.874	0.124	30.1	0.4235	0.0000	OK
15 minute winter	9	11	0.759	0.159	45.4	0.3914	0.0000	OK
15 minute winter	10	11	0.729	0.279	155.7	0.4936	0.0000	OK
15 minute winter	11	11	0.604	0.204	181.9	0.6996	0.0000	OK
15 minute winter	12	10	0.890	0.115	45.6	0.5339	0.0000	OK
15 minute winter	13	13	0.520	0.320	66.4	0.6243	0.0000	OK
15 minute winter	14	14	0.523	0.548	53.7	0.9687	0.0000	OK
15 minute winter	15	14	0.520	0.695	110.0	2.2316	0.0000	
15 minute winter	16	14	0.516	0.716	133.5	1.2645	0.0000	
15 minute winter	17	14	0.511	0.761	211.1	1.9105	0.0000	
15 minute winter	18	14	0.474	0.774	199.4	1.3683	0.0000	
15 minute winter	19	14	0.446	0.796	202.0	1.8912	0.0000	
15 minute winter	20	14	0.394	0.844	205.2	2.2327	0.0000	
15 minute winter	21	25	0.369	0.869	219.1	3.1146	0.0000	
15 minute winter	22	27	0.369	0.769	209.6	84.9289	0.0000	
15 minute winter	23	27	0.368	1.018	216.0	1.7985	0.0000	
15 minute winter	24	1	-0.750	0.000	6.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	1	1.000	2	64.1	1.315	0.397	3.9109	
15 minute winter	2	1.001	7	64.5	1.543	0.133	0.7753	
15 minute winter	3	2.000	4	21.4	0.487	0.096	0.5315	
15 minute winter	4	2.001	5	37.9	0.643	0.162	3.0180	
15 minute winter	5	2.002	6	34.7	0.401	0.160	1.2090	
15 minute winter	6	2.003	7	41.6	0.442	0.193	1.3472	
15 minute winter	7	1.002	10	113.5	0.991	0.443	3.0618	
15 minute winter	8	3.000	9	29.0	0.700	0.171	2.3103	
15 minute winter	9	3.001	10	43.8	0.821	0.215	1.1263	
15 minute winter	10	1.003	11	157.2	1.630	0.613	1.7172	
15 minute winter	11	1.004	17	182.9	1.589	0.332	6.5411	
15 minute winter	12	4.000	13	44.7	1.133	0.108	6.4982	
15 minute winter	13	4.001	14	53.7	0.968	0.186	6.8266	
15 minute winter	14	4.002	15	55.4	0.497	0.085	4.6471	
15 minute winter	15	4.003	16	64.3	0.553	0.209	3.4691	
15 minute winter	16	4.004	17	-133.5	-0.501	-0.343	4.3694	
15 minute winter	17	1.005	18	199.4	1.046	0.652	7.0543	
15 minute winter	18	1.006	19	196.6	1.001	0.523	4.6916	
15 minute winter	19	1.007	20	198.4	0.816	0.577	11.1691	
15 minute winter	20	1.008	21	202.3	0.718	0.659	6.9819	
15 minute winter	21	1.009	23	216.0	0.767	0.307	4.0466	
15 minute winter	22	5.000	23	-209.6	-0.744	-0.281	6.0099	
15 minute winter	23	Hydro-Brake®	24	6.5				81.3

Results for 2 year 30 minute summer. 270 minute analysis at 1 minute timestep. Mass balance: 99.43%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute summer	1	18	1.335	0.185	55.5	1.0714	0.0000	OK
30 minute summer	2	18	1.054	0.104	55.4	0.1493	0.0000	OK
30 minute summer	3	18	0.819	0.119	18.5	0.3743	0.0000	OK
30 minute summer	4	18	0.806	0.131	33.8	0.3730	0.0000	OK
30 minute summer	5	19	0.789	0.214	33.4	0.3774	0.0000	OK
30 minute summer	6	19	0.784	0.234	36.9	0.5022	0.0000	OK
30 minute summer	7	19	0.778	0.253	100.2	0.5935	0.0000	OK
30 minute summer	8	18	0.865	0.115	25.4	0.3940	0.0000	OK
30 minute summer	9	18	0.743	0.143	39.1	0.3525	0.0000	OK
30 minute summer	10	19	0.710	0.260	137.7	0.4586	0.0000	OK
30 minute summer	11	19	0.589	0.189	159.6	0.6491	0.0000	OK
30 minute summer	12	18	0.881	0.106	38.5	0.4945	0.0000	OK
30 minute summer	13	20	0.511	0.311	85.9	0.6083	0.0000	OK
30 minute summer	14	21	0.502	0.527	115.7	0.9316	0.0000	OK
30 minute summer	15	21	0.509	0.684	98.6	2.1953	0.0000	
30 minute summer	16	21	0.512	0.712	88.8	1.2588	0.0000	
30 minute summer	17	21	0.515	0.765	197.4	1.9206	0.0000	
30 minute summer	18	21	0.480	0.780	200.5	1.3786	0.0000	
30 minute summer	19	21	0.451	0.801	206.8	1.9044	0.0000	
30 minute summer	20	39	0.400	0.850	214.2	2.2475	0.0000	
30 minute summer	21	37	0.399	0.899	232.0	3.2244	0.0000	
30 minute summer	22	41	0.397	0.797	224.0	100.0940	0.0000	
30 minute summer	23	37	0.398	1.048	230.2	1.8521	0.0000	
30 minute summer	24	1	-0.750	0.000	6.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
30 minute summer	1	1.000	2	55.4	1.263	0.343	3.5266	
30 minute summer	2	1.001	7	54.9	1.511	0.113	0.6711	
30 minute summer	3	2.000	4	18.4	0.471	0.083	0.4623	
30 minute summer	4	2.001	5	33.4	0.620	0.143	2.6326	
30 minute summer	5	2.002	6	31.3	0.383	0.144	1.0804	
30 minute summer	6	2.003	7	37.0	0.421	0.172	1.2153	
30 minute summer	7	1.002	10	100.0	0.957	0.390	2.7805	
30 minute summer	8	3.000	9	25.2	0.674	0.149	2.0400	
30 minute summer	9	3.001	10	37.9	0.802	0.186	0.9808	
30 minute summer	10	1.003	11	137.2	1.566	0.535	1.5597	
30 minute summer	11	1.004	17	158.8	1.465	0.288	6.3854	
30 minute summer	12	4.000	13	38.4	1.087	0.093	6.3480	
30 minute summer	13	4.001	14	-47.1	0.864	-0.164	6.4755	
30 minute summer	14	4.002	15	-75.4	0.437	-0.116	4.5829	
30 minute summer	15	4.003	16	-78.6	0.461	-0.255	3.4691	
30 minute summer	16	4.004	17	-88.8	-0.336	-0.228	4.3694	
30 minute summer	17	1.005	18	200.5	0.860	0.656	7.0543	
30 minute summer	18	1.006	19	200.6	0.827	0.534	4.6916	
30 minute summer	19	1.007	20	206.6	0.734	0.601	11.1691	
30 minute summer	20	1.008	21	213.1	0.757	0.694	6.9819	
30 minute summer	21	1.009	23	230.2	0.817	0.327	4.0466	
30 minute summer	22	5.000	23	-224.0	-0.795	-0.300	6.0099	
30 minute summer	23	Hydro-Brake®	24	6.5				84.7

Results for 2 year 30 minute winter. 270 minute analysis at 1 minute timestep. Mass balance: 99.58%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute winter	1	18	1.325	0.175	50.2	1.0166	0.0000	OK
30 minute winter	2	18	1.049	0.099	50.1	0.1411	0.0000	OK
30 minute winter	3	18	0.812	0.112	16.7	0.3536	0.0000	OK
30 minute winter	4	18	0.800	0.125	30.5	0.3548	0.0000	OK
30 minute winter	5	19	0.777	0.202	30.3	0.3562	0.0000	OK
30 minute winter	6	19	0.771	0.221	34.7	0.4754	0.0000	OK
30 minute winter	7	19	0.765	0.240	92.6	0.5643	0.0000	OK
30 minute winter	8	18	0.860	0.110	23.0	0.3753	0.0000	OK
30 minute winter	9	19	0.736	0.136	35.4	0.3345	0.0000	OK
30 minute winter	10	19	0.698	0.248	126.9	0.4387	0.0000	OK
30 minute winter	11	19	0.582	0.182	147.5	0.6233	0.0000	OK
30 minute winter	12	18	0.876	0.101	34.9	0.4710	0.0000	OK
30 minute winter	13	21	0.503	0.303	64.1	0.5917	0.0000	OK
30 minute winter	14	20	0.501	0.526	95.2	0.9295	0.0000	OK
30 minute winter	15	20	0.505	0.680	86.0	2.1825	0.0000	
30 minute winter	16	20	0.507	0.707	80.8	1.2492	0.0000	
30 minute winter	17	20	0.507	0.757	201.4	1.9012	0.0000	
30 minute winter	18	20	0.473	0.773	191.6	1.3659	0.0000	
30 minute winter	19	22	0.447	0.797	198.3	1.8937	0.0000	
30 minute winter	20	38	0.434	0.884	206.0	2.3369	0.0000	
30 minute winter	21	38	0.434	0.934	230.6	3.3477	0.0000	
30 minute winter	22	36	0.434	0.834	222.0	120.3780	0.0000	
30 minute winter	23	42	0.434	1.084	228.3	1.9149	0.0000	
30 minute winter	24	1	-0.750	0.000	6.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
30 minute winter	1	1.000	2	50.1	1.231	0.310	3.2759	
30 minute winter	2	1.001	7	49.9	1.499	0.103	0.6128	
30 minute winter	3	2.000	4	16.6	0.459	0.075	0.4286	
30 minute winter	4	2.001	5	30.3	0.579	0.129	2.4404	
30 minute winter	5	2.002	6	29.4	0.379	0.136	1.0025	
30 minute winter	6	2.003	7	34.9	0.401	0.162	1.1347	
30 minute winter	7	1.002	10	92.1	0.939	0.360	2.6158	
30 minute winter	8	3.000	9	22.9	0.656	0.135	1.8984	
30 minute winter	9	3.001	10	34.8	0.781	0.171	0.9060	
30 minute winter	10	1.003	11	126.5	1.527	0.493	1.4743	
30 minute winter	11	1.004	17	147.1	1.456	0.267	6.3015	
30 minute winter	12	4.000	13	34.8	1.032	0.084	6.0793	
30 minute winter	13	4.001	14	45.3	0.838	0.157	6.6342	
30 minute winter	14	4.002	15	-60.7	0.441	-0.094	4.5789	
30 minute winter	15	4.003	16	-67.9	0.467	-0.220	3.4691	
30 minute winter	16	4.004	17	-80.8	-0.314	-0.208	4.3694	
30 minute winter	17	1.005	18	191.6	0.884	0.627	7.0543	
30 minute winter	18	1.006	19	189.4	0.866	0.504	4.6916	
30 minute winter	19	1.007	20	195.0	0.762	0.567	11.1691	
30 minute winter	20	1.008	21	203.5	0.722	0.662	6.9819	
30 minute winter	21	1.009	23	228.3	0.811	0.324	4.0466	
30 minute winter	22	5.000	23	-222.0	-0.788	-0.298	6.0099	
30 minute winter	23	Hydro-Brake®	24	6.5				84.4

Results for 2 year 60 minute summer. 300 minute analysis at 1 minute timestep. Mass balance: 99.78%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	1	33	1.308	0.158	41.3	0.9201	0.0000	OK
60 minute summer	2	33	1.039	0.089	41.1	0.1271	0.0000	OK
60 minute summer	3	33	0.801	0.101	13.8	0.3169	0.0000	OK
60 minute summer	4	33	0.788	0.113	25.2	0.3223	0.0000	OK
60 minute summer	5	34	0.750	0.175	25.0	0.3093	0.0000	OK
60 minute summer	6	34	0.744	0.194	28.6	0.4180	0.0000	OK
60 minute summer	7	34	0.739	0.214	76.1	0.5019	0.0000	OK
60 minute summer	8	33	0.849	0.099	18.9	0.3399	0.0000	OK
60 minute summer	9	33	0.721	0.121	29.1	0.2976	0.0000	OK
60 minute summer	10	34	0.674	0.224	104.6	0.3956	0.0000	OK
60 minute summer	11	34	0.564	0.164	121.5	0.5627	0.0000	OK
60 minute summer	12	33	0.867	0.092	28.7	0.4282	0.0000	OK
60 minute summer	13	69	0.457	0.257	30.4	0.5021	0.0000	OK
60 minute summer	14	68	0.457	0.482	44.6	0.8517	0.0000	OK
60 minute summer	15	69	0.457	0.632	40.0	2.0267	0.0000	
60 minute summer	16	69	0.457	0.657	34.9	1.1612	0.0000	
60 minute summer	17	68	0.457	0.707	161.5	1.7739	0.0000	
60 minute summer	18	67	0.459	0.759	158.6	1.3413	0.0000	
60 minute summer	19	68	0.458	0.808	166.1	1.9200	0.0000	
60 minute summer	20	68	0.458	0.908	174.9	2.4016	0.0000	
60 minute summer	21	68	0.458	0.958	196.1	3.4328	0.0000	
60 minute summer	22	65	0.456	0.856	188.1	133.1896	0.0000	
60 minute summer	23	67	0.457	1.107	194.5	1.9568	0.0000	
60 minute summer	24	1	-0.750	0.000	6.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	1	1.000	2	41.1	1.165	0.255	2.8489	
60 minute summer	2	1.001	7	41.0	1.483	0.085	0.4965	
60 minute summer	3	2.000	4	13.7	0.438	0.062	0.3704	
60 minute summer	4	2.001	5	25.0	0.556	0.107	2.0531	
60 minute summer	5	2.002	6	24.3	0.373	0.112	0.8360	
60 minute summer	6	2.003	7	28.9	0.392	0.134	0.9641	
60 minute summer	7	1.002	10	75.9	0.893	0.296	2.2633	
60 minute summer	8	3.000	9	18.8	0.626	0.111	1.6291	
60 minute summer	9	3.001	10	28.7	0.765	0.141	0.7493	
60 minute summer	10	1.003	11	104.1	1.444	0.406	1.2847	
60 minute summer	11	1.004	17	121.0	1.331	0.220	6.1068	
60 minute summer	12	4.000	13	28.6	0.973	0.069	4.6537	
60 minute summer	13	4.001	14	38.7	0.725	0.134	6.0003	
60 minute summer	14	4.002	15	-27.5	0.415	-0.042	4.4167	
60 minute summer	15	4.003	16	34.7	0.413	0.113	3.4691	
60 minute summer	16	4.004	17	-34.9	0.216	-0.090	4.3694	
60 minute summer	17	1.005	18	158.6	0.683	0.519	7.0543	
60 minute summer	18	1.006	19	158.8	0.703	0.423	4.6916	
60 minute summer	19	1.007	20	165.9	0.636	0.482	11.1691	
60 minute summer	20	1.008	21	173.8	0.732	0.566	6.9819	
60 minute summer	21	1.009	23	194.5	0.691	0.276	4.0466	
60 minute summer	22	5.000	23	-188.1	-0.668	-0.252	6.0099	
60 minute summer	23	Hydro-Brake®	24	6.5				94.6

Results for 2 year 60 minute winter. 300 minute analysis at 1 minute timestep. Mass balance: 99.96%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute winter	1	33	1.292	0.142	33.4	0.8273	0.0000	OK
60 minute winter	2	33	1.030	0.080	33.3	0.1142	0.0000	OK
60 minute winter	3	33	0.789	0.089	11.1	0.2811	0.0000	OK
60 minute winter	4	33	0.777	0.102	20.4	0.2907	0.0000	OK
60 minute winter	5	34	0.727	0.152	20.3	0.2680	0.0000	OK
60 minute winter	6	34	0.721	0.171	23.7	0.3673	0.0000	OK
60 minute winter	7	34	0.715	0.190	62.5	0.4467	0.0000	OK
60 minute winter	8	33	0.840	0.090	15.3	0.3067	0.0000	OK
60 minute winter	9	33	0.708	0.108	23.6	0.2658	0.0000	OK
60 minute winter	10	34	0.652	0.202	85.9	0.3572	0.0000	OK
60 minute winter	11	34	0.549	0.149	100.3	0.5103	0.0000	OK
60 minute winter	12	33	0.858	0.083	23.2	0.3863	0.0000	OK
60 minute winter	13	67	0.500	0.300	24.6	0.5863	0.0000	OK
60 minute winter	14	68	0.500	0.525	30.8	0.9270	0.0000	OK
60 minute winter	15	68	0.501	0.676	39.1	2.1696	0.0000	
60 minute winter	16	70	0.500	0.700	43.3	1.2363	0.0000	
60 minute winter	17	69	0.501	0.751	132.8	1.8857	0.0000	
60 minute winter	18	69	0.500	0.800	127.6	1.4141	0.0000	
60 minute winter	19	66	0.500	0.850	132.7	2.0209	0.0000	
60 minute winter	20	68	0.500	0.950	138.5	2.5132	0.0000	
60 minute winter	21	68	0.500	1.000	158.0	3.5855	0.0000	
60 minute winter	22	65	0.500	0.900	152.8	158.3496	0.0000	
60 minute winter	23	66	0.501	1.151	157.8	2.0335	0.0000	
60 minute winter	24	1	-0.750	0.000	6.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute winter	1	1.000	2	33.3	1.096	0.206	2.4559	
60 minute winter	2	1.001	7	33.3	1.469	0.069	0.3984	
60 minute winter	3	2.000	4	11.1	0.413	0.050	0.3159	
60 minute winter	4	2.001	5	20.3	0.521	0.087	1.7186	
60 minute winter	5	2.002	6	20.1	0.362	0.093	0.6934	
60 minute winter	6	2.003	7	23.8	0.369	0.110	0.8165	
60 minute winter	7	1.002	10	62.4	0.850	0.244	1.9557	
60 minute winter	8	3.000	9	15.3	0.593	0.090	1.3961	
60 minute winter	9	3.001	10	23.5	0.747	0.115	0.6184	
60 minute winter	10	1.003	11	85.7	1.360	0.334	1.1212	
60 minute winter	11	1.004	17	100.1	1.372	0.182	5.9435	
60 minute winter	12	4.000	13	23.1	0.890	0.056	5.1718	
60 minute winter	13	4.001	14	30.8	0.715	0.107	6.8376	
60 minute winter	14	4.002	15	27.0	0.424	0.042	4.5745	
60 minute winter	15	4.003	16	32.5	0.436	0.106	3.4691	
60 minute winter	16	4.004	17	-43.3	0.219	-0.111	4.3694	
60 minute winter	17	1.005	18	127.6	0.715	0.417	7.0543	
60 minute winter	18	1.006	19	125.7	0.734	0.335	4.6916	
60 minute winter	19	1.007	20	130.6	0.673	0.380	11.1691	
60 minute winter	20	1.008	21	138.5	0.747	0.451	6.9819	
60 minute winter	21	1.009	23	157.8	0.560	0.224	4.0466	
60 minute winter	22	5.000	23	-152.8	-0.542	-0.205	6.0099	
60 minute winter	23	Hydro-Brake®	24	6.5				96.0

Results for 2 year 120 minute summer. 360 minute analysis at 2 minute timestep. Mass balance: 99.99%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
120 minute summer	1	64	1.278	0.128	26.8	0.7415	0.0000	OK
120 minute summer	2	64	1.022	0.072	26.8	0.1033	0.0000	OK
120 minute summer	3	64	0.779	0.079	8.9	0.2483	0.0000	OK
120 minute summer	4	64	0.767	0.092	16.4	0.2617	0.0000	OK
120 minute summer	5	64	0.704	0.129	16.3	0.2271	0.0000	OK
120 minute summer	6	64	0.697	0.147	18.9	0.3168	0.0000	OK
120 minute summer	7	64	0.692	0.167	50.0	0.3919	0.0000	OK
120 minute summer	8	64	0.831	0.081	12.3	0.2759	0.0000	OK
120 minute summer	9	64	0.696	0.096	19.0	0.2373	0.0000	OK
120 minute summer	10	64	0.630	0.180	68.5	0.3176	0.0000	OK
120 minute summer	11	66	0.532	0.132	79.9	0.4544	0.0000	OK
120 minute summer	12	64	0.850	0.075	18.6	0.3473	0.0000	OK
120 minute summer	13	130	0.506	0.306	19.8	0.5982	0.0000	OK
120 minute summer	14	130	0.506	0.531	16.9	0.9376	0.0000	OK
120 minute summer	15	128	0.506	0.681	21.6	2.1848	0.0000	
120 minute summer	16	122	0.507	0.707	23.3	1.2495	0.0000	
120 minute summer	17	128	0.506	0.756	101.9	1.8981	0.0000	
120 minute summer	18	122	0.506	0.806	99.7	1.4235	0.0000	
120 minute summer	19	122	0.506	0.856	105.5	2.0357	0.0000	
120 minute summer	20	122	0.506	0.956	110.3	2.5288	0.0000	
120 minute summer	21	126	0.506	1.006	125.3	3.6064	0.0000	
120 minute summer	22	126	0.506	0.906	118.6	161.8612	0.0000	
120 minute summer	23	126	0.507	1.157	125.2	2.0446	0.0000	
120 minute summer	24	2	-0.750	0.000	6.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
120 minute summer	1	1.000	2	26.8	1.025	0.166	2.1135	
120 minute summer	2	1.001	7	26.8	1.460	0.055	0.3097	
120 minute summer	3	2.000	4	8.9	0.392	0.040	0.2680	
120 minute summer	4	2.001	5	16.3	0.510	0.070	1.4048	
120 minute summer	5	2.002	6	16.0	0.359	0.074	0.5575	
120 minute summer	6	2.003	7	19.0	0.357	0.088	0.6741	
120 minute summer	7	1.002	10	49.6	0.802	0.194	1.6515	
120 minute summer	8	3.000	9	12.3	0.559	0.073	1.1930	
120 minute summer	9	3.001	10	18.9	0.741	0.093	0.4954	
120 minute summer	10	1.003	11	68.4	1.274	0.267	0.9543	
120 minute summer	11	1.004	17	79.7	1.122	0.145	5.7750	
120 minute summer	12	4.000	13	18.6	0.825	0.045	5.2912	
120 minute summer	13	4.001	14	16.9	0.614	0.059	6.9538	
120 minute summer	14	4.002	15	14.0	0.377	0.022	4.5940	
120 minute summer	15	4.003	16	23.3	0.388	0.076	3.4691	
120 minute summer	16	4.004	17	23.5	0.215	0.060	4.3694	
120 minute summer	17	1.005	18	99.7	0.591	0.326	7.0543	
120 minute summer	18	1.006	19	100.4	0.604	0.267	4.6916	
120 minute summer	19	1.007	20	104.0	0.556	0.302	11.1691	
120 minute summer	20	1.008	21	109.6	0.667	0.357	6.9819	
120 minute summer	21	1.009	23	125.2	0.490	0.178	4.0466	
120 minute summer	22	5.000	23	-118.6	-0.421	-0.159	6.0099	
120 minute summer	23	Hydro-Brake®	24	6.5				116.2

Results for 2 year 120 minute winter. 360 minute analysis at 2 minute timestep. Mass balance: 99.89%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
120 minute winter	1	64	1.262	0.112	20.7	0.6529	0.0000	OK
120 minute winter	2	64	1.015	0.065	20.7	0.0923	0.0000	OK
120 minute winter	3	64	0.768	0.068	6.9	0.2149	0.0000	OK
120 minute winter	4	64	0.756	0.081	12.7	0.2313	0.0000	OK
120 minute winter	5	66	0.683	0.108	12.7	0.1907	0.0000	OK
120 minute winter	6	66	0.676	0.126	14.9	0.2709	0.0000	OK
120 minute winter	7	66	0.670	0.145	39.1	0.3413	0.0000	OK
120 minute winter	8	64	0.821	0.071	9.5	0.2433	0.0000	OK
120 minute winter	9	64	0.684	0.084	14.7	0.2076	0.0000	OK
120 minute winter	10	66	0.609	0.159	53.7	0.2814	0.0000	OK
120 minute winter	11	126	0.557	0.157	62.8	0.5378	0.0000	OK
120 minute winter	12	64	0.841	0.066	14.4	0.3075	0.0000	OK
120 minute winter	13	126	0.561	0.361	15.3	0.7045	0.0000	OK
120 minute winter	14	126	0.561	0.586	12.7	1.0352	0.0000	OK
120 minute winter	15	128	0.563	0.738	21.2	2.3667	0.0000	
120 minute winter	16	134	0.557	0.757	23.9	1.3384	0.0000	
120 minute winter	17	126	0.558	0.808	80.4	2.0269	0.0000	
120 minute winter	18	130	0.558	0.858	78.1	1.5167	0.0000	
120 minute winter	19	126	0.558	0.908	81.0	2.1583	0.0000	
120 minute winter	20	126	0.557	1.007	86.4	2.6637	0.0000	
120 minute winter	21	132	0.557	1.057	98.4	3.7906	0.0000	
120 minute winter	22	122	0.557	0.957	92.5	193.2926	0.0000	
120 minute winter	23	126	0.558	1.208	98.4	2.1353	0.0000	
120 minute winter	24	2	-0.750	0.000	6.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
120 minute winter	1	1.000	2	20.7	0.942	0.128	1.7764	
120 minute winter	2	1.001	7	20.7	1.443	0.043	0.2323	
120 minute winter	3	2.000	4	6.9	0.368	0.031	0.2208	
120 minute winter	4	2.001	5	12.7	0.485	0.054	1.1255	
120 minute winter	5	2.002	6	12.6	0.354	0.058	0.4417	
120 minute winter	6	2.003	7	14.9	0.340	0.069	0.5491	
120 minute winter	7	1.002	10	39.1	0.754	0.153	1.3807	
120 minute winter	8	3.000	9	9.5	0.521	0.056	0.9895	
120 minute winter	9	3.001	10	14.7	0.728	0.072	0.3843	
120 minute winter	10	1.003	11	53.7	1.184	0.210	0.8070	
120 minute winter	11	1.004	17	62.8	1.143	0.114	6.0289	
120 minute winter	12	4.000	13	14.4	0.765	0.035	6.3208	
120 minute winter	13	4.001	14	12.7	0.617	0.044	7.8560	
120 minute winter	14	4.002	15	15.0	0.389	0.023	4.7312	
120 minute winter	15	4.003	16	23.9	0.395	0.077	3.4691	
120 minute winter	16	4.004	17	25.7	0.216	0.066	4.3694	
120 minute winter	17	1.005	18	78.1	0.604	0.255	7.0543	
120 minute winter	18	1.006	19	76.8	0.632	0.205	4.6916	
120 minute winter	19	1.007	20	81.4	0.592	0.237	11.1691	
120 minute winter	20	1.008	21	85.7	0.657	0.279	6.9819	
120 minute winter	21	1.009	23	98.4	0.452	0.140	4.0466	
120 minute winter	22	5.000	23	-92.5	-0.328	-0.124	6.0099	
120 minute winter	23	Hydro-Brake®	24	6.5				117.5

Results for 2 year 180 minute summer. 420 minute analysis at 4 minute timestep. Mass balance: 99.97%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
180 minute summer	1	96	1.261	0.111	20.0	0.6420	0.0000	OK
180 minute summer	2	96	1.014	0.064	20.0	0.0910	0.0000	OK
180 minute summer	3	96	0.767	0.067	6.7	0.2112	0.0000	OK
180 minute summer	4	96	0.755	0.080	12.3	0.2278	0.0000	OK
180 minute summer	5	96	0.681	0.106	12.3	0.1865	0.0000	OK
180 minute summer	6	96	0.673	0.123	14.4	0.2654	0.0000	OK
180 minute summer	7	96	0.668	0.143	37.9	0.3354	0.0000	OK
180 minute summer	8	96	0.820	0.070	9.2	0.2396	0.0000	OK
180 minute summer	9	96	0.683	0.083	14.2	0.2039	0.0000	OK
180 minute summer	10	96	0.607	0.157	52.0	0.2769	0.0000	OK
180 minute summer	11	184	0.526	0.126	60.8	0.4323	0.0000	OK
180 minute summer	12	96	0.840	0.065	13.9	0.3024	0.0000	OK
180 minute summer	13	192	0.527	0.327	14.8	0.6391	0.0000	OK
180 minute summer	14	196	0.527	0.552	11.5	0.9752	0.0000	OK
180 minute summer	15	196	0.528	0.703	17.6	2.2566	0.0000	
180 minute summer	16	184	0.528	0.728	16.5	1.2861	0.0000	
180 minute summer	17	184	0.527	0.777	77.7	1.9501	0.0000	
180 minute summer	18	184	0.528	0.828	73.6	1.4628	0.0000	
180 minute summer	19	188	0.527	0.877	78.0	2.0845	0.0000	
180 minute summer	20	188	0.527	0.977	81.7	2.5840	0.0000	
180 minute summer	21	188	0.528	1.028	93.8	3.6844	0.0000	
180 minute summer	22	184	0.527	0.927	86.9	174.5632	0.0000	
180 minute summer	23	188	0.527	1.177	92.8	2.0804	0.0000	
180 minute summer	24	4	-0.750	0.000	6.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
180 minute summer	1	1.000	2	20.0	0.931	0.124	1.7359	
180 minute summer	2	1.001	7	20.0	1.445	0.041	0.2238	
180 minute summer	3	2.000	4	6.7	0.367	0.030	0.2158	
180 minute summer	4	2.001	5	12.3	0.490	0.053	1.0947	
180 minute summer	5	2.002	6	12.2	0.353	0.056	0.4284	
180 minute summer	6	2.003	7	14.4	0.340	0.067	0.5347	
180 minute summer	7	1.002	10	37.8	0.747	0.148	1.3486	
180 minute summer	8	3.000	9	9.2	0.517	0.054	0.9656	
180 minute summer	9	3.001	10	14.2	0.722	0.070	0.3713	
180 minute summer	10	1.003	11	52.0	1.171	0.203	0.7887	
180 minute summer	11	1.004	17	60.8	1.020	0.110	5.7095	
180 minute summer	12	4.000	13	13.9	0.749	0.034	5.6938	
180 minute summer	13	4.001	14	11.5	0.546	0.040	7.3292	
180 minute summer	14	4.002	15	12.6	0.359	0.019	4.6578	
180 minute summer	15	4.003	16	16.5	0.392	0.053	3.4691	
180 minute summer	16	4.004	17	14.0	0.216	0.036	4.3694	
180 minute summer	17	1.005	18	73.6	0.552	0.241	7.0543	
180 minute summer	18	1.006	19	73.8	0.558	0.196	4.6916	
180 minute summer	19	1.007	20	76.5	0.505	0.223	11.1691	
180 minute summer	20	1.008	21	81.0	0.611	0.264	6.9819	
180 minute summer	21	1.009	23	92.8	0.377	0.132	4.0466	
180 minute summer	22	5.000	23	-86.9	-0.308	-0.117	6.0099	
180 minute summer	23	Hydro-Brake®	24	6.5				136.8

Results for 2 year 180 minute winter. 420 minute analysis at 4 minute timestep. Mass balance: 99.84%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
180 minute winter	1	96	1.247	0.097	15.4	0.5650	0.0000	OK
180 minute winter	2	96	1.007	0.057	15.4	0.0810	0.0000	OK
180 minute winter	3	96	0.757	0.057	5.1	0.1811	0.0000	OK
180 minute winter	4	96	0.745	0.070	9.4	0.2002	0.0000	OK
180 minute winter	5	96	0.662	0.087	9.4	0.1544	0.0000	OK
180 minute winter	6	96	0.654	0.104	11.1	0.2241	0.0000	OK
180 minute winter	7	96	0.648	0.123	29.2	0.2900	0.0000	OK
180 minute winter	8	96	0.812	0.062	7.1	0.2115	0.0000	OK
180 minute winter	9	96	0.673	0.073	11.0	0.1789	0.0000	OK
180 minute winter	10	96	0.588	0.138	40.2	0.2435	0.0000	OK
180 minute winter	11	184	0.584	0.184	47.0	0.6317	0.0000	OK
180 minute winter	12	96	0.832	0.057	10.7	0.2677	0.0000	OK
180 minute winter	13	180	0.585	0.385	11.4	0.7513	0.0000	OK
180 minute winter	14	188	0.584	0.609	8.9	1.0764	0.0000	
180 minute winter	15	192	0.585	0.760	12.8	2.4399	0.0000	
180 minute winter	16	180	0.586	0.786	14.1	1.3893	0.0000	
180 minute winter	17	188	0.585	0.835	60.0	2.0962	0.0000	
180 minute winter	18	180	0.585	0.885	58.5	1.5630	0.0000	
180 minute winter	19	184	0.585	0.935	62.6	2.2220	0.0000	
180 minute winter	20	184	0.585	1.035	65.5	2.7378	0.0000	
180 minute winter	21	184	0.585	1.085	75.0	3.8903	0.0000	
180 minute winter	22	184	0.584	0.984	69.0	209.8714	0.0000	
180 minute winter	23	180	0.583	1.233	74.3	2.1794	0.0000	
180 minute winter	24	4	-0.750	0.000	6.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
180 minute winter	1	1.000	2	15.4	0.857	0.095	1.4528	
180 minute winter	2	1.001	7	15.4	1.378	0.032	0.1751	
180 minute winter	3	2.000	4	5.1	0.342	0.023	0.1757	
180 minute winter	4	2.001	5	9.4	0.466	0.040	0.8636	
180 minute winter	5	2.002	6	9.4	0.350	0.043	0.3319	
180 minute winter	6	2.003	7	11.1	0.323	0.051	0.4283	
180 minute winter	7	1.002	10	29.2	0.697	0.114	1.1131	
180 minute winter	8	3.000	9	7.1	0.480	0.042	0.8019	
180 minute winter	9	3.001	10	11.0	0.684	0.054	0.3019	
180 minute winter	10	1.003	11	40.1	1.084	0.156	0.9815	
180 minute winter	11	1.004	17	47.0	1.043	0.085	6.3288	
180 minute winter	12	4.000	13	10.7	0.685	0.026	6.8112	
180 minute winter	13	4.001	14	8.9	0.549	0.031	8.1295	
180 minute winter	14	4.002	15	8.7	0.367	0.013	4.7457	
180 minute winter	15	4.003	16	14.1	0.396	0.046	3.4691	
180 minute winter	16	4.004	17	15.2	0.215	0.039	4.3694	
180 minute winter	17	1.005	18	58.5	0.564	0.192	7.0543	
180 minute winter	18	1.006	19	59.4	0.581	0.158	4.6916	
180 minute winter	19	1.007	20	61.5	0.544	0.179	11.1691	
180 minute winter	20	1.008	21	65.1	0.595	0.212	6.9819	
180 minute winter	21	1.009	23	74.3	0.408	0.106	4.0466	
180 minute winter	22	5.000	23	-69.0	-0.245	-0.093	6.0099	
180 minute winter	23	Hydro-Brake®	24	6.5				138.1

Results for 2 year 240 minute summer. 480 minute analysis at 4 minute timestep. Mass balance: 99.95%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
240 minute summer	1	124	1.251	0.101	17.0	0.5893	0.0000	OK
240 minute summer	2	124	1.009	0.059	16.7	0.0841	0.0000	OK
240 minute summer	3	124	0.761	0.061	5.7	0.1915	0.0000	OK
240 minute summer	4	124	0.748	0.073	10.3	0.2083	0.0000	OK
240 minute summer	5	128	0.667	0.092	10.2	0.1620	0.0000	OK
240 minute summer	6	128	0.659	0.109	11.9	0.2340	0.0000	OK
240 minute summer	7	128	0.653	0.128	31.2	0.3005	0.0000	OK
240 minute summer	8	124	0.814	0.064	7.8	0.2199	0.0000	OK
240 minute summer	9	124	0.675	0.075	11.9	0.1850	0.0000	OK
240 minute summer	10	128	0.592	0.142	42.7	0.2513	0.0000	OK
240 minute summer	11	244	0.536	0.136	49.9	0.4669	0.0000	OK
240 minute summer	12	124	0.835	0.060	11.8	0.2785	0.0000	OK
240 minute summer	13	236	0.540	0.340	12.5	0.6642	0.0000	OK
240 minute summer	14	236	0.540	0.565	9.4	0.9982	0.0000	OK
240 minute summer	15	236	0.542	0.717	15.1	2.3004	0.0000	
240 minute summer	16	252	0.536	0.736	18.0	1.3012	0.0000	
240 minute summer	17	244	0.536	0.786	63.7	1.9734	0.0000	
240 minute summer	18	252	0.536	0.836	63.0	1.4780	0.0000	
240 minute summer	19	244	0.537	0.887	65.3	2.1077	0.0000	
240 minute summer	20	244	0.536	0.986	69.8	2.6090	0.0000	
240 minute summer	21	240	0.537	1.037	78.8	3.7162	0.0000	
240 minute summer	22	244	0.536	0.936	72.5	180.0924	0.0000	
240 minute summer	23	244	0.537	1.187	79.6	2.0971	0.0000	
240 minute summer	24	4	-0.750	0.000	6.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
240 minute summer	1	1.000	2	16.7	0.879	0.104	1.5398	
240 minute summer	2	1.001	7	16.6	1.408	0.034	0.1846	
240 minute summer	3	2.000	4	5.6	0.353	0.025	0.1885	
240 minute summer	4	2.001	5	10.2	0.475	0.044	0.9176	
240 minute summer	5	2.002	6	10.1	0.351	0.046	0.3543	
240 minute summer	6	2.003	7	12.0	0.329	0.055	0.4529	
240 minute summer	7	1.002	10	31.2	0.711	0.122	1.1671	
240 minute summer	8	3.000	9	7.7	0.495	0.046	0.8451	
240 minute summer	9	3.001	10	11.7	0.696	0.058	0.3165	
240 minute summer	10	1.003	11	42.9	1.109	0.167	0.6884	
240 minute summer	11	1.004	17	50.1	1.001	0.091	5.8121	
240 minute summer	12	4.000	13	11.7	0.703	0.028	5.9543	
240 minute summer	13	4.001	14	9.4	0.547	0.033	7.5447	
240 minute summer	14	4.002	15	10.8	0.334	0.017	4.6908	
240 minute summer	15	4.003	16	18.0	0.380	0.058	3.4691	
240 minute summer	16	4.004	17	19.8	0.211	0.051	4.3694	
240 minute summer	17	1.005	18	63.0	0.535	0.206	7.0543	
240 minute summer	18	1.006	19	62.0	0.529	0.165	4.6916	
240 minute summer	19	1.007	20	65.7	0.480	0.191	11.1691	
240 minute summer	20	1.008	21	68.7	0.583	0.224	6.9819	
240 minute summer	21	1.009	23	79.6	0.376	0.113	4.0466	
240 minute summer	22	5.000	23	-72.5	-0.257	-0.097	6.0099	
240 minute summer	23	Hydro-Brake®	24	6.5				157.6

Results for 2 year 240 minute winter. 480 minute analysis at 4 minute timestep. Mass balance: 99.87%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
240 minute winter	1	124	1.238	0.088	12.6	0.5129	0.0000	OK
240 minute winter	2	124	1.001	0.051	12.6	0.0733	0.0000	OK
240 minute winter	3	128	0.752	0.052	4.2	0.1626	0.0000	OK
240 minute winter	4	128	0.739	0.064	7.7	0.1820	0.0000	OK
240 minute winter	5	128	0.651	0.076	7.7	0.1340	0.0000	OK
240 minute winter	6	128	0.641	0.091	9.1	0.1965	0.0000	OK
240 minute winter	7	124	0.635	0.110	23.8	0.2592	0.0000	OK
240 minute winter	8	124	0.806	0.056	5.8	0.1917	0.0000	OK
240 minute winter	9	124	0.665	0.065	9.0	0.1612	0.0000	OK
240 minute winter	10	240	0.597	0.147	32.7	0.2605	0.0000	OK
240 minute winter	11	236	0.597	0.197	38.2	0.6766	0.0000	OK
240 minute winter	12	124	0.827	0.052	8.8	0.2433	0.0000	OK
240 minute winter	13	248	0.601	0.401	9.4	0.7823	0.0000	OK
240 minute winter	14	244	0.600	0.625	7.5	1.1048	0.0000	
240 minute winter	15	248	0.602	0.777	11.8	2.4923	0.0000	
240 minute winter	16	236	0.599	0.799	13.2	1.4115	0.0000	
240 minute winter	17	244	0.598	0.848	49.2	2.1278	0.0000	
240 minute winter	18	232	0.597	0.897	48.4	1.5844	0.0000	
240 minute winter	19	240	0.597	0.947	50.4	2.2513	0.0000	
240 minute winter	20	236	0.597	1.047	53.7	2.7702	0.0000	
240 minute winter	21	236	0.598	1.098	61.2	3.9365	0.0000	
240 minute winter	22	240	0.598	0.998	55.5	218.4955	0.0000	
240 minute winter	23	240	0.598	1.248	61.3	2.2050	0.0000	
240 minute winter	24	4	-0.750	0.000	6.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
240 minute winter	1	1.000	2	12.6	0.807	0.078	1.2611	
240 minute winter	2	1.001	7	12.6	1.300	0.026	0.1514	
240 minute winter	3	2.000	4	4.2	0.327	0.019	0.1519	
240 minute winter	4	2.001	5	7.7	0.456	0.033	0.7237	
240 minute winter	5	2.002	6	7.7	0.349	0.036	0.2727	
240 minute winter	6	2.003	7	9.1	0.315	0.042	0.3603	
240 minute winter	7	1.002	10	23.8	0.662	0.093	0.9573	
240 minute winter	8	3.000	9	5.8	0.453	0.034	0.6919	
240 minute winter	9	3.001	10	8.9	0.644	0.044	0.2603	
240 minute winter	10	1.003	11	32.7	1.019	0.127	1.0925	
240 minute winter	11	1.004	17	38.2	1.010	0.069	6.4756	
240 minute winter	12	4.000	13	8.8	0.645	0.021	7.0659	
240 minute winter	13	4.001	14	7.4	0.518	0.026	8.2816	
240 minute winter	14	4.002	15	8.5	0.344	0.013	4.7457	
240 minute winter	15	4.003	16	13.2	0.382	0.043	3.4691	
240 minute winter	16	4.004	17	14.7	0.209	0.038	4.3694	
240 minute winter	17	1.005	18	48.4	0.539	0.158	7.0543	
240 minute winter	18	1.006	19	48.5	0.546	0.129	4.6916	
240 minute winter	19	1.007	20	51.3	0.508	0.149	11.1691	
240 minute winter	20	1.008	21	53.9	0.585	0.175	6.9819	
240 minute winter	21	1.009	23	61.3	0.355	0.087	4.0466	
240 minute winter	22	5.000	23	-55.5	-0.197	-0.074	6.0099	
240 minute winter	23	Hydro-Brake®	24	6.5				158.7

Results for 2 year 360 minute summer. 600 minute analysis at 8 minute timestep. Mass balance: 99.96%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute summer	1	184	1.239	0.089	12.9	0.5156	0.0000	OK
360 minute summer	2	184	1.001	0.051	12.7	0.0733	0.0000	OK
360 minute summer	3	184	0.752	0.052	4.3	0.1638	0.0000	OK
360 minute summer	4	184	0.739	0.064	7.9	0.1826	0.0000	OK
360 minute summer	5	184	0.650	0.075	7.7	0.1324	0.0000	OK
360 minute summer	6	184	0.640	0.090	9.0	0.1944	0.0000	OK
360 minute summer	7	184	0.634	0.109	23.6	0.2572	0.0000	OK
360 minute summer	8	184	0.806	0.056	5.9	0.1923	0.0000	OK
360 minute summer	9	184	0.665	0.065	9.0	0.1607	0.0000	OK
360 minute summer	10	184	0.574	0.124	32.3	0.2183	0.0000	OK
360 minute summer	11	344	0.538	0.138	37.7	0.4740	0.0000	OK
360 minute summer	12	184	0.828	0.053	9.0	0.2446	0.0000	OK
360 minute summer	13	336	0.539	0.339	9.5	0.6622	0.0000	OK
360 minute summer	14	336	0.539	0.564	6.4	0.9960	0.0000	OK
360 minute summer	15	336	0.540	0.715	8.9	2.2957	0.0000	
360 minute summer	16	352	0.536	0.736	7.9	1.3005	0.0000	
360 minute summer	17	352	0.537	0.787	47.8	1.9759	0.0000	
360 minute summer	18	352	0.536	0.836	45.6	1.4769	0.0000	
360 minute summer	19	352	0.537	0.887	47.9	2.1079	0.0000	
360 minute summer	20	352	0.536	0.986	50.8	2.6082	0.0000	
360 minute summer	21	352	0.535	1.035	58.8	3.7110	0.0000	
360 minute summer	22	360	0.535	0.935	52.8	179.5190	0.0000	
360 minute summer	23	352	0.535	1.185	58.3	2.0939	0.0000	
360 minute summer	24	8	-0.750	0.000	6.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
360 minute summer	1	1.000	2	12.7	0.810	0.079	1.2678	
360 minute summer	2	1.001	7	12.5	1.299	0.026	0.1514	
360 minute summer	3	2.000	4	4.3	0.329	0.019	0.1530	
360 minute summer	4	2.001	5	7.7	0.459	0.033	0.7181	
360 minute summer	5	2.002	6	7.6	0.349	0.035	0.2683	
360 minute summer	6	2.003	7	8.8	0.312	0.041	0.3559	
360 minute summer	7	1.002	10	23.4	0.658	0.091	0.9467	
360 minute summer	8	3.000	9	5.8	0.456	0.034	0.6916	
360 minute summer	9	3.001	10	8.9	0.642	0.044	0.2590	
360 minute summer	10	1.003	11	32.0	1.012	0.125	0.6157	
360 minute summer	11	1.004	17	37.5	0.944	0.068	5.8331	
360 minute summer	12	4.000	13	8.9	0.622	0.021	5.9189	
360 minute summer	13	4.001	14	6.4	0.507	0.022	7.5266	
360 minute summer	14	4.002	15	5.6	0.322	0.009	4.6877	
360 minute summer	15	4.003	16	7.9	0.373	0.026	3.4691	
360 minute summer	16	4.004	17	7.1	0.206	0.018	4.3694	
360 minute summer	17	1.005	18	45.6	0.519	0.149	7.0543	
360 minute summer	18	1.006	19	45.2	0.508	0.120	4.6916	
360 minute summer	19	1.007	20	47.5	0.447	0.138	11.1691	
360 minute summer	20	1.008	21	50.5	0.523	0.164	6.9819	
360 minute summer	21	1.009	23	58.3	0.310	0.083	4.0466	
360 minute summer	22	5.000	23	-52.8	-0.187	-0.071	6.0099	
360 minute summer	23	Hydro-Brake®	24	6.5				196.8

Results for 2 year 360 minute winter. 600 minute analysis at 8 minute timestep. Mass balance: 99.84%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute winter	1	184	1.227	0.077	9.4	0.4461	0.0000	OK
360 minute winter	2	184	0.994	0.044	9.4	0.0634	0.0000	OK
360 minute winter	3	184	0.743	0.043	3.1	0.1368	0.0000	OK
360 minute winter	4	184	0.731	0.056	5.7	0.1579	0.0000	OK
360 minute winter	5	184	0.637	0.062	5.7	0.1092	0.0000	OK
360 minute winter	6	184	0.625	0.075	6.7	0.1614	0.0000	OK
360 minute winter	7	184	0.619	0.094	17.6	0.2201	0.0000	OK
360 minute winter	8	184	0.799	0.049	4.3	0.1667	0.0000	OK
360 minute winter	9	184	0.657	0.057	6.7	0.1395	0.0000	OK
360 minute winter	10	344	0.605	0.155	24.3	0.2742	0.0000	OK
360 minute winter	11	344	0.605	0.205	28.4	0.7042	0.0000	OK
360 minute winter	12	184	0.820	0.045	6.5	0.2113	0.0000	OK
360 minute winter	13	344	0.613	0.413	6.9	0.8059	0.0000	OK
360 minute winter	14	344	0.612	0.637	5.1	1.1254	0.0000	
360 minute winter	15	344	0.615	0.790	7.0	2.5341	0.0000	
360 minute winter	16	336	0.605	0.805	6.6	1.4218	0.0000	
360 minute winter	17	344	0.606	0.856	36.2	2.1489	0.0000	
360 minute winter	18	352	0.607	0.907	36.0	1.6030	0.0000	
360 minute winter	19	352	0.605	0.955	36.9	2.2700	0.0000	
360 minute winter	20	352	0.606	1.056	39.7	2.7918	0.0000	
360 minute winter	21	352	0.606	1.106	45.2	3.9638	0.0000	
360 minute winter	22	352	0.606	1.006	39.3	223.5962	0.0000	
360 minute winter	23	360	0.606	1.256	46.4	2.2187	0.0000	
360 minute winter	24	8	-0.750	0.000	6.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
360 minute winter	1	1.000	2	9.4	0.739	0.058	1.0277	
360 minute winter	2	1.001	7	9.4	1.194	0.019	0.1228	
360 minute winter	3	2.000	4	3.1	0.305	0.014	0.1207	
360 minute winter	4	2.001	5	5.7	0.433	0.024	0.5582	
360 minute winter	5	2.002	6	5.7	0.344	0.026	0.2039	
360 minute winter	6	2.003	7	6.7	0.300	0.031	0.2790	
360 minute winter	7	1.002	10	17.6	0.610	0.069	0.9864	
360 minute winter	8	3.000	9	4.3	0.414	0.025	0.5610	
360 minute winter	9	3.001	10	6.7	0.596	0.033	0.2096	
360 minute winter	10	1.003	11	24.2	0.932	0.094	1.1623	
360 minute winter	11	1.004	17	28.4	0.968	0.052	6.5673	
360 minute winter	12	4.000	13	6.5	0.576	0.016	7.2984	
360 minute winter	13	4.001	14	5.1	0.499	0.018	8.3932	
360 minute winter	14	4.002	15	3.9	0.318	0.006	4.7457	
360 minute winter	15	4.003	16	6.6	0.367	0.022	3.4691	
360 minute winter	16	4.004	17	5.8	0.206	0.015	4.3694	
360 minute winter	17	1.005	18	36.0	0.502	0.118	7.0543	
360 minute winter	18	1.006	19	35.0	0.509	0.093	4.6916	
360 minute winter	19	1.007	20	37.3	0.471	0.108	11.1691	
360 minute winter	20	1.008	21	39.3	0.552	0.128	6.9819	
360 minute winter	21	1.009	23	46.4	0.299	0.066	4.0466	
360 minute winter	22	5.000	23	-39.3	-0.140	-0.053	6.0099	
360 minute winter	23	Hydro-Brake®	24	6.5				198.9

Results for 2 year 480 minute summer. 720 minute analysis at 8 minute timestep. Mass balance: 99.97%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
480 minute summer	1	248	1.230	0.080	10.2	0.4643	0.0000	OK
480 minute summer	2	248	0.996	0.046	10.2	0.0661	0.0000	OK
480 minute summer	3	248	0.746	0.046	3.4	0.1441	0.0000	OK
480 minute summer	4	248	0.733	0.058	6.2	0.1646	0.0000	OK
480 minute summer	5	248	0.640	0.065	6.2	0.1157	0.0000	OK
480 minute summer	6	248	0.630	0.080	7.3	0.1713	0.0000	OK
480 minute summer	7	248	0.623	0.098	19.3	0.2313	0.0000	OK
480 minute summer	8	248	0.801	0.051	4.7	0.1740	0.0000	OK
480 minute summer	9	248	0.659	0.059	7.2	0.1450	0.0000	OK
480 minute summer	10	248	0.562	0.112	26.5	0.1986	0.0000	OK
480 minute summer	11	456	0.532	0.132	31.0	0.4518	0.0000	OK
480 minute summer	12	248	0.822	0.047	7.1	0.2203	0.0000	OK
480 minute summer	13	416	0.535	0.335	7.6	0.6534	0.0000	OK
480 minute summer	14	480	0.534	0.559	5.4	0.9872	0.0000	OK
480 minute summer	15	480	0.537	0.712	7.5	2.2844	0.0000	
480 minute summer	16	416	0.533	0.733	6.8	1.2957	0.0000	
480 minute summer	17	416	0.531	0.781	39.6	1.9595	0.0000	
480 minute summer	18	416	0.530	0.830	38.1	1.4662	0.0000	
480 minute summer	19	416	0.531	0.881	40.4	2.0932	0.0000	
480 minute summer	20	416	0.528	0.978	42.4	2.5863	0.0000	
480 minute summer	21	424	0.528	1.028	48.8	3.6844	0.0000	
480 minute summer	22	424	0.528	0.928	43.1	175.3518	0.0000	
480 minute summer	23	448	0.529	1.179	48.1	2.0831	0.0000	
480 minute summer	24	8	-0.750	0.000	6.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
480 minute summer	1	1.000	2	10.2	0.757	0.063	1.0900	
480 minute summer	2	1.001	7	10.2	1.224	0.021	0.1306	
480 minute summer	3	2.000	4	3.4	0.311	0.015	0.1288	
480 minute summer	4	2.001	5	6.2	0.441	0.026	0.6008	
480 minute summer	5	2.002	6	6.2	0.345	0.029	0.2221	
480 minute summer	6	2.003	7	7.3	0.302	0.034	0.3016	
480 minute summer	7	1.002	10	19.3	0.626	0.075	0.8211	
480 minute summer	8	3.000	9	4.7	0.428	0.028	0.5951	
480 minute summer	9	3.001	10	7.2	0.607	0.035	0.2225	
480 minute summer	10	1.003	11	26.5	0.957	0.103	0.5794	
480 minute summer	11	1.004	17	31.0	0.978	0.056	5.7669	
480 minute summer	12	4.000	13	7.1	0.597	0.017	5.8232	
480 minute summer	13	4.001	14	5.4	0.499	0.019	7.4477	
480 minute summer	14	4.002	15	5.4	0.338	0.008	4.6752	
480 minute summer	15	4.003	16	6.8	0.369	0.022	3.4691	
480 minute summer	16	4.004	17	6.3	0.208	0.016	4.3694	
480 minute summer	17	1.005	18	38.1	0.523	0.125	7.0543	
480 minute summer	18	1.006	19	38.3	0.514	0.102	4.6916	
480 minute summer	19	1.007	20	39.8	0.441	0.116	11.1691	
480 minute summer	20	1.008	21	42.3	0.513	0.138	6.9819	
480 minute summer	21	1.009	23	48.1	0.386	0.068	4.0466	
480 minute summer	22	5.000	23	-43.1	-0.153	-0.058	6.0099	
480 minute summer	23	Hydro-Brake®	24	6.5				234.5

Results for 2 year 480 minute winter. 720 minute analysis at 8 minute timestep. Mass balance: 99.88%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
480 minute winter	1	248	1.220	0.070	7.6	0.4036	0.0000	OK
480 minute winter	2	248	0.990	0.040	7.6	0.0573	0.0000	OK
480 minute winter	3	240	0.739	0.039	2.5	0.1220	0.0000	OK
480 minute winter	4	248	0.725	0.050	4.6	0.1426	0.0000	OK
480 minute winter	5	248	0.630	0.055	4.6	0.0964	0.0000	OK
480 minute winter	6	248	0.616	0.066	5.4	0.1410	0.0000	OK
480 minute winter	7	248	0.609	0.084	14.3	0.1970	0.0000	OK
480 minute winter	8	248	0.794	0.044	3.5	0.1512	0.0000	OK
480 minute winter	9	248	0.651	0.051	5.4	0.1261	0.0000	OK
480 minute winter	10	448	0.600	0.150	19.7	0.2655	0.0000	OK
480 minute winter	11	448	0.600	0.200	23.1	0.6857	0.0000	OK
480 minute winter	12	248	0.816	0.041	5.3	0.1921	0.0000	OK
480 minute winter	13	464	0.606	0.406	5.6	0.7922	0.0000	OK
480 minute winter	14	464	0.605	0.630	4.5	1.1132	0.0000	
480 minute winter	15	464	0.608	0.783	8.4	2.5114	0.0000	
480 minute winter	16	432	0.603	0.803	9.2	1.4183	0.0000	
480 minute winter	17	448	0.600	0.850	29.4	2.1334	0.0000	
480 minute winter	18	432	0.600	0.900	29.3	1.5906	0.0000	
480 minute winter	19	432	0.599	0.949	30.4	2.2566	0.0000	
480 minute winter	20	464	0.598	1.048	32.7	2.7722	0.0000	
480 minute winter	21	456	0.598	1.098	37.3	3.9374	0.0000	
480 minute winter	22	456	0.598	0.998	31.8	218.8721	0.0000	
480 minute winter	23	464	0.599	1.249	36.3	2.2076	0.0000	
480 minute winter	24	8	-0.750	0.000	6.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
480 minute winter	1	1.000	2	7.6	0.694	0.047	0.8864	
480 minute winter	2	1.001	7	7.6	1.127	0.016	0.1058	
480 minute winter	3	2.000	4	2.5	0.289	0.011	0.1031	
480 minute winter	4	2.001	5	4.6	0.414	0.020	0.4719	
480 minute winter	5	2.002	6	4.6	0.338	0.021	0.1683	
480 minute winter	6	2.003	7	5.4	0.291	0.025	0.2339	
480 minute winter	7	1.002	10	14.3	0.577	0.056	0.9264	
480 minute winter	8	3.000	9	3.5	0.392	0.021	0.4848	
480 minute winter	9	3.001	10	5.4	0.567	0.027	0.1889	
480 minute winter	10	1.003	11	19.7	0.874	0.077	1.1171	
480 minute winter	11	1.004	17	23.1	0.947	0.042	6.5062	
480 minute winter	12	4.000	13	5.3	0.545	0.013	7.1591	
480 minute winter	13	4.001	14	4.5	0.484	0.016	8.3292	
480 minute winter	14	4.002	15	6.3	0.325	0.010	4.7457	
480 minute winter	15	4.003	16	9.2	0.363	0.030	3.4691	
480 minute winter	16	4.004	17	9.6	0.207	0.025	4.3694	
480 minute winter	17	1.005	18	29.3	0.514	0.096	7.0543	
480 minute winter	18	1.006	19	28.8	0.501	0.077	4.6916	
480 minute winter	19	1.007	20	30.7	0.445	0.089	11.1691	
480 minute winter	20	1.008	21	32.5	0.535	0.106	6.9819	
480 minute winter	21	1.009	23	36.3	0.285	0.052	4.0466	
480 minute winter	22	5.000	23	-31.8	-0.113	-0.043	6.0099	
480 minute winter	23	Hydro-Brake®	24	6.5				238.6

Results for 2 year 600 minute summer. 840 minute analysis at 15 minute timestep. Mass balance: 99.89%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
600 minute summer	1	315	1.222	0.072	8.3	0.4209	0.0000	OK
600 minute summer	2	315	0.992	0.042	8.3	0.0598	0.0000	OK
600 minute summer	3	315	0.741	0.041	2.8	0.1293	0.0000	OK
600 minute summer	4	315	0.728	0.053	5.1	0.1498	0.0000	OK
600 minute summer	5	315	0.633	0.058	5.1	0.1022	0.0000	OK
600 minute summer	6	315	0.620	0.070	6.0	0.1501	0.0000	OK
600 minute summer	7	315	0.613	0.088	15.7	0.2071	0.0000	OK
600 minute summer	8	315	0.796	0.046	3.8	0.1573	0.0000	OK
600 minute summer	9	315	0.653	0.053	5.9	0.1316	0.0000	OK
600 minute summer	10	315	0.552	0.102	21.6	0.1800	0.0000	OK
600 minute summer	11	495	0.523	0.123	25.3	0.4218	0.0000	OK
600 minute summer	12	315	0.818	0.043	5.8	0.2003	0.0000	OK
600 minute summer	13	450	0.523	0.323	6.2	0.6310	0.0000	OK
600 minute summer	14	450	0.523	0.548	4.9	0.9675	0.0000	OK
600 minute summer	15	450	0.524	0.699	6.3	2.2442	0.0000	
600 minute summer	16	510	0.523	0.723	5.6	1.2768	0.0000	
600 minute summer	17	510	0.522	0.772	32.1	1.9367	0.0000	
600 minute summer	18	510	0.522	0.822	30.6	1.4527	0.0000	
600 minute summer	19	525	0.520	0.870	34.5	2.0669	0.0000	
600 minute summer	20	510	0.520	0.970	34.7	2.5649	0.0000	
600 minute summer	21	510	0.520	1.020	40.6	3.6553	0.0000	
600 minute summer	22	480	0.519	0.919	35.4	170.0486	0.0000	
600 minute summer	23	495	0.520	1.170	38.8	2.0670	0.0000	
600 minute summer	24	15	-0.750	0.000	6.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
600 minute summer	1	1.000	2	8.3	0.713	0.051	0.9438	
600 minute summer	2	1.001	7	8.3	1.155	0.017	0.1127	
600 minute summer	3	2.000	4	2.8	0.298	0.013	0.1116	
600 minute summer	4	2.001	5	5.1	0.425	0.022	0.5106	
600 minute summer	5	2.002	6	5.1	0.342	0.024	0.1837	
600 minute summer	6	2.003	7	6.0	0.296	0.028	0.2535	
600 minute summer	7	1.002	10	15.7	0.592	0.061	0.7070	
600 minute summer	8	3.000	9	3.8	0.401	0.022	0.5152	
600 minute summer	9	3.001	10	5.9	0.580	0.029	0.1911	
600 minute summer	10	1.003	11	21.6	0.900	0.084	0.5035	
600 minute summer	11	1.004	17	25.3	0.973	0.046	5.6797	
600 minute summer	12	4.000	13	5.8	0.563	0.014	5.6056	
600 minute summer	13	4.001	14	4.9	0.496	0.017	7.2585	
600 minute summer	14	4.002	15	3.7	0.339	0.006	4.6452	
600 minute summer	15	4.003	16	5.6	0.359	0.018	3.4691	
600 minute summer	16	4.004	17	5.1	0.198	0.013	4.3694	
600 minute summer	17	1.005	18	30.6	0.521	0.100	7.0543	
600 minute summer	18	1.006	19	32.8	0.517	0.087	4.6916	
600 minute summer	19	1.007	20	32.6	0.441	0.095	11.1691	
600 minute summer	20	1.008	21	35.3	0.509	0.115	6.9819	
600 minute summer	21	1.009	23	38.8	0.271	0.055	4.0466	
600 minute summer	22	5.000	23	-35.4	-0.126	-0.048	6.0099	
600 minute summer	23	Hydro-Brake®	24	6.5				266.4

Results for 2 year 600 minute winter. 840 minute analysis at 15 minute timestep. Mass balance: 99.82%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
600 minute winter	1	315	1.214	0.064	6.4	0.3724	0.0000	OK
600 minute winter	2	315	0.987	0.037	6.4	0.0527	0.0000	OK
600 minute winter	3	315	0.736	0.036	2.1	0.1129	0.0000	OK
600 minute winter	4	315	0.722	0.047	3.9	0.1321	0.0000	OK
600 minute winter	5	315	0.625	0.050	3.9	0.0878	0.0000	OK
600 minute winter	6	315	0.609	0.059	4.6	0.1267	0.0000	OK
600 minute winter	7	315	0.602	0.077	12.1	0.1802	0.0000	OK
600 minute winter	8	315	0.791	0.041	2.9	0.1385	0.0000	OK
600 minute winter	9	315	0.647	0.047	4.5	0.1155	0.0000	OK
600 minute winter	10	555	0.591	0.141	16.6	0.2489	0.0000	OK
600 minute winter	11	555	0.590	0.190	19.4	0.6509	0.0000	OK
600 minute winter	12	315	0.813	0.038	4.4	0.1765	0.0000	OK
600 minute winter	13	600	0.590	0.390	4.7	0.7624	0.0000	OK
600 minute winter	14	600	0.590	0.615	3.8	1.0863	0.0000	
600 minute winter	15	600	0.592	0.767	7.1	2.4627	0.0000	
600 minute winter	16	570	0.590	0.790	8.1	1.3954	0.0000	
600 minute winter	17	555	0.589	0.839	25.0	2.1056	0.0000	
600 minute winter	18	570	0.589	0.889	27.5	1.5711	0.0000	
600 minute winter	19	555	0.589	0.939	29.7	2.2316	0.0000	
600 minute winter	20	555	0.588	1.038	31.8	2.7444	0.0000	
600 minute winter	21	570	0.588	1.088	35.3	3.8988	0.0000	
600 minute winter	22	570	0.588	0.988	29.1	212.1387	0.0000	
600 minute winter	23	585	0.588	1.238	34.9	2.1882	0.0000	
600 minute winter	24	15	-0.750	0.000	6.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
600 minute winter	1	1.000	2	6.4	0.660	0.040	0.7884	
600 minute winter	2	1.001	7	6.4	1.068	0.013	0.0939	
600 minute winter	3	2.000	4	2.1	0.270	0.009	0.0916	
600 minute winter	4	2.001	5	3.9	0.399	0.017	0.4153	
600 minute winter	5	2.002	6	3.9	0.333	0.018	0.1449	
600 minute winter	6	2.003	7	4.6	0.284	0.021	0.2031	
600 minute winter	7	1.002	10	12.1	0.552	0.047	0.8348	
600 minute winter	8	3.000	9	2.9	0.369	0.017	0.4252	
600 minute winter	9	3.001	10	4.5	0.537	0.022	0.1581	
600 minute winter	10	1.003	11	16.6	0.830	0.065	1.0327	
600 minute winter	11	1.004	17	19.4	0.913	0.035	6.3912	
600 minute winter	12	4.000	13	4.4	0.527	0.011	6.8761	
600 minute winter	13	4.001	14	3.8	0.476	0.013	8.1850	
600 minute winter	14	4.002	15	5.3	0.313	0.008	4.7457	
600 minute winter	15	4.003	16	8.1	0.364	0.026	3.4691	
600 minute winter	16	4.004	17	9.0	0.207	0.023	4.3694	
600 minute winter	17	1.005	18	27.5	0.512	0.090	7.0543	
600 minute winter	18	1.006	19	28.7	0.503	0.076	4.6916	
600 minute winter	19	1.007	20	30.5	0.433	0.089	11.1691	
600 minute winter	20	1.008	21	32.1	0.520	0.105	6.9819	
600 minute winter	21	1.009	23	34.9	0.399	0.050	4.0466	
600 minute winter	22	5.000	23	-29.1	-0.103	-0.039	6.0099	
600 minute winter	23	Hydro-Brake®	24	6.5				274.9

Results for 2 year 720 minute summer. 960 minute analysis at 15 minute timestep. Mass balance: 99.85%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
720 minute summer	1	375	1.219	0.069	7.4	0.3986	0.0000	OK
720 minute summer	2	375	0.990	0.040	7.4	0.0566	0.0000	OK
720 minute summer	3	375	0.739	0.039	2.5	0.1220	0.0000	OK
720 minute summer	4	375	0.725	0.050	4.6	0.1426	0.0000	OK
720 minute summer	5	375	0.629	0.054	4.6	0.0963	0.0000	OK
720 minute summer	6	375	0.615	0.065	5.4	0.1401	0.0000	OK
720 minute summer	7	375	0.608	0.083	14.1	0.1955	0.0000	OK
720 minute summer	8	375	0.794	0.044	3.4	0.1492	0.0000	OK
720 minute summer	9	375	0.651	0.051	5.3	0.1250	0.0000	OK
720 minute summer	10	375	0.547	0.097	19.4	0.1710	0.0000	OK
720 minute summer	11	615	0.513	0.113	22.7	0.3874	0.0000	OK
720 minute summer	12	375	0.816	0.041	5.1	0.1887	0.0000	OK
720 minute summer	13	555	0.518	0.318	5.4	0.6217	0.0000	OK
720 minute summer	14	555	0.518	0.543	4.4	0.9592	0.0000	OK
720 minute summer	15	555	0.520	0.695	7.3	2.2287	0.0000	
720 minute summer	16	585	0.512	0.712	7.3	1.2586	0.0000	
720 minute summer	17	555	0.514	0.764	28.9	1.9164	0.0000	
720 minute summer	18	615	0.513	0.813	28.1	1.4359	0.0000	
720 minute summer	19	555	0.513	0.863	29.5	2.0523	0.0000	
720 minute summer	20	555	0.512	0.962	31.3	2.5454	0.0000	
720 minute summer	21	540	0.512	1.012	35.8	3.6272	0.0000	
720 minute summer	22	570	0.512	0.912	30.1	165.8410	0.0000	
720 minute summer	23	540	0.512	1.162	35.5	2.0533	0.0000	
720 minute summer	24	15	-0.750	0.000	6.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
720 minute summer	1	1.000	2	7.4	0.688	0.046	0.8700	
720 minute summer	2	1.001	7	7.4	1.118	0.015	0.1038	
720 minute summer	3	2.000	4	2.5	0.287	0.011	0.1031	
720 minute summer	4	2.001	5	4.6	0.415	0.020	0.4716	
720 minute summer	5	2.002	6	4.6	0.340	0.021	0.1673	
720 minute summer	6	2.003	7	5.4	0.291	0.025	0.2316	
720 minute summer	7	1.002	10	14.1	0.575	0.055	0.6538	
720 minute summer	8	3.000	9	3.4	0.387	0.020	0.4769	
720 minute summer	9	3.001	10	5.3	0.565	0.026	0.1765	
720 minute summer	10	1.003	11	19.4	0.871	0.076	0.4313	
720 minute summer	11	1.004	17	22.7	0.928	0.041	5.5817	
720 minute summer	12	4.000	13	5.1	0.546	0.012	5.4986	
720 minute summer	13	4.001	14	4.4	0.471	0.015	7.1745	
720 minute summer	14	4.002	15	5.1	0.314	0.008	4.6319	
720 minute summer	15	4.003	16	7.3	0.371	0.024	3.4691	
720 minute summer	16	4.004	17	7.2	0.210	0.019	4.3694	
720 minute summer	17	1.005	18	28.1	0.514	0.092	7.0543	
720 minute summer	18	1.006	19	28.0	0.504	0.075	4.6916	
720 minute summer	19	1.007	20	29.4	0.441	0.085	11.1691	
720 minute summer	20	1.008	21	31.1	0.511	0.101	6.9819	
720 minute summer	21	1.009	23	35.5	0.261	0.050	4.0466	
720 minute summer	22	5.000	23	-30.1	-0.107	-0.040	6.0099	
720 minute summer	23	Hydro-Brake®	24	6.5				298.4

Results for 2 year 720 minute winter. 960 minute analysis at 15 minute timestep. Mass balance: 99.79%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
720 minute winter	1	375	1.210	0.060	5.6	0.3498	0.0000	OK
720 minute winter	2	375	0.985	0.035	5.6	0.0495	0.0000	OK
720 minute winter	3	375	0.734	0.034	1.9	0.1079	0.0000	OK
720 minute winter	4	375	0.719	0.044	3.4	0.1238	0.0000	OK
720 minute winter	5	375	0.621	0.046	3.4	0.0815	0.0000	OK
720 minute winter	6	375	0.604	0.054	4.0	0.1161	0.0000	OK
720 minute winter	7	375	0.597	0.072	10.6	0.1681	0.0000	OK
720 minute winter	8	375	0.789	0.039	2.6	0.1316	0.0000	OK
720 minute winter	9	375	0.644	0.044	4.0	0.1091	0.0000	OK
720 minute winter	10	585	0.578	0.128	14.6	0.2265	0.0000	OK
720 minute winter	11	585	0.578	0.178	17.1	0.6093	0.0000	OK
720 minute winter	12	375	0.811	0.036	3.9	0.1673	0.0000	OK
720 minute winter	13	585	0.582	0.382	4.1	0.7463	0.0000	OK
720 minute winter	14	585	0.582	0.607	3.8	1.0724	0.0000	
720 minute winter	15	585	0.584	0.759	6.2	2.4350	0.0000	
720 minute winter	16	630	0.577	0.777	6.9	1.3733	0.0000	
720 minute winter	17	585	0.578	0.828	22.2	2.0780	0.0000	
720 minute winter	18	585	0.577	0.877	22.5	1.5502	0.0000	
720 minute winter	19	585	0.577	0.927	23.5	2.2032	0.0000	
720 minute winter	20	615	0.576	1.026	24.6	2.7150	0.0000	
720 minute winter	21	585	0.577	1.077	27.5	3.8599	0.0000	
720 minute winter	22	615	0.577	0.977	22.0	205.3061	0.0000	
720 minute winter	23	615	0.577	1.227	27.7	2.1688	0.0000	
720 minute winter	24	15	-0.750	0.000	6.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
720 minute winter	1	1.000	2	5.6	0.633	0.035	0.7184	
720 minute winter	2	1.001	7	5.6	1.025	0.012	0.0856	
720 minute winter	3	2.000	4	1.9	0.265	0.009	0.0842	
720 minute winter	4	2.001	5	3.4	0.385	0.015	0.3741	
720 minute winter	5	2.002	6	3.4	0.327	0.016	0.1283	
720 minute winter	6	2.003	7	4.0	0.277	0.019	0.1816	
720 minute winter	7	1.002	10	10.6	0.532	0.041	0.6974	
720 minute winter	8	3.000	9	2.6	0.360	0.015	0.3926	
720 minute winter	9	3.001	10	4.0	0.518	0.020	0.1449	
720 minute winter	10	1.003	11	14.6	0.798	0.057	0.9281	
720 minute winter	11	1.004	17	17.1	0.943	0.031	6.2563	
720 minute winter	12	4.000	13	3.9	0.501	0.009	6.7393	
720 minute winter	13	4.001	14	3.8	0.460	0.013	8.1044	
720 minute winter	14	4.002	15	4.5	0.330	0.007	4.7456	
720 minute winter	15	4.003	16	6.9	0.359	0.023	3.4691	
720 minute winter	16	4.004	17	7.3	0.203	0.019	4.3694	
720 minute winter	17	1.005	18	22.5	0.504	0.074	7.0543	
720 minute winter	18	1.006	19	22.5	0.503	0.060	4.6916	
720 minute winter	19	1.007	20	23.4	0.439	0.068	11.1691	
720 minute winter	20	1.008	21	24.5	0.509	0.080	6.9819	
720 minute winter	21	1.009	23	27.7	0.260	0.039	4.0466	
720 minute winter	22	5.000	23	-22.0	-0.078	-0.029	6.0099	
720 minute winter	23	Hydro-Brake®	24	6.5				309.8

Results for 2 year 960 minute summer. 1200 minute analysis at 15 minute timestep. Mass balance: 99.79%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
960 minute summer	1	495	1.213	0.063	6.1	0.3642	0.0000	OK
960 minute summer	2	495	0.986	0.036	6.1	0.0515	0.0000	OK
960 minute summer	3	495	0.735	0.035	2.0	0.1105	0.0000	OK
960 minute summer	4	495	0.720	0.045	3.7	0.1289	0.0000	OK
960 minute summer	5	495	0.623	0.048	3.7	0.0853	0.0000	OK
960 minute summer	6	495	0.607	0.057	4.4	0.1228	0.0000	OK
960 minute summer	7	495	0.600	0.075	11.5	0.1755	0.0000	OK
960 minute summer	8	495	0.790	0.040	2.8	0.1363	0.0000	OK
960 minute summer	9	495	0.646	0.046	4.3	0.1129	0.0000	OK
960 minute summer	10	495	0.538	0.088	15.8	0.1550	0.0000	OK
960 minute summer	11	675	0.503	0.103	18.5	0.3525	0.0000	OK
960 minute summer	12	495	0.812	0.037	4.2	0.1728	0.0000	OK
960 minute summer	13	690	0.502	0.302	4.5	0.5903	0.0000	OK
960 minute summer	14	675	0.502	0.527	3.9	0.9307	0.0000	OK
960 minute summer	15	690	0.502	0.677	5.9	2.1728	0.0000	
960 minute summer	16	675	0.504	0.704	5.9	1.2439	0.0000	
960 minute summer	17	690	0.502	0.752	24.1	1.8869	0.0000	
960 minute summer	18	675	0.502	0.802	23.2	1.4178	0.0000	
960 minute summer	19	690	0.501	0.851	24.3	2.0237	0.0000	
960 minute summer	20	675	0.501	0.951	25.7	2.5149	0.0000	
960 minute summer	21	690	0.500	1.000	29.4	3.5855	0.0000	
960 minute summer	22	690	0.499	0.899	23.8	158.1040	0.0000	
960 minute summer	23	675	0.501	1.151	29.2	2.0330	0.0000	
960 minute summer	24	15	-0.750	0.000	6.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
960 minute summer	1	1.000	2	6.1	0.651	0.038	0.7629	
960 minute summer	2	1.001	7	6.1	1.053	0.013	0.0908	
960 minute summer	3	2.000	4	2.0	0.266	0.009	0.0884	
960 minute summer	4	2.001	5	3.7	0.395	0.016	0.3989	
960 minute summer	5	2.002	6	3.7	0.330	0.017	0.1384	
960 minute summer	6	2.003	7	4.4	0.282	0.020	0.1948	
960 minute summer	7	1.002	10	11.5	0.545	0.045	0.5637	
960 minute summer	8	3.000	9	2.8	0.367	0.017	0.4131	
960 minute summer	9	3.001	10	4.3	0.530	0.021	0.1523	
960 minute summer	10	1.003	11	15.8	0.817	0.062	0.3645	
960 minute summer	11	1.004	17	18.5	0.909	0.034	5.4857	
960 minute summer	12	4.000	13	4.2	0.523	0.010	5.1716	
960 minute summer	13	4.001	14	3.9	0.468	0.014	6.8738	
960 minute summer	14	4.002	15	4.7	0.313	0.007	4.5811	
960 minute summer	15	4.003	16	5.9	0.364	0.019	3.4691	
960 minute summer	16	4.004	17	5.8	0.209	0.015	4.3694	
960 minute summer	17	1.005	18	23.2	0.517	0.076	7.0543	
960 minute summer	18	1.006	19	23.0	0.508	0.061	4.6916	
960 minute summer	19	1.007	20	24.1	0.442	0.070	11.1691	
960 minute summer	20	1.008	21	25.5	0.508	0.083	6.9819	
960 minute summer	21	1.009	23	29.2	0.275	0.041	4.0466	
960 minute summer	22	5.000	23	-23.8	-0.084	-0.032	6.0099	
960 minute summer	23	Hydro-Brake®	24	6.5				359.4

Results for 2 year 960 minute winter. 1200 minute analysis at 15 minute timestep. Mass balance: 99.74%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
960 minute winter	1	495	1.204	0.054	4.5	0.3158	0.0000	OK
960 minute winter	2	495	0.981	0.031	4.5	0.0447	0.0000	OK
960 minute winter	3	480	0.731	0.031	1.5	0.0962	0.0000	OK
960 minute winter	4	495	0.715	0.040	2.8	0.1132	0.0000	OK
960 minute winter	5	495	0.617	0.042	2.8	0.0739	0.0000	OK
960 minute winter	6	495	0.598	0.048	3.3	0.1027	0.0000	OK
960 minute winter	7	495	0.590	0.065	8.6	0.1521	0.0000	OK
960 minute winter	8	495	0.785	0.035	2.1	0.1191	0.0000	OK
960 minute winter	9	495	0.640	0.040	3.2	0.0981	0.0000	OK
960 minute winter	10	765	0.562	0.112	11.8	0.1973	0.0000	OK
960 minute winter	11	765	0.560	0.160	13.8	0.5476	0.0000	OK
960 minute winter	12	480	0.807	0.032	3.1	0.1501	0.0000	OK
960 minute winter	13	720	0.565	0.365	3.3	0.7127	0.0000	OK
960 minute winter	14	720	0.565	0.590	5.0	1.0420	0.0000	OK
960 minute winter	15	795	0.567	0.742	6.5	2.3826	0.0000	
960 minute winter	16	765	0.562	0.762	6.6	1.3457	0.0000	
960 minute winter	17	750	0.561	0.811	17.8	2.0350	0.0000	
960 minute winter	18	750	0.560	0.860	17.7	1.5203	0.0000	
960 minute winter	19	765	0.561	0.911	18.9	2.1643	0.0000	
960 minute winter	20	765	0.560	1.010	19.6	2.6719	0.0000	
960 minute winter	21	765	0.560	1.060	22.1	3.7995	0.0000	
960 minute winter	22	735	0.560	0.960	16.6	194.9381	0.0000	
960 minute winter	23	750	0.560	1.210	22.8	2.1384	0.0000	
960 minute winter	24	15	-0.750	0.000	6.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
960 minute winter	1	1.000	2	4.5	0.591	0.028	0.6179	
960 minute winter	2	1.001	7	4.5	0.961	0.009	0.0734	
960 minute winter	3	2.000	4	1.5	0.249	0.007	0.0729	
960 minute winter	4	2.001	5	2.8	0.364	0.012	0.3265	
960 minute winter	5	2.002	6	2.8	0.318	0.013	0.1089	
960 minute winter	6	2.003	7	3.3	0.267	0.015	0.1547	
960 minute winter	7	1.002	10	8.6	0.500	0.034	0.5332	
960 minute winter	8	3.000	9	2.1	0.338	0.012	0.3367	
960 minute winter	9	3.001	10	3.2	0.488	0.016	0.1231	
960 minute winter	10	1.003	11	11.8	0.747	0.046	0.7859	
960 minute winter	11	1.004	17	13.8	0.901	0.025	6.0591	
960 minute winter	12	4.000	13	3.1	0.480	0.008	6.4232	
960 minute winter	13	4.001	14	5.0	0.437	0.017	7.9110	
960 minute winter	14	4.002	15	6.0	0.309	0.009	4.7365	
960 minute winter	15	4.003	16	6.6	0.346	0.021	3.4691	
960 minute winter	16	4.004	17	7.2	0.196	0.018	4.3694	
960 minute winter	17	1.005	18	17.7	0.495	0.058	7.0543	
960 minute winter	18	1.006	19	18.0	0.503	0.048	4.6916	
960 minute winter	19	1.007	20	18.4	0.439	0.054	11.1691	
960 minute winter	20	1.008	21	19.2	0.516	0.062	6.9819	
960 minute winter	21	1.009	23	22.8	0.242	0.032	4.0466	
960 minute winter	22	5.000	23	-16.6	-0.062	-0.022	6.0099	
960 minute winter	23	Hydro-Brake®	24	6.5				375.2

Results for 2 year 1440 minute summer. 1680 minute analysis at 30 minute timestep. Mass balance: 99.70%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
1440 minute summer	1	750	1.204	0.054	4.4	0.3125	0.0000	OK
1440 minute summer	2	750	0.981	0.031	4.4	0.0443	0.0000	OK
1440 minute summer	3	750	0.731	0.031	1.5	0.0962	0.0000	OK
1440 minute summer	4	750	0.714	0.039	2.7	0.1113	0.0000	OK
1440 minute summer	5	750	0.616	0.041	2.7	0.0726	0.0000	OK
1440 minute summer	6	750	0.597	0.047	3.2	0.1010	0.0000	OK
1440 minute summer	7	750	0.589	0.064	8.4	0.1505	0.0000	OK
1440 minute summer	8	750	0.784	0.034	2.0	0.1164	0.0000	OK
1440 minute summer	9	750	0.639	0.039	3.1	0.0967	0.0000	OK
1440 minute summer	10	750	0.525	0.075	11.5	0.1332	0.0000	OK
1440 minute summer	11	990	0.467	0.067	13.5	0.2301	0.0000	OK
1440 minute summer	12	750	0.807	0.032	3.1	0.1501	0.0000	OK
1440 minute summer	13	960	0.471	0.271	3.3	0.5286	0.0000	OK
1440 minute summer	14	960	0.467	0.492	3.4	0.8698	0.0000	OK
1440 minute summer	15	990	0.468	0.643	4.3	2.0627	0.0000	
1440 minute summer	16	960	0.470	0.670	4.1	1.1832	0.0000	
1440 minute summer	17	960	0.467	0.717	17.3	1.8009	0.0000	
1440 minute summer	18	960	0.470	0.770	16.9	1.3599	0.0000	
1440 minute summer	19	960	0.467	0.817	17.8	1.9419	0.0000	
1440 minute summer	20	960	0.467	0.917	18.6	2.4251	0.0000	
1440 minute summer	21	960	0.466	0.966	21.5	3.4633	0.0000	
1440 minute summer	22	990	0.465	0.865	15.6	138.2899	0.0000	
1440 minute summer	23	960	0.466	1.116	21.2	1.9721	0.0000	
1440 minute summer	24	30	-0.750	0.000	6.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
1440 minute summer	1	1.000	2	4.4	0.587	0.027	0.6084	
1440 minute summer	2	1.001	7	4.4	0.954	0.009	0.0723	
1440 minute summer	3	2.000	4	1.5	0.249	0.007	0.0718	
1440 minute summer	4	2.001	5	2.7	0.360	0.012	0.3179	
1440 minute summer	5	2.002	6	2.7	0.315	0.012	0.1060	
1440 minute summer	6	2.003	7	3.2	0.264	0.015	0.1516	
1440 minute summer	7	1.002	10	8.4	0.497	0.033	0.4516	
1440 minute summer	8	3.000	9	2.0	0.331	0.012	0.3276	
1440 minute summer	9	3.001	10	3.1	0.485	0.015	0.1200	
1440 minute summer	10	1.003	11	11.5	0.740	0.045	0.2764	
1440 minute summer	11	1.004	17	13.5	0.910	0.025	5.1799	
1440 minute summer	12	4.000	13	3.1	0.467	0.008	4.5163	
1440 minute summer	13	4.001	14	3.4	0.425	0.012	6.2446	
1440 minute summer	14	4.002	15	4.0	0.295	0.006	4.4574	
1440 minute summer	15	4.003	16	4.1	0.337	0.013	3.4691	
1440 minute summer	16	4.004	17	4.1	0.185	0.011	4.3694	
1440 minute summer	17	1.005	18	16.9	0.512	0.055	7.0543	
1440 minute summer	18	1.006	19	16.9	0.496	0.045	4.6916	
1440 minute summer	19	1.007	20	17.5	0.442	0.051	11.1691	
1440 minute summer	20	1.008	21	18.7	0.507	0.061	6.9819	
1440 minute summer	21	1.009	23	21.2	0.234	0.030	4.0466	
1440 minute summer	22	5.000	23	-15.6	-0.084	-0.021	6.0099	
1440 minute summer	23	Hydro-Brake®	24	6.5				470.2

Results for 2 year 1440 minute winter. 1680 minute analysis at 30 minute timestep. Mass balance: 99.77%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
1440 minute winter	1	750	1.197	0.047	3.3	0.2736	0.0000	OK
1440 minute winter	2	750	0.977	0.027	3.3	0.0385	0.0000	OK
1440 minute winter	3	720	0.726	0.026	1.1	0.0833	0.0000	OK
1440 minute winter	4	720	0.709	0.034	2.0	0.0973	0.0000	OK
1440 minute winter	5	780	0.611	0.036	2.0	0.0629	0.0000	OK
1440 minute winter	6	750	0.589	0.039	2.4	0.0846	0.0000	OK
1440 minute winter	7	750	0.581	0.056	6.3	0.1314	0.0000	OK
1440 minute winter	8	720	0.780	0.030	1.5	0.1024	0.0000	OK
1440 minute winter	9	720	0.634	0.034	2.3	0.0842	0.0000	OK
1440 minute winter	10	1050	0.518	0.068	8.6	0.1197	0.0000	OK
1440 minute winter	11	1050	0.516	0.116	10.1	0.3989	0.0000	OK
1440 minute winter	12	750	0.803	0.028	2.3	0.1303	0.0000	OK
1440 minute winter	13	1050	0.524	0.324	2.4	0.6323	0.0000	OK
1440 minute winter	14	1050	0.524	0.549	2.2	0.9697	0.0000	OK
1440 minute winter	15	1050	0.523	0.698	3.8	2.2403	0.0000	
1440 minute winter	16	1080	0.521	0.721	4.6	1.2732	0.0000	
1440 minute winter	17	1050	0.517	0.767	13.2	1.9259	0.0000	
1440 minute winter	18	1050	0.518	0.818	13.5	1.4457	0.0000	
1440 minute winter	19	1080	0.517	0.867	14.6	2.0620	0.0000	
1440 minute winter	20	1080	0.517	0.967	15.3	2.5568	0.0000	
1440 minute winter	21	1050	0.517	1.017	17.1	3.6466	0.0000	
1440 minute winter	22	1080	0.517	0.917	11.4	168.4438	0.0000	
1440 minute winter	23	1080	0.516	1.166	17.4	2.0603	0.0000	
1440 minute winter	24	30	-0.750	0.000	6.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
1440 minute winter	1	1.000	2	3.3	0.538	0.020	0.4987	
1440 minute winter	2	1.001	7	3.3	0.875	0.007	0.0591	
1440 minute winter	3	2.000	4	1.1	0.223	0.005	0.0581	
1440 minute winter	4	2.001	5	2.0	0.331	0.009	0.2566	
1440 minute winter	5	2.002	6	2.0	0.297	0.009	0.0833	
1440 minute winter	6	2.003	7	2.4	0.251	0.011	0.1214	
1440 minute winter	7	1.002	10	6.3	0.454	0.025	0.3700	
1440 minute winter	8	3.000	9	1.5	0.303	0.009	0.2681	
1440 minute winter	9	3.001	10	2.3	0.455	0.011	0.0949	
1440 minute winter	10	1.003	11	8.6	0.679	0.034	0.4570	
1440 minute winter	11	1.004	17	10.1	0.848	0.018	5.6140	
1440 minute winter	12	4.000	13	2.3	0.440	0.006	5.6055	
1440 minute winter	13	4.001	14	2.2	0.400	0.008	7.2743	
1440 minute winter	14	4.002	15	3.6	0.296	0.006	4.6487	
1440 minute winter	15	4.003	16	4.6	0.338	0.015	3.4691	
1440 minute winter	16	4.004	17	4.5	0.195	0.012	4.3694	
1440 minute winter	17	1.005	18	13.5	0.481	0.044	7.0543	
1440 minute winter	18	1.006	19	13.9	0.485	0.037	4.6916	
1440 minute winter	19	1.007	20	14.5	0.435	0.042	11.1691	
1440 minute winter	20	1.008	21	15.2	0.505	0.050	6.9819	
1440 minute winter	21	1.009	23	17.4	0.317	0.025	4.0466	
1440 minute winter	22	5.000	23	-11.4	-0.048	-0.015	6.0099	
1440 minute winter	23	Hydro-Brake®	24	6.5				493.2

Results for 30 year 15 minute summer. 255 minute analysis at 1 minute timestep. Mass balance: 98.66%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	1	10	1.428	0.278	118.5	1.6150	0.0000	OK
15 minute summer	2	11	1.119	0.169	116.4	0.2416	0.0000	OK
15 minute summer	3	13	0.969	0.269	39.5	0.8485	0.0000	OK
15 minute summer	4	13	0.969	0.294	67.7	0.8350	0.0000	OK
15 minute summer	5	13	0.968	0.393	58.0	0.6941	0.0000	OK
15 minute summer	6	12	0.965	0.415	60.0	0.8921	0.0000	OK
15 minute summer	7	12	0.966	0.441	193.9	1.0364	0.0000	OK
15 minute summer	8	13	0.928	0.178	54.3	0.6068	0.0000	OK
15 minute summer	9	13	0.934	0.334	83.2	0.8234	0.0000	OK
15 minute summer	10	13	0.930	0.480	247.7	0.8485	0.0000	OK
15 minute summer	11	12	0.877	0.477	288.3	1.6379	0.0000	OK
15 minute summer	12	10	0.931	0.156	82.3	0.7285	0.0000	OK
15 minute summer	13	11	0.876	0.676	87.2	1.3206	0.0000	
15 minute summer	14	14	0.787	0.812	102.8	17.6340	0.0000	
15 minute summer	15	14	0.783	0.958	107.6	3.0735	0.0000	
15 minute summer	16	14	0.781	0.981	100.5	1.7335	0.0000	
15 minute summer	17	14	0.776	1.026	304.4	2.5753	0.0000	
15 minute summer	18	14	0.715	1.015	271.3	1.7935	0.0000	
15 minute summer	19	15	0.667	1.017	279.7	2.4163	0.0000	
15 minute summer	20	17	0.589	1.039	300.7	2.7492	0.0000	
15 minute summer	21	20	0.561	1.061	355.6	3.8037	0.0000	
15 minute summer	22	23	0.547	0.947	342.1	186.5882	0.0000	
15 minute summer	23	20	0.547	1.197	349.7	2.1142	0.0000	
15 minute summer	24	1	-0.750	0.000	6.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	1	1.000	2	116.4	1.535	0.721	6.1864	
15 minute summer	2	1.001	7	120.6	1.524	0.249	1.4350	
15 minute summer	3	2.000	4	35.0	0.526	0.158	1.3851	
15 minute summer	4	2.001	5	58.0	0.683	0.248	6.3124	
15 minute summer	5	2.002	6	52.6	0.384	0.242	2.1957	
15 minute summer	6	2.003	7	62.2	0.423	0.288	2.3426	
15 minute summer	7	1.002	10	181.2	1.082	0.707	5.3034	
15 minute summer	8	3.000	9	53.6	0.790	0.317	4.9931	
15 minute summer	9	3.001	10	74.4	0.848	0.365	2.5971	
15 minute summer	10	1.003	11	235.7	1.739	0.919	3.6351	
15 minute summer	11	1.004	17	276.8	1.663	0.503	9.4234	
15 minute summer	12	4.000	13	81.9	1.328	0.198	10.6217	
15 minute summer	13	4.001	14	93.0	0.991	0.323	9.1090	
15 minute summer	14	4.002	15	93.0	0.489	0.143	4.7457	
15 minute summer	15	4.003	16	96.2	0.562	0.312	3.4691	
15 minute summer	16	4.004	17	-100.5	-0.357	-0.258	4.3694	
15 minute summer	17	1.005	18	271.3	1.070	0.888	7.0543	
15 minute summer	18	1.006	19	272.2	1.009	0.725	4.6916	
15 minute summer	19	1.007	20	280.3	0.995	0.815	11.1691	
15 minute summer	20	1.008	21	296.5	1.053	0.965	6.9819	
15 minute summer	21	1.009	23	349.7	1.242	0.497	4.0466	
15 minute summer	22	5.000	23	-342.1	-1.215	-0.459	6.0099	
15 minute summer	23	Hydro-Brake®	24	6.5				83.4

Results for 30 year 15 minute winter. 255 minute analysis at 1 minute timestep. Mass balance: 97.29%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	1	10	1.436	0.286	124.3	1.6584	0.0000	OK
15 minute winter	2	10	1.122	0.172	121.6	0.2457	0.0000	OK
15 minute winter	3	13	1.031	0.331	41.4	1.0421	0.0000	OK
15 minute winter	4	13	1.031	0.356	71.0	1.0110	0.0000	OK
15 minute winter	5	13	1.022	0.447	59.4	0.7904	0.0000	OK
15 minute winter	6	13	1.014	0.464	60.2	0.9977	0.0000	OK
15 minute winter	7	12	1.005	0.480	198.9	1.1273	0.0000	OK
15 minute winter	8	13	1.006	0.256	57.0	0.8736	0.0000	OK
15 minute winter	9	14	0.983	0.383	86.8	0.9440	0.0000	OK
15 minute winter	10	14	0.977	0.527	260.5	0.9310	0.0000	
15 minute winter	11	14	0.931	0.531	291.3	1.8203	0.0000	
15 minute winter	12	10	0.934	0.159	86.4	0.7412	0.0000	OK
15 minute winter	13	14	0.873	0.673	221.0	1.3139	0.0000	
15 minute winter	14	15	0.834	0.859	268.2	24.4911	0.0000	
15 minute winter	15	15	0.830	1.005	116.1	3.2256	0.0000	
15 minute winter	16	15	0.827	1.027	137.9	1.8139	0.0000	
15 minute winter	17	15	0.822	1.072	298.1	2.6912	0.0000	
15 minute winter	18	15	0.763	1.063	270.7	1.8781	0.0000	
15 minute winter	19	15	0.715	1.065	281.1	2.5326	0.0000	
15 minute winter	20	17	0.636	1.086	301.7	2.8712	0.0000	
15 minute winter	21	21	0.605	1.105	362.7	3.9605	0.0000	
15 minute winter	22	24	0.601	1.001	353.8	220.9040	0.0000	
15 minute winter	23	28	0.596	1.246	360.5	2.2018	0.0000	
15 minute winter	24	1	-0.750	0.000	6.4	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	1	1.000	2	121.6	1.569	0.753	6.4064	
15 minute winter	2	1.001	7	128.0	1.592	0.264	1.5256	
15 minute winter	3	2.000	4	36.5	0.529	0.164	1.7567	
15 minute winter	4	2.001	5	59.4	0.673	0.254	7.4617	
15 minute winter	5	2.002	6	51.3	0.376	0.237	2.4541	
15 minute winter	6	2.003	7	59.7	0.402	0.277	2.5361	
15 minute winter	7	1.002	10	191.9	1.083	0.749	5.6183	
15 minute winter	8	3.000	9	55.7	0.784	0.329	6.3825	
15 minute winter	9	3.001	10	78.2	0.844	0.384	2.8373	
15 minute winter	10	1.003	11	236.0	1.590	0.920	3.8196	
15 minute winter	11	1.004	17	269.5	1.621	0.489	9.6445	
15 minute winter	12	4.000	13	85.7	1.299	0.208	10.6805	
15 minute winter	13	4.001	14	189.6	1.001	0.658	9.1090	
15 minute winter	14	4.002	15	-120.9	0.505	-0.186	4.7457	
15 minute winter	15	4.003	16	93.6	0.573	0.304	3.4691	
15 minute winter	16	4.004	17	-103.0	-0.376	-0.265	4.3694	
15 minute winter	17	1.005	18	270.7	1.090	0.886	7.0543	
15 minute winter	18	1.006	19	270.8	1.030	0.721	4.6916	
15 minute winter	19	1.007	20	281.4	0.999	0.818	11.1691	
15 minute winter	20	1.008	21	300.6	1.067	0.978	6.9819	
15 minute winter	21	1.009	23	360.5	1.280	0.512	4.0466	
15 minute winter	22	5.000	23	-353.8	-1.256	-0.475	6.0099	
15 minute winter	23	Hydro-Brake®	24	6.4				85.2

Results for 30 year 30 minute summer. 270 minute analysis at 1 minute timestep. Mass balance: 98.63%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute summer	1	18	1.412	0.262	105.7	1.5205	0.0000	OK
30 minute summer	2	18	1.109	0.159	106.1	0.2273	0.0000	OK
30 minute summer	3	20	0.981	0.281	35.3	0.8859	0.0000	OK
30 minute summer	4	20	0.981	0.306	61.7	0.8679	0.0000	OK
30 minute summer	5	21	0.973	0.398	53.1	0.7025	0.0000	OK
30 minute summer	6	21	0.969	0.419	56.0	0.9018	0.0000	OK
30 minute summer	7	21	0.965	0.440	173.7	1.0349	0.0000	OK
30 minute summer	8	21	0.948	0.198	48.5	0.6755	0.0000	OK
30 minute summer	9	21	0.945	0.345	74.8	0.8484	0.0000	OK
30 minute summer	10	21	0.939	0.489	215.9	0.8638	0.0000	OK
30 minute summer	11	21	0.900	0.500	250.1	1.7156	0.0000	OK
30 minute summer	12	18	0.922	0.147	73.4	0.6837	0.0000	OK
30 minute summer	13	22	0.830	0.630	152.1	1.2308	0.0000	
30 minute summer	14	22	0.818	0.843	112.8	22.2100	0.0000	
30 minute summer	15	22	0.815	0.990	98.9	3.1785	0.0000	
30 minute summer	16	22	0.813	1.013	94.5	1.7899	0.0000	
30 minute summer	17	22	0.810	1.060	262.0	2.6606	0.0000	
30 minute summer	18	22	0.755	1.055	258.1	1.8651	0.0000	
30 minute summer	19	23	0.714	1.064	269.5	2.5297	0.0000	
30 minute summer	20	30	0.655	1.105	290.2	2.9234	0.0000	
30 minute summer	21	36	0.654	1.154	351.5	4.1387	0.0000	
30 minute summer	22	36	0.655	1.055	345.1	255.6975	0.0000	
30 minute summer	23	35	0.654	1.304	350.9	2.3039	0.0000	
30 minute summer	24	1	-0.750	0.000	6.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
30 minute summer	1	1.000	2	106.1	1.504	0.657	5.7736	
30 minute summer	2	1.001	7	110.9	1.466	0.229	1.3806	
30 minute summer	3	2.000	4	32.3	0.514	0.145	1.4570	
30 minute summer	4	2.001	5	53.1	0.628	0.227	6.4748	
30 minute summer	5	2.002	6	47.7	0.368	0.220	2.2222	
30 minute summer	6	2.003	7	55.3	0.340	0.256	2.3527	
30 minute summer	7	1.002	10	160.2	1.037	0.625	5.3598	
30 minute summer	8	3.000	9	48.3	0.763	0.286	5.3403	
30 minute summer	9	3.001	10	64.9	0.813	0.319	2.6546	
30 minute summer	10	1.003	11	205.1	1.625	0.799	3.7300	
30 minute summer	11	1.004	17	232.8	1.477	0.423	9.5610	
30 minute summer	12	4.000	13	73.3	1.171	0.178	10.4183	
30 minute summer	13	4.001	14	91.6	0.813	0.318	9.1090	
30 minute summer	14	4.002	15	-85.1	0.470	-0.131	4.7457	
30 minute summer	15	4.003	16	76.9	0.514	0.250	3.4691	
30 minute summer	16	4.004	17	-94.5	-0.358	-0.243	4.3694	
30 minute summer	17	1.005	18	258.1	0.916	0.844	7.0543	
30 minute summer	18	1.006	19	257.8	0.915	0.686	4.6916	
30 minute summer	19	1.007	20	269.2	0.956	0.783	11.1691	
30 minute summer	20	1.008	21	288.9	1.026	0.940	6.9819	
30 minute summer	21	1.009	23	350.9	1.246	0.499	4.0466	
30 minute summer	22	5.000	23	-345.1	-1.225	-0.463	6.0099	
30 minute summer	23	Hydro-Brake®	24	6.5				92.0

Results for 30 year 30 minute winter. 270 minute analysis at 1 minute timestep. Mass balance: 98.29%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute winter	1	18	1.397	0.247	95.7	1.4342	0.0000	OK
30 minute winter	2	18	1.096	0.146	95.8	0.2087	0.0000	OK
30 minute winter	3	22	0.977	0.277	31.9	0.8733	0.0000	OK
30 minute winter	4	22	0.977	0.302	56.3	0.8572	0.0000	OK
30 minute winter	5	21	0.975	0.400	49.7	0.7071	0.0000	OK
30 minute winter	6	21	0.974	0.424	53.6	0.9110	0.0000	OK
30 minute winter	7	21	0.972	0.447	157.1	1.0498	0.0000	OK
30 minute winter	8	22	0.963	0.213	43.9	0.7284	0.0000	OK
30 minute winter	9	22	0.955	0.355	67.5	0.8734	0.0000	OK
30 minute winter	10	21	0.951	0.501	200.5	0.8854	0.0000	OK
30 minute winter	11	22	0.919	0.519	231.4	1.7814	0.0000	OK
30 minute winter	12	18	0.915	0.140	66.5	0.6502	0.0000	OK
30 minute winter	13	23	0.849	0.649	142.4	1.2678	0.0000	
30 minute winter	14	23	0.847	0.872	111.9	26.3597	0.0000	
30 minute winter	15	23	0.845	1.020	97.3	3.2722	0.0000	
30 minute winter	16	23	0.843	1.043	93.2	1.8421	0.0000	
30 minute winter	17	23	0.840	1.090	252.2	2.7359	0.0000	
30 minute winter	18	24	0.792	1.092	246.0	1.9291	0.0000	
30 minute winter	19	24	0.756	1.106	259.5	2.6281	0.0000	
30 minute winter	20	31	0.709	1.159	280.7	3.0649	0.0000	
30 minute winter	21	36	0.706	1.206	341.4	4.3240	0.0000	
30 minute winter	22	37	0.711	1.111	334.3	293.6253	0.0000	
30 minute winter	23	37	0.710	1.360	340.4	2.4031	0.0000	
30 minute winter	24	1	-0.750	0.000	6.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
30 minute winter	1	1.000	2	95.8	1.491	0.594	5.2933	
30 minute winter	2	1.001	7	98.3	1.474	0.203	1.3663	
30 minute winter	3	2.000	4	29.7	0.499	0.134	1.4332	
30 minute winter	4	2.001	5	49.7	0.600	0.212	6.4567	
30 minute winter	5	2.002	6	43.0	0.371	0.198	2.2404	
30 minute winter	6	2.003	7	49.3	0.354	0.228	2.3786	
30 minute winter	7	1.002	10	147.2	1.018	0.575	5.4308	
30 minute winter	8	3.000	9	43.7	0.736	0.258	5.6301	
30 minute winter	9	3.001	10	56.2	0.785	0.276	2.7152	
30 minute winter	10	1.003	11	191.3	1.652	0.746	3.7850	
30 minute winter	11	1.004	17	227.0	1.503	0.412	9.6355	
30 minute winter	12	4.000	13	66.4	1.137	0.161	10.3321	
30 minute winter	13	4.001	14	-85.8	0.845	-0.298	9.1090	
30 minute winter	14	4.002	15	-76.2	0.483	-0.117	4.7457	
30 minute winter	15	4.003	16	-72.3	0.531	-0.235	3.4691	
30 minute winter	16	4.004	17	-93.2	-0.344	-0.239	4.3694	
30 minute winter	17	1.005	18	246.0	0.926	0.805	7.0543	
30 minute winter	18	1.006	19	245.1	0.914	0.653	4.6916	
30 minute winter	19	1.007	20	258.4	0.917	0.751	11.1691	
30 minute winter	20	1.008	21	280.3	0.995	0.912	6.9819	
30 minute winter	21	1.009	23	340.4	1.209	0.484	4.0466	
30 minute winter	22	5.000	23	-334.3	-1.187	-0.448	6.0099	
30 minute winter	23	Hydro-Brake®	24	6.5				93.7

Results for 30 year 60 minute summer. 300 minute analysis at 1 minute timestep. Mass balance: 99.74%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	1	33	1.371	0.221	78.4	1.2859	0.0000	OK
60 minute summer	2	33	1.080	0.130	78.6	0.1856	0.0000	OK
60 minute summer	3	36	0.895	0.195	26.2	0.6145	0.0000	OK
60 minute summer	4	36	0.893	0.218	46.9	0.6181	0.0000	OK
60 minute summer	5	35	0.884	0.309	43.3	0.5458	0.0000	OK
60 minute summer	6	35	0.881	0.331	45.8	0.7127	0.0000	OK
60 minute summer	7	35	0.878	0.353	133.8	0.8299	0.0000	OK
60 minute summer	8	33	0.888	0.138	36.0	0.4718	0.0000	OK
60 minute summer	9	36	0.859	0.259	55.5	0.6366	0.0000	OK
60 minute summer	10	36	0.855	0.405	176.8	0.7151	0.0000	OK
60 minute summer	11	37	0.825	0.425	202.5	1.4566	0.0000	OK
60 minute summer	12	33	0.901	0.126	54.4	0.5881	0.0000	OK
60 minute summer	13	39	0.791	0.591	57.9	1.1537	0.0000	
60 minute summer	14	38	0.785	0.810	72.6	17.4110	0.0000	
60 minute summer	15	38	0.784	0.959	56.5	3.0780	0.0000	
60 minute summer	16	38	0.781	0.981	56.9	1.7338	0.0000	
60 minute summer	17	38	0.780	1.030	225.3	2.5852	0.0000	
60 minute summer	18	39	0.745	1.045	220.7	1.8456	0.0000	
60 minute summer	19	72	0.733	1.083	235.4	2.5753	0.0000	
60 minute summer	20	66	0.733	1.183	254.2	3.1296	0.0000	
60 minute summer	21	66	0.733	1.233	302.6	4.4215	0.0000	
60 minute summer	22	67	0.735	1.135	294.3	309.9674	0.0000	
60 minute summer	23	66	0.735	1.385	300.5	2.4469	0.0000	
60 minute summer	24	1	-0.750	0.000	6.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	1	1.000	2	78.6	1.382	0.487	4.5737	
60 minute summer	2	1.001	7	79.4	1.471	0.164	1.0643	
60 minute summer	3	2.000	4	25.1	0.489	0.113	0.9248	
60 minute summer	4	2.001	5	43.3	0.580	0.185	4.5930	
60 minute summer	5	2.002	6	37.4	0.354	0.172	1.6999	
60 minute summer	6	2.003	7	44.2	0.360	0.205	1.8535	
60 minute summer	7	1.002	10	127.7	0.973	0.499	4.4290	
60 minute summer	8	3.000	9	35.9	0.712	0.212	3.5174	
60 minute summer	9	3.001	10	50.5	0.768	0.248	2.0528	
60 minute summer	10	1.003	11	170.6	1.572	0.665	3.2288	
60 minute summer	11	1.004	17	196.5	1.381	0.357	8.9992	
60 minute summer	12	4.000	13	54.4	0.911	0.132	10.0916	
60 minute summer	13	4.001	14	71.8	0.673	0.249	9.1090	
60 minute summer	14	4.002	15	48.3	0.430	0.074	4.7457	
60 minute summer	15	4.003	16	56.9	0.460	0.184	3.4691	
60 minute summer	16	4.004	17	57.2	0.243	0.147	4.3694	
60 minute summer	17	1.005	18	220.7	0.784	0.722	7.0543	
60 minute summer	18	1.006	19	219.1	0.793	0.583	4.6916	
60 minute summer	19	1.007	20	234.0	0.831	0.680	11.1691	
60 minute summer	20	1.008	21	252.5	0.897	0.822	6.9819	
60 minute summer	21	1.009	23	300.5	1.067	0.427	4.0466	
60 minute summer	22	5.000	23	-294.3	-1.045	-0.395	6.0099	
60 minute summer	23	Hydro-Brake®	24	6.5				105.2

Results for 30 year 60 minute winter. 300 minute analysis at 1 minute timestep. Mass balance: 99.70%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute winter	1	33	1.348	0.198	63.5	1.1477	0.0000	OK
60 minute winter	2	34	1.064	0.114	63.5	0.1626	0.0000	OK
60 minute winter	3	37	0.859	0.159	21.2	0.5016	0.0000	OK
60 minute winter	4	38	0.856	0.181	38.3	0.5150	0.0000	OK
60 minute winter	5	38	0.852	0.277	36.8	0.4892	0.0000	OK
60 minute winter	6	38	0.850	0.300	40.2	0.6450	0.0000	OK
60 minute winter	7	38	0.848	0.323	112.0	0.7585	0.0000	OK
60 minute winter	8	33	0.874	0.124	29.1	0.4233	0.0000	OK
60 minute winter	9	39	0.836	0.236	45.0	0.5822	0.0000	OK
60 minute winter	10	39	0.834	0.384	152.4	0.6786	0.0000	OK
60 minute winter	11	40	0.817	0.417	177.2	1.4294	0.0000	OK
60 minute winter	12	33	0.889	0.114	44.1	0.5292	0.0000	OK
60 minute winter	13	42	0.796	0.596	46.8	1.1643	0.0000	
60 minute winter	14	42	0.794	0.819	50.2	18.7254	0.0000	
60 minute winter	15	60	0.794	0.969	47.1	3.1096	0.0000	
60 minute winter	16	42	0.796	0.996	45.1	1.7595	0.0000	
60 minute winter	17	43	0.791	1.041	208.4	2.6138	0.0000	
60 minute winter	18	73	0.789	1.089	206.6	1.9247	0.0000	
60 minute winter	19	62	0.789	1.139	219.0	2.7070	0.0000	
60 minute winter	20	66	0.788	1.238	234.0	3.2742	0.0000	
60 minute winter	21	63	0.789	1.289	273.1	4.6200	0.0000	
60 minute winter	22	65	0.791	1.191	264.9	349.7407	0.0000	
60 minute winter	23	64	0.790	1.440	270.9	2.5439	0.0000	
60 minute winter	24	1	-0.750	0.000	6.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute winter	1	1.000	2	63.5	1.307	0.393	3.8965	
60 minute winter	2	1.001	7	63.2	1.466	0.131	0.9049	
60 minute winter	3	2.000	4	20.7	0.471	0.093	0.7118	
60 minute winter	4	2.001	5	36.8	0.555	0.157	3.8488	
60 minute winter	5	2.002	6	33.3	0.360	0.154	1.4979	
60 minute winter	6	2.003	7	38.9	0.375	0.180	1.6583	
60 minute winter	7	1.002	10	109.9	0.956	0.429	4.1030	
60 minute winter	8	3.000	9	29.1	0.679	0.172	3.0833	
60 minute winter	9	3.001	10	43.2	0.755	0.212	1.8815	
60 minute winter	10	1.003	11	149.5	1.549	0.583	3.1210	
60 minute winter	11	1.004	17	170.9	1.410	0.310	8.9256	
60 minute winter	12	4.000	13	44.0	0.924	0.107	9.8615	
60 minute winter	13	4.001	14	48.9	0.712	0.170	9.1090	
60 minute winter	14	4.002	15	30.2	0.451	0.046	4.7457	
60 minute winter	15	4.003	16	45.1	0.487	0.146	3.4691	
60 minute winter	16	4.004	17	44.8	0.236	0.115	4.3694	
60 minute winter	17	1.005	18	206.6	0.792	0.676	7.0543	
60 minute winter	18	1.006	19	205.8	0.834	0.548	4.6916	
60 minute winter	19	1.007	20	217.6	0.772	0.633	11.1691	
60 minute winter	20	1.008	21	232.5	0.825	0.757	6.9819	
60 minute winter	21	1.009	23	270.9	0.962	0.385	4.0466	
60 minute winter	22	5.000	23	-264.9	-0.940	-0.355	6.0099	
60 minute winter	23	Hydro-Brake®	24	6.5				106.6

Results for 30 year 120 minute summer. 360 minute analysis at 2 minute timestep. Mass balance: 99.70%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
120 minute summer	1	64	1.326	0.176	50.5	1.0197	0.0000	OK
120 minute summer	2	64	1.049	0.099	50.5	0.1416	0.0000	OK
120 minute summer	3	66	0.814	0.114	16.8	0.3606	0.0000	OK
120 minute summer	4	66	0.806	0.131	30.7	0.3731	0.0000	OK
120 minute summer	5	134	0.805	0.230	30.0	0.4062	0.0000	OK
120 minute summer	6	132	0.805	0.255	33.8	0.5477	0.0000	OK
120 minute summer	7	132	0.805	0.280	92.0	0.6581	0.0000	OK
120 minute summer	8	64	0.860	0.110	23.1	0.3769	0.0000	OK
120 minute summer	9	132	0.806	0.206	35.7	0.5065	0.0000	OK
120 minute summer	10	132	0.805	0.355	122.2	0.6278	0.0000	OK
120 minute summer	11	130	0.805	0.405	141.1	1.3881	0.0000	OK
120 minute summer	12	64	0.877	0.102	35.1	0.4730	0.0000	OK
120 minute summer	13	122	0.807	0.607	37.3	1.1850	0.0000	
120 minute summer	14	122	0.807	0.832	26.6	20.5131	0.0000	
120 minute summer	15	124	0.806	0.981	39.4	3.1495	0.0000	
120 minute summer	16	122	0.808	1.008	37.2	1.7804	0.0000	
120 minute summer	17	124	0.806	1.056	179.6	2.6499	0.0000	
120 minute summer	18	124	0.806	1.106	177.3	1.9540	0.0000	
120 minute summer	19	126	0.804	1.154	186.6	2.7441	0.0000	
120 minute summer	20	126	0.806	1.256	198.9	3.3210	0.0000	
120 minute summer	21	126	0.806	1.306	230.0	4.6826	0.0000	
120 minute summer	22	126	0.807	1.207	222.5	361.0900	0.0000	
120 minute summer	23	128	0.807	1.457	228.3	2.5738	0.0000	
120 minute summer	24	2	-0.750	0.000	6.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
120 minute summer	1	1.000	2	50.5	1.236	0.313	3.2902	
120 minute summer	2	1.001	7	50.6	1.443	0.104	0.6744	
120 minute summer	3	2.000	4	16.7	0.457	0.075	0.4513	
120 minute summer	4	2.001	5	30.0	0.542	0.128	2.8115	
120 minute summer	5	2.002	6	28.2	0.359	0.130	1.1991	
120 minute summer	6	2.003	7	32.7	0.368	0.151	1.3736	
120 minute summer	7	1.002	10	89.9	0.898	0.351	3.6262	
120 minute summer	8	3.000	9	23.1	0.653	0.136	2.2186	
120 minute summer	9	3.001	10	34.1	0.745	0.167	1.6370	
120 minute summer	10	1.003	11	120.6	1.424	0.470	2.9540	
120 minute summer	11	1.004	17	138.1	1.182	0.251	8.8095	
120 minute summer	12	4.000	13	35.1	0.802	0.085	9.5362	
120 minute summer	13	4.001	14	26.6	0.556	0.092	9.1090	
120 minute summer	14	4.002	15	21.2	0.401	0.033	4.7457	
120 minute summer	15	4.003	16	37.2	0.418	0.121	3.4691	
120 minute summer	16	4.004	17	35.9	0.217	0.092	4.3694	
120 minute summer	17	1.005	18	177.3	0.653	0.580	7.0543	
120 minute summer	18	1.006	19	176.1	0.688	0.469	4.6916	
120 minute summer	19	1.007	20	185.9	0.660	0.540	11.1691	
120 minute summer	20	1.008	21	197.7	0.725	0.644	6.9819	
120 minute summer	21	1.009	23	228.3	0.811	0.325	4.0466	
120 minute summer	22	5.000	23	-222.5	-0.790	-0.298	6.0099	
120 minute summer	23	Hydro-Brake®	24	6.5				128.4

Results for 30 year 120 minute winter. 360 minute analysis at 2 minute timestep. Mass balance: 99.55%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
120 minute winter	1	64	1.304	0.154	39.0	0.8948	0.0000	OK
120 minute winter	2	64	1.036	0.086	39.0	0.1226	0.0000	OK
120 minute winter	3	128	0.869	0.169	13.0	0.5329	0.0000	OK
120 minute winter	4	128	0.869	0.194	23.8	0.5513	0.0000	OK
120 minute winter	5	130	0.869	0.294	23.8	0.5191	0.0000	OK
120 minute winter	6	128	0.868	0.318	27.3	0.6846	0.0000	OK
120 minute winter	7	128	0.868	0.343	72.5	0.8068	0.0000	OK
120 minute winter	8	130	0.869	0.119	17.9	0.4082	0.0000	OK
120 minute winter	9	128	0.869	0.269	27.6	0.6614	0.0000	OK
120 minute winter	10	128	0.869	0.419	98.0	0.7405	0.0000	OK
120 minute winter	11	130	0.869	0.469	112.4	1.6079	0.0000	OK
120 minute winter	12	124	0.869	0.094	27.1	0.4360	0.0000	OK
120 minute winter	13	124	0.868	0.668	28.8	1.3052	0.0000	
120 minute winter	14	124	0.868	0.893	22.9	29.4165	0.0000	
120 minute winter	15	118	0.868	1.043	34.6	3.3481	0.0000	
120 minute winter	16	130	0.870	1.070	32.5	1.8909	0.0000	
120 minute winter	17	130	0.868	1.118	148.9	2.8071	0.0000	
120 minute winter	18	130	0.870	1.170	146.0	2.0667	0.0000	
120 minute winter	19	120	0.868	1.218	152.4	2.8963	0.0000	
120 minute winter	20	124	0.869	1.319	162.9	3.4888	0.0000	
120 minute winter	21	122	0.869	1.369	186.2	4.9073	0.0000	
120 minute winter	22	124	0.870	1.270	179.0	408.0378	0.0000	
120 minute winter	23	122	0.869	1.519	185.8	2.6843	0.0000	
120 minute winter	24	2	-0.750	0.000	6.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
120 minute winter	1	1.000	2	39.0	1.153	0.242	2.7324	
120 minute winter	2	1.001	7	39.1	1.442	0.081	0.8069	
120 minute winter	3	2.000	4	13.0	0.429	0.058	0.7784	
120 minute winter	4	2.001	5	23.8	0.517	0.102	4.1712	
120 minute winter	5	2.002	6	23.0	0.358	0.106	1.6104	
120 minute winter	6	2.003	7	26.8	0.361	0.124	1.7816	
120 minute winter	7	1.002	10	71.4	0.858	0.279	4.4479	
120 minute winter	8	3.000	9	17.9	0.618	0.106	3.5802	
120 minute winter	9	3.001	10	27.0	0.737	0.133	2.1472	
120 minute winter	10	1.003	11	95.3	1.371	0.372	3.4338	
120 minute winter	11	1.004	17	109.9	1.248	0.200	9.3652	
120 minute winter	12	4.000	13	27.1	0.788	0.066	9.5757	
120 minute winter	13	4.001	14	22.9	0.578	0.079	9.1090	
120 minute winter	14	4.002	15	20.5	0.415	0.032	4.7457	
120 minute winter	15	4.003	16	32.5	0.430	0.105	3.4691	
120 minute winter	16	4.004	17	33.3	0.220	0.085	4.3694	
120 minute winter	17	1.005	18	146.0	0.699	0.478	7.0543	
120 minute winter	18	1.006	19	144.3	0.739	0.384	4.6916	
120 minute winter	19	1.007	20	152.8	0.676	0.444	11.1691	
120 minute winter	20	1.008	21	161.3	0.740	0.525	6.9819	
120 minute winter	21	1.009	23	185.8	0.660	0.264	4.0466	
120 minute winter	22	5.000	23	-179.0	-0.635	-0.240	6.0099	
120 minute winter	23	Hydro-Brake®	24	6.5				129.8

Results for 30 year 180 minute summer. 420 minute analysis at 4 minute timestep. Mass balance: 99.61%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
180 minute summer	1	96	1.301	0.151	37.3	0.8750	0.0000	OK
180 minute summer	2	96	1.034	0.084	37.3	0.1200	0.0000	OK
180 minute summer	3	188	0.838	0.138	12.4	0.4344	0.0000	OK
180 minute summer	4	188	0.838	0.163	22.7	0.4637	0.0000	OK
180 minute summer	5	184	0.838	0.263	22.7	0.4651	0.0000	OK
180 minute summer	6	184	0.838	0.288	26.3	0.6200	0.0000	OK
180 minute summer	7	180	0.839	0.314	69.7	0.7368	0.0000	OK
180 minute summer	8	96	0.845	0.095	17.1	0.3243	0.0000	OK
180 minute summer	9	192	0.839	0.239	26.4	0.5876	0.0000	OK
180 minute summer	10	184	0.839	0.389	94.9	0.6871	0.0000	OK
180 minute summer	11	196	0.839	0.439	108.6	1.5069	0.0000	OK
180 minute summer	12	96	0.863	0.088	25.9	0.4080	0.0000	OK
180 minute summer	13	184	0.840	0.640	27.6	1.2507	0.0000	
180 minute summer	14	184	0.841	0.866	25.1	25.4869	0.0000	
180 minute summer	15	184	0.841	1.016	32.7	3.2614	0.0000	
180 minute summer	16	184	0.841	1.041	33.9	1.8402	0.0000	
180 minute summer	17	196	0.841	1.091	141.5	2.7372	0.0000	
180 minute summer	18	184	0.839	1.139	140.0	2.0128	0.0000	
180 minute summer	19	192	0.840	1.190	148.8	2.8284	0.0000	
180 minute summer	20	184	0.840	1.290	156.4	3.4120	0.0000	
180 minute summer	21	184	0.839	1.339	179.9	4.8006	0.0000	
180 minute summer	22	188	0.840	1.240	172.8	385.8302	0.0000	
180 minute summer	23	184	0.840	1.490	177.6	2.6334	0.0000	
180 minute summer	24	4	-0.750	0.000	6.5	0.0000	0.0000	OK
Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
180 minute summer	1	1.000	2	37.3	1.137	0.231	2.6489	
180 minute summer	2	1.001	7	37.3	1.449	0.077	0.6988	
180 minute summer	3	2.000	4	12.4	0.425	0.056	0.6008	
180 minute summer	4	2.001	5	22.7	0.520	0.097	3.5077	
180 minute summer	5	2.002	6	22.2	0.355	0.102	1.4165	
180 minute summer	6	2.003	7	25.9	0.355	0.120	1.5909	
180 minute summer	7	1.002	10	69.0	0.849	0.269	4.0694	
180 minute summer	8	3.000	9	17.1	0.609	0.101	2.9067	
180 minute summer	9	3.001	10	25.9	0.728	0.127	1.9081	
180 minute summer	10	1.003	11	92.0	1.294	0.359	3.2227	
180 minute summer	11	1.004	17	101.8	1.076	0.185	9.1314	
180 minute summer	12	4.000	13	25.9	0.695	0.063	9.1952	
180 minute summer	13	4.001	14	25.1	0.515	0.087	9.1090	
180 minute summer	14	4.002	15	19.2	0.376	0.030	4.7457	
180 minute summer	15	4.003	16	33.9	0.386	0.110	3.4691	
180 minute summer	16	4.004	17	30.6	0.217	0.079	4.3694	
180 minute summer	17	1.005	18	140.0	0.602	0.458	7.0543	
180 minute summer	18	1.006	19	141.0	0.631	0.375	4.6916	
180 minute summer	19	1.007	20	146.8	0.592	0.427	11.1691	
180 minute summer	20	1.008	21	156.1	0.721	0.508	6.9819	
180 minute summer	21	1.009	23	177.6	0.631	0.252	4.0466	
180 minute summer	22	5.000	23	-172.8	-0.614	-0.232	6.0099	
180 minute summer	23	Hydro-Brake®	24	6.5				150.4

Results for 30 year 180 minute winter. 420 minute analysis at 4 minute timestep. Mass balance: 99.48%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
180 minute winter	1	96	1.282	0.132	28.7	0.7679	0.0000	OK
180 minute winter	2	92	1.024	0.074	28.7	0.1055	0.0000	OK
180 minute winter	3	176	0.909	0.209	9.6	0.6578	0.0000	OK
180 minute winter	4	176	0.909	0.234	17.6	0.6637	0.0000	OK
180 minute winter	5	176	0.908	0.333	17.6	0.5883	0.0000	OK
180 minute winter	6	176	0.908	0.358	20.3	0.7695	0.0000	OK
180 minute winter	7	192	0.908	0.383	53.7	0.9004	0.0000	OK
180 minute winter	8	176	0.909	0.159	13.2	0.5444	0.0000	OK
180 minute winter	9	184	0.908	0.308	20.4	0.7589	0.0000	OK
180 minute winter	10	188	0.908	0.458	73.1	0.8101	0.0000	OK
180 minute winter	11	188	0.908	0.508	84.1	1.7431	0.0000	OK
180 minute winter	12	188	0.910	0.135	19.9	0.6304	0.0000	OK
180 minute winter	13	188	0.909	0.709	21.2	1.3853	0.0000	
180 minute winter	14	188	0.909	0.934	20.5	35.4175	0.0000	
180 minute winter	15	184	0.910	1.085	25.9	3.4827	0.0000	
180 minute winter	16	180	0.910	1.110	25.3	1.9608	0.0000	
180 minute winter	17	188	0.908	1.158	112.3	2.9074	0.0000	
180 minute winter	18	180	0.909	1.209	110.5	2.1360	0.0000	
180 minute winter	19	188	0.909	1.259	116.0	2.9915	0.0000	
180 minute winter	20	180	0.908	1.358	122.9	3.5932	0.0000	
180 minute winter	21	180	0.909	1.409	140.8	5.0501	0.0000	
180 minute winter	22	184	0.909	1.309	134.1	438.1609	0.0000	
180 minute winter	23	184	0.908	1.558	139.9	2.7534	0.0000	
180 minute winter	24	4	-0.750	0.000	6.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
180 minute winter	1	1.000	2	28.7	1.053	0.178	2.2040	
180 minute winter	2	1.001	7	28.8	1.431	0.059	0.9394	
180 minute winter	3	2.000	4	9.6	0.399	0.043	1.0149	
180 minute winter	4	2.001	5	17.6	0.497	0.075	5.0300	
180 minute winter	5	2.002	6	17.1	0.354	0.079	1.8569	
180 minute winter	6	2.003	7	20.0	0.348	0.093	2.0246	
180 minute winter	7	1.002	10	53.1	0.794	0.207	4.9067	
180 minute winter	8	3.000	9	13.2	0.579	0.078	4.4843	
180 minute winter	9	3.001	10	20.3	0.729	0.100	2.4370	
180 minute winter	10	1.003	11	71.3	1.241	0.278	3.6614	
180 minute winter	11	1.004	17	80.1	1.139	0.145	9.5986	
180 minute winter	12	4.000	13	19.9	0.698	0.048	10.2885	
180 minute winter	13	4.001	14	20.5	0.524	0.071	9.1090	
180 minute winter	14	4.002	15	15.5	0.392	0.024	4.7457	
180 minute winter	15	4.003	16	25.3	0.405	0.082	3.4691	
180 minute winter	16	4.004	17	25.3	0.215	0.065	4.3694	
180 minute winter	17	1.005	18	110.5	0.640	0.362	7.0543	
180 minute winter	18	1.006	19	110.0	0.677	0.293	4.6916	
180 minute winter	19	1.007	20	115.5	0.622	0.336	11.1691	
180 minute winter	20	1.008	21	122.5	0.593	0.399	6.9819	
180 minute winter	21	1.009	23	139.9	0.497	0.199	4.0466	
180 minute winter	22	5.000	23	-134.1	-0.476	-0.180	6.0099	
180 minute winter	23	Hydro-Brake®	24	6.5				151.7

Results for 30 year 240 minute summer. 480 minute analysis at 4 minute timestep. Mass balance: 99.60%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
240 minute summer	1	124	1.287	0.137	31.2	0.7963	0.0000	OK
240 minute summer	2	124	1.027	0.077	30.8	0.1095	0.0000	OK
240 minute summer	3	252	0.860	0.160	10.4	0.5026	0.0000	OK
240 minute summer	4	252	0.859	0.184	19.0	0.5235	0.0000	OK
240 minute summer	5	244	0.859	0.284	18.8	0.5010	0.0000	OK
240 minute summer	6	244	0.859	0.309	21.7	0.6638	0.0000	OK
240 minute summer	7	244	0.859	0.334	57.3	0.7847	0.0000	OK
240 minute summer	8	252	0.859	0.109	14.3	0.3712	0.0000	OK
240 minute summer	9	244	0.858	0.258	21.9	0.6363	0.0000	OK
240 minute summer	10	244	0.859	0.409	78.5	0.7223	0.0000	OK
240 minute summer	11	244	0.859	0.459	90.1	1.5744	0.0000	OK
240 minute summer	12	248	0.859	0.084	21.7	0.3897	0.0000	OK
240 minute summer	13	248	0.858	0.658	22.8	1.2860	0.0000	
240 minute summer	14	244	0.858	0.883	17.3	27.9751	0.0000	
240 minute summer	15	240	0.858	1.033	27.5	3.3137	0.0000	
240 minute summer	16	244	0.860	1.060	26.0	1.8730	0.0000	
240 minute summer	17	244	0.858	1.108	118.8	2.7807	0.0000	
240 minute summer	18	244	0.858	1.158	116.7	2.0463	0.0000	
240 minute summer	19	244	0.859	1.209	123.8	2.8732	0.0000	
240 minute summer	20	244	0.859	1.309	129.8	3.4623	0.0000	
240 minute summer	21	244	0.859	1.359	147.9	4.8712	0.0000	
240 minute summer	22	248	0.859	1.259	141.2	399.6933	0.0000	
240 minute summer	23	244	0.859	1.509	147.0	2.6660	0.0000	
240 minute summer	24	4	-0.750	0.000	6.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
240 minute summer	1	1.000	2	30.8	1.071	0.191	2.3239	
240 minute summer	2	1.001	7	30.6	1.430	0.063	0.7615	
240 minute summer	3	2.000	4	10.3	0.406	0.046	0.7219	
240 minute summer	4	2.001	5	18.8	0.506	0.080	3.9457	
240 minute summer	5	2.002	6	18.2	0.352	0.084	1.5471	
240 minute summer	6	2.003	7	21.3	0.344	0.099	1.7213	
240 minute summer	7	1.002	10	56.6	0.806	0.221	4.3264	
240 minute summer	8	3.000	9	14.2	0.588	0.084	3.3449	
240 minute summer	9	3.001	10	21.9	0.729	0.107	2.0675	
240 minute summer	10	1.003	11	76.2	1.271	0.297	3.3660	
240 minute summer	11	1.004	17	85.1	1.007	0.155	9.2919	
240 minute summer	12	4.000	13	21.4	0.631	0.052	9.4219	
240 minute summer	13	4.001	14	17.3	0.487	0.060	9.1090	
240 minute summer	14	4.002	15	17.0	0.348	0.026	4.7457	
240 minute summer	15	4.003	16	26.0	0.389	0.084	3.4691	
240 minute summer	16	4.004	17	26.7	0.216	0.068	4.3694	
240 minute summer	17	1.005	18	116.7	0.571	0.382	7.0543	
240 minute summer	18	1.006	19	117.7	0.593	0.313	4.6916	
240 minute summer	19	1.007	20	122.3	0.560	0.356	11.1691	
240 minute summer	20	1.008	21	129.4	0.641	0.421	6.9819	
240 minute summer	21	1.009	23	147.0	0.522	0.209	4.0466	
240 minute summer	22	5.000	23	-141.2	-0.501	-0.189	6.0099	
240 minute summer	23	Hydro-Brake®	24	6.5				172.7

Results for 30 year 240 minute winter. 480 minute analysis at 4 minute timestep. Mass balance: 99.48%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
240 minute winter	1	124	1.269	0.119	23.2	0.6903	0.0000	OK
240 minute winter	2	124	1.017	0.067	23.1	0.0959	0.0000	OK
240 minute winter	3	236	0.932	0.232	7.7	0.7312	0.0000	OK
240 minute winter	4	236	0.932	0.257	14.1	0.7302	0.0000	OK
240 minute winter	5	236	0.932	0.357	14.1	0.6303	0.0000	OK
240 minute winter	6	240	0.932	0.382	16.4	0.8207	0.0000	OK
240 minute winter	7	240	0.932	0.407	43.4	0.9558	0.0000	OK
240 minute winter	8	236	0.932	0.182	10.6	0.6213	0.0000	OK
240 minute winter	9	236	0.932	0.332	16.4	0.8164	0.0000	OK
240 minute winter	10	240	0.932	0.482	59.4	0.8510	0.0000	OK
240 minute winter	11	240	0.932	0.532	67.9	1.8241	0.0000	
240 minute winter	12	244	0.933	0.158	16.1	0.7369	0.0000	OK
240 minute winter	13	244	0.934	0.734	17.1	1.4341	0.0000	
240 minute winter	14	244	0.935	0.960	14.9	39.1616	0.0000	
240 minute winter	15	240	0.937	1.112	22.2	3.5691	0.0000	
240 minute winter	16	232	0.933	1.133	21.6	2.0023	0.0000	
240 minute winter	17	240	0.932	1.182	89.3	2.9670	0.0000	
240 minute winter	18	232	0.933	1.233	89.4	2.1781	0.0000	
240 minute winter	19	240	0.933	1.283	92.7	3.0504	0.0000	
240 minute winter	20	240	0.932	1.382	98.7	3.6564	0.0000	
240 minute winter	21	248	0.933	1.433	113.6	5.1369	0.0000	
240 minute winter	22	240	0.933	1.333	107.0	456.9315	0.0000	
240 minute winter	23	240	0.933	1.583	111.5	2.7977	0.0000	
240 minute winter	24	4	-0.750	0.000	6.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
240 minute winter	1	1.000	2	23.1	0.985	0.143	1.9076	
240 minute winter	2	1.001	7	23.1	1.438	0.048	1.0063	
240 minute winter	3	2.000	4	7.7	0.378	0.035	1.1575	
240 minute winter	4	2.001	5	14.1	0.485	0.060	5.5408	
240 minute winter	5	2.002	6	13.8	0.352	0.064	2.0002	
240 minute winter	6	2.003	7	16.3	0.337	0.075	2.1619	
240 minute winter	7	1.002	10	43.1	0.749	0.168	5.1478	
240 minute winter	8	3.000	9	10.6	0.557	0.063	5.0135	
240 minute winter	9	3.001	10	16.4	0.726	0.081	2.5891	
240 minute winter	10	1.003	11	57.6	1.174	0.225	3.7456	
240 minute winter	11	1.004	17	64.7	1.065	0.117	9.6451	
240 minute winter	12	4.000	13	16.1	0.649	0.039	10.7139	
240 minute winter	13	4.001	14	14.4	0.502	0.050	9.1090	
240 minute winter	14	4.002	15	16.4	0.376	0.025	4.7457	
240 minute winter	15	4.003	16	21.6	0.390	0.070	3.4691	
240 minute winter	16	4.004	17	21.0	0.219	0.054	4.3694	
240 minute winter	17	1.005	18	89.4	0.613	0.292	7.0543	
240 minute winter	18	1.006	19	87.9	0.639	0.234	4.6916	
240 minute winter	19	1.007	20	92.7	0.586	0.270	11.1691	
240 minute winter	20	1.008	21	98.8	0.669	0.322	6.9819	
240 minute winter	21	1.009	23	111.5	0.418	0.158	4.0466	
240 minute winter	22	5.000	23	-107.0	-0.380	-0.144	6.0099	
240 minute winter	23	Hydro-Brake®	24	6.5				173.8

Results for 30 year 360 minute summer. 600 minute analysis at 8 minute timestep. Mass balance: 99.58%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute summer	1	184	1.269	0.119	23.4	0.6898	0.0000	OK
360 minute summer	2	184	1.017	0.067	23.0	0.0963	0.0000	OK
360 minute summer	3	368	0.875	0.175	7.8	0.5523	0.0000	OK
360 minute summer	4	368	0.876	0.201	14.2	0.5698	0.0000	OK
360 minute summer	5	368	0.877	0.302	14.1	0.5334	0.0000	OK
360 minute summer	6	360	0.877	0.327	16.3	0.7027	0.0000	OK
360 minute summer	7	360	0.877	0.352	42.9	0.8263	0.0000	OK
360 minute summer	8	360	0.875	0.125	10.7	0.4282	0.0000	OK
360 minute summer	9	360	0.876	0.276	16.5	0.6801	0.0000	OK
360 minute summer	10	360	0.876	0.426	58.9	0.7533	0.0000	OK
360 minute summer	11	360	0.876	0.476	68.0	1.6346	0.0000	OK
360 minute summer	12	344	0.880	0.105	16.3	0.4912	0.0000	OK
360 minute summer	13	344	0.880	0.680	17.1	1.3289	0.0000	
360 minute summer	14	344	0.880	0.905	12.4	31.2608	0.0000	
360 minute summer	15	344	0.885	1.060	19.1	3.4013	0.0000	
360 minute summer	16	360	0.879	1.079	19.5	1.9059	0.0000	
360 minute summer	17	360	0.875	1.125	87.0	2.8249	0.0000	
360 minute summer	18	368	0.875	1.175	85.1	2.0769	0.0000	
360 minute summer	19	360	0.876	1.226	91.1	2.9140	0.0000	
360 minute summer	20	360	0.876	1.326	95.6	3.5071	0.0000	
360 minute summer	21	368	0.875	1.375	110.3	4.9284	0.0000	
360 minute summer	22	368	0.875	1.275	103.7	412.1021	0.0000	
360 minute summer	23	368	0.876	1.526	109.6	2.6972	0.0000	
360 minute summer	24	8	-0.750	0.000	6.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
360 minute summer	1	1.000	2	23.0	0.976	0.143	1.9095	
360 minute summer	2	1.001	7	22.9	1.425	0.047	0.8214	
360 minute summer	3	2.000	4	7.7	0.380	0.035	0.8155	
360 minute summer	4	2.001	5	14.1	0.488	0.060	4.3311	
360 minute summer	5	2.002	6	13.7	0.350	0.063	1.6629	
360 minute summer	6	2.003	7	16.0	0.333	0.074	1.8338	
360 minute summer	7	1.002	10	42.5	0.737	0.166	4.5425	
360 minute summer	8	3.000	9	10.6	0.544	0.062	3.7369	
360 minute summer	9	3.001	10	16.4	0.729	0.081	2.2041	
360 minute summer	10	1.003	11	57.6	1.154	0.225	3.4825	
360 minute summer	11	1.004	17	63.9	0.930	0.116	9.4206	
360 minute summer	12	4.000	13	16.1	0.565	0.039	9.7682	
360 minute summer	13	4.001	14	12.4	0.467	0.043	9.1090	
360 minute summer	14	4.002	15	13.1	0.328	0.020	4.7457	
360 minute summer	15	4.003	16	19.5	0.366	0.063	3.4691	
360 minute summer	16	4.004	17	18.4	0.202	0.047	4.3694	
360 minute summer	17	1.005	18	85.1	0.532	0.279	7.0543	
360 minute summer	18	1.006	19	86.2	0.543	0.230	4.6916	
360 minute summer	19	1.007	20	89.6	0.513	0.261	11.1691	
360 minute summer	20	1.008	21	95.3	0.628	0.310	6.9819	
360 minute summer	21	1.009	23	109.6	0.389	0.156	4.0466	
360 minute summer	22	5.000	23	-103.7	-0.368	-0.139	6.0099	
360 minute summer	23	Hydro-Brake®	24	6.5				215.8

Results for 30 year 360 minute winter. 600 minute analysis at 8 minute timestep. Mass balance: 99.46%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute winter	1	184	1.252	0.102	17.0	0.5921	0.0000	OK
360 minute winter	2	184	1.009	0.059	16.9	0.0844	0.0000	OK
360 minute winter	3	352	0.957	0.257	5.7	0.8086	0.0000	OK
360 minute winter	4	352	0.957	0.282	10.4	0.8001	0.0000	OK
360 minute winter	5	352	0.957	0.382	10.4	0.6749	0.0000	OK
360 minute winter	6	352	0.957	0.407	11.9	0.8751	0.0000	OK
360 minute winter	7	352	0.957	0.432	31.5	1.0155	0.0000	OK
360 minute winter	8	352	0.959	0.209	7.8	0.7131	0.0000	OK
360 minute winter	9	352	0.958	0.358	12.1	0.8813	0.0000	OK
360 minute winter	10	352	0.958	0.508	42.7	0.8969	0.0000	OK
360 minute winter	11	352	0.957	0.557	49.2	1.9119	0.0000	
360 minute winter	12	360	0.960	0.185	11.8	0.8611	0.0000	OK
360 minute winter	13	360	0.961	0.761	12.6	1.4860	0.0000	
360 minute winter	14	360	0.961	0.986	13.4	43.0380	0.0000	
360 minute winter	15	360	0.963	1.138	15.2	3.6516	0.0000	
360 minute winter	16	344	0.957	1.157	13.2	2.0440	0.0000	
360 minute winter	17	368	0.959	1.209	65.8	3.0343	0.0000	
360 minute winter	18	352	0.958	1.258	64.5	2.2228	0.0000	
360 minute winter	19	360	0.957	1.307	67.9	3.1072	0.0000	
360 minute winter	20	352	0.957	1.407	71.8	3.7204	0.0000	
360 minute winter	21	360	0.957	1.457	82.5	5.2244	0.0000	
360 minute winter	22	352	0.957	1.357	76.2	475.6867	0.0000	
360 minute winter	23	344	0.956	1.606	81.6	2.8379	0.0000	
360 minute winter	24	8	-0.750	0.000	6.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
360 minute winter	1	1.000	2	16.9	0.894	0.105	1.5493	
360 minute winter	2	1.001	7	17.0	1.404	0.035	1.0779	
360 minute winter	3	2.000	4	5.7	0.353	0.026	1.3086	
360 minute winter	4	2.001	5	10.4	0.470	0.044	6.0703	
360 minute winter	5	2.002	6	10.0	0.351	0.046	2.1453	
360 minute winter	6	2.003	7	11.7	0.325	0.054	2.2992	
360 minute winter	7	1.002	10	30.9	0.685	0.121	5.3738	
360 minute winter	8	3.000	9	7.8	0.509	0.046	5.6073	
360 minute winter	9	3.001	10	12.0	0.682	0.059	2.7379	
360 minute winter	10	1.003	11	41.8	1.053	0.163	3.8017	
360 minute winter	11	1.004	17	46.7	0.971	0.085	9.6452	
360 minute winter	12	4.000	13	11.8	0.580	0.029	11.2328	
360 minute winter	13	4.001	14	11.2	0.474	0.039	9.1090	
360 minute winter	14	4.002	15	9.0	0.335	0.014	4.7457	
360 minute winter	15	4.003	16	13.2	0.386	0.043	3.4691	
360 minute winter	16	4.004	17	15.0	0.214	0.039	4.3694	
360 minute winter	17	1.005	18	64.5	0.555	0.211	7.0543	
360 minute winter	18	1.006	19	64.3	0.586	0.171	4.6916	
360 minute winter	19	1.007	20	67.4	0.521	0.196	11.1691	
360 minute winter	20	1.008	21	71.6	0.574	0.233	6.9819	
360 minute winter	21	1.009	23	81.6	0.333	0.116	4.0466	
360 minute winter	22	5.000	23	-76.2	-0.271	-0.102	6.0099	
360 minute winter	23	Hydro-Brake®	24	6.5				217.5

Results for 30 year 480 minute summer. 720 minute analysis at 8 minute timestep. Mass balance: 99.58%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
480 minute summer	1	248	1.256	0.106	18.2	0.6128	0.0000	OK
480 minute summer	2	248	1.011	0.061	18.2	0.0875	0.0000	OK
480 minute summer	3	488	0.879	0.179	6.1	0.5653	0.0000	OK
480 minute summer	4	488	0.879	0.204	11.2	0.5800	0.0000	OK
480 minute summer	5	480	0.879	0.304	11.2	0.5364	0.0000	OK
480 minute summer	6	480	0.879	0.329	13.2	0.7064	0.0000	OK
480 minute summer	7	480	0.878	0.353	34.4	0.8306	0.0000	OK
480 minute summer	8	488	0.878	0.128	8.4	0.4373	0.0000	OK
480 minute summer	9	480	0.878	0.278	13.0	0.6852	0.0000	OK
480 minute summer	10	480	0.878	0.428	47.4	0.7569	0.0000	OK
480 minute summer	11	480	0.878	0.478	54.4	1.6413	0.0000	OK
480 minute summer	12	480	0.889	0.114	12.7	0.5309	0.0000	OK
480 minute summer	13	480	0.887	0.687	13.5	1.3424	0.0000	
480 minute summer	14	480	0.887	0.912	9.6	32.2294	0.0000	
480 minute summer	15	480	0.890	1.065	18.8	3.4185	0.0000	
480 minute summer	16	496	0.882	1.082	19.1	1.9113	0.0000	
480 minute summer	17	480	0.879	1.129	71.1	2.8342	0.0000	
480 minute summer	18	456	0.880	1.180	70.6	2.0848	0.0000	
480 minute summer	19	480	0.878	1.228	73.6	2.9198	0.0000	
480 minute summer	20	488	0.879	1.329	78.7	3.5162	0.0000	
480 minute summer	21	488	0.880	1.380	89.7	4.9476	0.0000	
480 minute summer	22	488	0.880	1.280	83.4	416.0916	0.0000	
480 minute summer	23	488	0.880	1.530	89.8	2.7040	0.0000	
480 minute summer	24	8	-0.750	0.000	6.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
480 minute summer	1	1.000	2	18.2	0.902	0.113	1.6297	
480 minute summer	2	1.001	7	18.2	1.437	0.038	0.8247	
480 minute summer	3	2.000	4	6.1	0.358	0.027	0.8384	
480 minute summer	4	2.001	5	11.2	0.479	0.048	4.3816	
480 minute summer	5	2.002	6	11.2	0.353	0.051	1.6739	
480 minute summer	6	2.003	7	13.1	0.329	0.061	1.8450	
480 minute summer	7	1.002	10	34.3	0.695	0.134	4.5660	
480 minute summer	8	3.000	9	8.4	0.519	0.050	3.7897	
480 minute summer	9	3.001	10	13.1	0.683	0.064	2.2197	
480 minute summer	10	1.003	11	46.3	1.079	0.181	3.4954	
480 minute summer	11	1.004	17	52.0	0.886	0.095	9.4331	
480 minute summer	12	4.000	13	12.7	0.539	0.031	9.9118	
480 minute summer	13	4.001	14	9.6	0.434	0.033	9.1090	
480 minute summer	14	4.002	15	18.8	0.314	0.029	4.7457	
480 minute summer	15	4.003	16	19.1	0.340	0.062	3.4691	
480 minute summer	16	4.004	17	18.9	0.194	0.048	4.3694	
480 minute summer	17	1.005	18	70.6	0.504	0.231	7.0543	
480 minute summer	18	1.006	19	69.8	0.513	0.186	4.6916	
480 minute summer	19	1.007	20	74.0	0.483	0.215	11.1691	
480 minute summer	20	1.008	21	78.0	0.577	0.254	6.9819	
480 minute summer	21	1.009	23	89.8	0.319	0.128	4.0466	
480 minute summer	22	5.000	23	-83.4	-0.296	-0.112	6.0099	
480 minute summer	23	Hydro-Brake®	24	6.5				260.0

Results for 30 year 480 minute winter. 720 minute analysis at 8 minute timestep. Mass balance: 99.47%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
480 minute winter	1	248	1.242	0.092	13.6	0.5338	0.0000	OK
480 minute winter	2	240	1.003	0.053	13.6	0.0760	0.0000	OK
480 minute winter	3	480	0.975	0.275	4.5	0.8674	0.0000	OK
480 minute winter	4	480	0.975	0.300	8.3	0.8527	0.0000	OK
480 minute winter	5	480	0.974	0.399	8.3	0.7047	0.0000	OK
480 minute winter	6	480	0.973	0.423	9.6	0.9103	0.0000	OK
480 minute winter	7	480	0.973	0.448	25.3	1.0528	0.0000	OK
480 minute winter	8	480	0.971	0.221	6.2	0.7563	0.0000	OK
480 minute winter	9	480	0.971	0.371	9.6	0.9127	0.0000	OK
480 minute winter	10	480	0.971	0.521	34.5	0.9205	0.0000	OK
480 minute winter	11	480	0.970	0.570	39.4	1.9546	0.0000	OK
480 minute winter	12	472	0.975	0.200	9.4	0.9328	0.0000	OK
480 minute winter	13	472	0.974	0.774	10.0	1.5125	0.0000	OK
480 minute winter	14	472	0.974	0.999	11.5	44.8877	0.0000	OK
480 minute winter	15	472	0.976	1.151	12.3	3.6947	0.0000	OK
480 minute winter	16	456	0.968	1.168	13.9	2.0642	0.0000	OK
480 minute winter	17	464	0.968	1.218	52.2	3.0571	0.0000	OK
480 minute winter	18	472	0.968	1.268	51.4	2.2399	0.0000	OK
480 minute winter	19	472	0.968	1.318	54.3	3.1326	0.0000	OK
480 minute winter	20	464	0.968	1.418	57.3	3.7504	0.0000	OK
480 minute winter	21	472	0.968	1.468	65.7	5.2624	0.0000	OK
480 minute winter	22	472	0.968	1.368	59.6	484.7558	0.0000	OK
480 minute winter	23	464	0.968	1.618	65.1	2.8587	0.0000	OK
480 minute winter	24	8	-0.750	0.000	6.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
480 minute winter	1	1.000	2	13.6	0.839	0.084	1.3286	
480 minute winter	2	1.001	7	13.6	1.327	0.028	1.1272	
480 minute winter	3	2.000	4	4.5	0.331	0.020	1.4226	
480 minute winter	4	2.001	5	8.3	0.459	0.035	6.4378	
480 minute winter	5	2.002	6	8.1	0.353	0.037	2.2358	
480 minute winter	6	2.003	7	9.5	0.321	0.044	2.3807	
480 minute winter	7	1.002	10	24.9	0.649	0.097	5.4807	
480 minute winter	8	3.000	9	6.2	0.475	0.037	5.8820	
480 minute winter	9	3.001	10	9.6	0.643	0.047	2.7966	
480 minute winter	10	1.003	11	33.5	0.997	0.131	3.8185	
480 minute winter	11	1.004	17	37.8	0.910	0.069	9.6452	
480 minute winter	12	4.000	13	9.4	0.543	0.023	11.5402	
480 minute winter	13	4.001	14	9.1	0.449	0.032	9.1090	
480 minute winter	14	4.002	15	8.0	0.323	0.012	4.7457	
480 minute winter	15	4.003	16	13.9	0.364	0.045	3.4691	
480 minute winter	16	4.004	17	11.3	0.203	0.029	4.3694	
480 minute winter	17	1.005	18	51.4	0.536	0.168	7.0543	
480 minute winter	18	1.006	19	51.5	0.549	0.137	4.6916	
480 minute winter	19	1.007	20	53.8	0.488	0.156	11.1691	
480 minute winter	20	1.008	21	57.0	0.586	0.186	6.9819	
480 minute winter	21	1.009	23	65.1	0.326	0.093	4.0466	
480 minute winter	22	5.000	23	-59.6	-0.212	-0.080	6.0099	
480 minute winter	23	Hydro-Brake®	24	6.5				261.0

Results for 30 year 600 minute summer. 840 minute analysis at 15 minute timestep. Mass balance: 99.62%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
600 minute summer	1	315	1.245	0.095	14.8	0.5542	0.0000	OK
600 minute summer	2	315	1.006	0.056	14.8	0.0794	0.0000	OK
600 minute summer	3	555	0.883	0.183	4.9	0.5755	0.0000	OK
600 minute summer	4	555	0.882	0.207	9.0	0.5878	0.0000	OK
600 minute summer	5	555	0.878	0.303	9.0	0.5348	0.0000	OK
600 minute summer	6	555	0.878	0.328	10.5	0.7051	0.0000	OK
600 minute summer	7	555	0.878	0.353	27.8	0.8297	0.0000	OK
600 minute summer	8	555	0.878	0.128	6.8	0.4384	0.0000	OK
600 minute summer	9	570	0.875	0.275	10.5	0.6780	0.0000	OK
600 minute summer	10	555	0.876	0.426	38.1	0.7524	0.0000	OK
600 minute summer	11	555	0.875	0.475	43.4	1.6284	0.0000	OK
600 minute summer	12	615	0.884	0.109	10.3	0.5058	0.0000	OK
600 minute summer	13	600	0.883	0.683	11.0	1.3341	0.0000	
600 minute summer	14	600	0.883	0.908	9.7	31.6814	0.0000	
600 minute summer	15	600	0.887	1.062	12.5	3.4069	0.0000	
600 minute summer	16	585	0.870	1.070	12.8	1.8909	0.0000	
600 minute summer	17	600	0.875	1.125	56.9	2.8233	0.0000	
600 minute summer	18	570	0.874	1.174	56.7	2.0745	0.0000	
600 minute summer	19	600	0.875	1.225	59.3	2.9111	0.0000	
600 minute summer	20	600	0.875	1.325	63.2	3.5034	0.0000	
600 minute summer	21	585	0.874	1.374	72.0	4.9264	0.0000	
600 minute summer	22	570	0.874	1.274	65.7	411.5350	0.0000	
600 minute summer	23	570	0.875	1.525	72.5	2.6940	0.0000	
600 minute summer	24	15	-0.750	0.000	6.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
600 minute summer	1	1.000	2	14.8	0.847	0.092	1.4132	
600 minute summer	2	1.001	7	14.8	1.363	0.031	0.8224	
600 minute summer	3	2.000	4	4.9	0.339	0.022	0.8560	
600 minute summer	4	2.001	5	9.0	0.464	0.038	4.4080	
600 minute summer	5	2.002	6	8.9	0.349	0.041	1.6691	
600 minute summer	6	2.003	7	10.4	0.317	0.048	1.8418	
600 minute summer	7	1.002	10	27.6	0.667	0.108	4.5491	
600 minute summer	8	3.000	9	6.8	0.489	0.040	3.7495	
600 minute summer	9	3.001	10	10.5	0.671	0.052	2.1955	
600 minute summer	10	1.003	11	36.8	0.993	0.144	3.4762	
600 minute summer	11	1.004	17	41.7	0.858	0.076	9.4088	
600 minute summer	12	4.000	13	10.3	0.529	0.025	9.8212	
600 minute summer	13	4.001	14	7.8	0.446	0.027	9.1090	
600 minute summer	14	4.002	15	7.1	0.306	0.011	4.7457	
600 minute summer	15	4.003	16	12.8	0.333	0.042	3.4691	
600 minute summer	16	4.004	17	11.6	0.186	0.030	4.3694	
600 minute summer	17	1.005	18	56.7	0.488	0.185	7.0543	
600 minute summer	18	1.006	19	56.2	0.495	0.150	4.6916	
600 minute summer	19	1.007	20	59.4	0.456	0.173	11.1691	
600 minute summer	20	1.008	21	62.5	0.518	0.203	6.9819	
600 minute summer	21	1.009	23	72.5	0.321	0.103	4.0466	
600 minute summer	22	5.000	23	-65.7	-0.233	-0.088	6.0099	
600 minute summer	23	Hydro-Brake®	24	6.5				301.2

Results for 30 year 600 minute winter. 840 minute analysis at 15 minute timestep. Mass balance: 99.52%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
600 minute winter	1	315	1.234	0.084	11.3	0.4887	0.0000	OK
600 minute winter	2	300	0.999	0.049	11.3	0.0694	0.0000	OK
600 minute winter	3	570	0.972	0.272	3.8	0.8553	0.0000	OK
600 minute winter	4	570	0.971	0.296	6.9	0.8420	0.0000	OK
600 minute winter	5	570	0.971	0.396	6.9	0.6995	0.0000	OK
600 minute winter	6	570	0.971	0.421	8.1	0.9043	0.0000	OK
600 minute winter	7	570	0.970	0.445	21.3	1.0467	0.0000	OK
600 minute winter	8	585	0.969	0.219	5.2	0.7477	0.0000	OK
600 minute winter	9	570	0.970	0.370	8.0	0.9113	0.0000	OK
600 minute winter	10	570	0.970	0.520	29.0	0.9194	0.0000	OK
600 minute winter	11	570	0.970	0.570	33.0	1.9555	0.0000	OK
600 minute winter	12	600	0.973	0.198	7.9	0.9242	0.0000	OK
600 minute winter	13	600	0.973	0.773	8.4	1.5096	0.0000	OK
600 minute winter	14	600	0.973	0.998	7.6	44.7282	0.0000	OK
600 minute winter	15	600	0.975	1.150	10.7	3.6907	0.0000	OK
600 minute winter	16	570	0.968	1.168	10.4	2.0640	0.0000	OK
600 minute winter	17	570	0.969	1.219	43.7	3.0609	0.0000	OK
600 minute winter	18	570	0.971	1.271	43.3	2.2459	0.0000	OK
600 minute winter	19	585	0.968	1.318	45.5	3.1333	0.0000	OK
600 minute winter	20	585	0.969	1.419	48.0	3.7524	0.0000	OK
600 minute winter	21	585	0.968	1.468	55.1	5.2641	0.0000	OK
600 minute winter	22	585	0.969	1.369	48.8	485.3558	0.0000	OK
600 minute winter	23	585	0.968	1.618	54.6	2.8588	0.0000	OK
600 minute winter	24	15	-0.750	0.000	6.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
600 minute winter	1	1.000	2	11.3	0.793	0.070	1.1680	
600 minute winter	2	1.001	7	11.3	1.259	0.023	1.1134	
600 minute winter	3	2.000	4	3.8	0.320	0.017	1.3993	
600 minute winter	4	2.001	5	6.9	0.449	0.029	6.3689	
600 minute winter	5	2.002	6	6.8	0.350	0.031	2.2206	
600 minute winter	6	2.003	7	8.0	0.311	0.037	2.3674	
600 minute winter	7	1.002	10	21.0	0.618	0.082	5.4675	
600 minute winter	8	3.000	9	5.2	0.451	0.031	5.8377	
600 minute winter	9	3.001	10	8.0	0.614	0.039	2.7944	
600 minute winter	10	1.003	11	28.0	0.943	0.109	3.8184	
600 minute winter	11	1.004	17	31.5	0.861	0.057	9.6452	
600 minute winter	12	4.000	13	7.9	0.502	0.019	11.5033	
600 minute winter	13	4.001	14	7.3	0.428	0.025	9.1090	
600 minute winter	14	4.002	15	8.3	0.300	0.013	4.7457	
600 minute winter	15	4.003	16	10.4	0.340	0.034	3.4691	
600 minute winter	16	4.004	17	10.4	0.196	0.027	4.3694	
600 minute winter	17	1.005	18	43.3	0.511	0.142	7.0543	
600 minute winter	18	1.006	19	43.1	0.523	0.115	4.6916	
600 minute winter	19	1.007	20	45.1	0.464	0.131	11.1691	
600 minute winter	20	1.008	21	47.9	0.486	0.156	6.9819	
600 minute winter	21	1.009	23	54.6	0.295	0.078	4.0466	
600 minute winter	22	5.000	23	-48.8	-0.173	-0.065	6.0099	
600 minute winter	23	Hydro-Brake®	24	6.5				302.3

Results for 30 year 720 minute summer. 960 minute analysis at 15 minute timestep. Mass balance: 99.62%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
720 minute summer	1	375	1.240	0.090	13.1	0.5228	0.0000	OK
720 minute summer	2	375	1.002	0.052	13.1	0.0748	0.0000	OK
720 minute summer	3	645	0.873	0.173	4.4	0.5446	0.0000	OK
720 minute summer	4	645	0.873	0.198	8.0	0.5613	0.0000	OK
720 minute summer	5	645	0.871	0.296	8.0	0.5229	0.0000	OK
720 minute summer	6	645	0.870	0.320	9.5	0.6890	0.0000	OK
720 minute summer	7	645	0.870	0.345	24.8	0.8112	0.0000	OK
720 minute summer	8	645	0.874	0.124	6.0	0.4230	0.0000	OK
720 minute summer	9	645	0.870	0.270	9.3	0.6646	0.0000	OK
720 minute summer	10	645	0.870	0.420	34.1	0.7420	0.0000	OK
720 minute summer	11	645	0.869	0.469	38.7	1.6097	0.0000	OK
720 minute summer	12	660	0.874	0.099	9.1	0.4630	0.0000	OK
720 minute summer	13	660	0.874	0.674	9.7	1.3162	0.0000	
720 minute summer	14	630	0.873	0.898	7.3	30.2277	0.0000	
720 minute summer	15	630	0.877	1.052	11.6	3.3772	0.0000	
720 minute summer	16	675	0.868	1.068	10.6	1.8868	0.0000	
720 minute summer	17	645	0.868	1.118	51.3	2.8062	0.0000	
720 minute summer	18	690	0.867	1.167	50.1	2.0628	0.0000	
720 minute summer	19	675	0.867	1.217	53.8	2.8937	0.0000	
720 minute summer	20	690	0.867	1.317	56.1	3.4845	0.0000	
720 minute summer	21	690	0.867	1.367	64.5	4.9012	0.0000	
720 minute summer	22	690	0.867	1.267	57.9	406.0198	0.0000	
720 minute summer	23	690	0.868	1.518	64.0	2.6823	0.0000	
720 minute summer	24	15	-0.750	0.000	6.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
720 minute summer	1	1.000	2	13.1	0.817	0.081	1.2976	
720 minute summer	2	1.001	7	13.1	1.316	0.027	0.7941	
720 minute summer	3	2.000	4	4.4	0.332	0.020	0.7995	
720 minute summer	4	2.001	5	8.0	0.458	0.034	4.2331	
720 minute summer	5	2.002	6	8.0	0.351	0.037	1.6241	
720 minute summer	6	2.003	7	9.4	0.318	0.044	1.7940	
720 minute summer	7	1.002	10	24.7	0.640	0.097	4.4648	
720 minute summer	8	3.000	9	6.0	0.470	0.035	3.6453	
720 minute summer	9	3.001	10	9.3	0.648	0.046	2.1557	
720 minute summer	10	1.003	11	32.9	0.967	0.128	3.4390	
720 minute summer	11	1.004	17	37.1	0.841	0.067	9.3694	
720 minute summer	12	4.000	13	9.1	0.511	0.022	9.6693	
720 minute summer	13	4.001	14	7.3	0.430	0.025	9.1090	
720 minute summer	14	4.002	15	7.3	0.298	0.011	4.7457	
720 minute summer	15	4.003	16	10.6	0.333	0.035	3.4691	
720 minute summer	16	4.004	17	11.3	0.195	0.029	4.3694	
720 minute summer	17	1.005	18	50.1	0.479	0.164	7.0543	
720 minute summer	18	1.006	19	51.1	0.491	0.136	4.6916	
720 minute summer	19	1.007	20	52.7	0.441	0.153	11.1691	
720 minute summer	20	1.008	21	56.1	0.529	0.183	6.9819	
720 minute summer	21	1.009	23	64.0	0.322	0.091	4.0466	
720 minute summer	22	5.000	23	-57.9	-0.206	-0.078	6.0099	
720 minute summer	23	Hydro-Brake®	24	6.5				343.8

Results for 30 year 720 minute winter. 960 minute analysis at 15 minute timestep. Mass balance: 99.54%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
720 minute winter	1	375	1.229	0.079	9.9	0.4592	0.0000	OK
720 minute winter	2	360	0.995	0.045	9.9	0.0650	0.0000	OK
720 minute winter	3	690	0.968	0.268	3.3	0.8453	0.0000	OK
720 minute winter	4	690	0.968	0.293	6.0	0.8327	0.0000	OK
720 minute winter	5	705	0.968	0.393	6.0	0.6943	0.0000	OK
720 minute winter	6	705	0.968	0.418	7.0	0.8984	0.0000	OK
720 minute winter	7	705	0.968	0.443	18.4	1.0408	0.0000	OK
720 minute winter	8	690	0.970	0.220	4.5	0.7526	0.0000	OK
720 minute winter	9	705	0.968	0.368	7.0	0.9059	0.0000	OK
720 minute winter	10	705	0.968	0.518	25.0	0.9157	0.0000	OK
720 minute winter	11	705	0.967	0.567	28.6	1.9464	0.0000	OK
720 minute winter	12	705	0.969	0.194	6.9	0.9022	0.0000	OK
720 minute winter	13	705	0.969	0.769	7.3	1.5012	0.0000	OK
720 minute winter	14	675	0.969	0.994	9.3	44.1450	0.0000	OK
720 minute winter	15	705	0.974	1.149	9.4	3.6859	0.0000	OK
720 minute winter	16	690	0.965	1.165	10.3	2.0589	0.0000	OK
720 minute winter	17	705	0.972	1.222	38.0	3.0676	0.0000	OK
720 minute winter	18	690	0.968	1.268	37.6	2.2398	0.0000	OK
720 minute winter	19	705	0.967	1.317	39.5	3.1310	0.0000	OK
720 minute winter	20	690	0.966	1.416	42.1	3.7465	0.0000	OK
720 minute winter	21	690	0.967	1.467	48.2	5.2578	0.0000	OK
720 minute winter	22	690	0.966	1.366	41.8	482.8186	0.0000	OK
720 minute winter	23	705	0.964	1.614	48.0	2.8525	0.0000	OK
720 minute winter	24	15	-0.750	0.000	6.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
720 minute winter	1	1.000	2	9.9	0.761	0.061	1.0652	
720 minute winter	2	1.001	7	9.9	1.212	0.020	1.1038	
720 minute winter	3	2.000	4	3.3	0.309	0.015	1.3795	
720 minute winter	4	2.001	5	6.0	0.438	0.026	6.3013	
720 minute winter	5	2.002	6	5.9	0.350	0.027	2.2052	
720 minute winter	6	2.003	7	6.8	0.310	0.032	2.3543	
720 minute winter	7	1.002	10	18.0	0.597	0.070	5.4512	
720 minute winter	8	3.000	9	4.5	0.430	0.027	5.8332	
720 minute winter	9	3.001	10	7.0	0.598	0.035	2.7850	
720 minute winter	10	1.003	11	24.4	0.891	0.095	3.8158	
720 minute winter	11	1.004	17	27.7	0.835	0.050	9.6452	
720 minute winter	12	4.000	13	6.9	0.493	0.017	11.4083	
720 minute winter	13	4.001	14	6.6	0.430	0.023	9.1090	
720 minute winter	14	4.002	15	-9.2	0.298	-0.014	4.7457	
720 minute winter	15	4.003	16	10.3	0.325	0.034	3.4691	
720 minute winter	16	4.004	17	-9.3	0.186	-0.024	4.3694	
720 minute winter	17	1.005	18	37.6	0.494	0.123	7.0543	
720 minute winter	18	1.006	19	37.4	0.510	0.100	4.6916	
720 minute winter	19	1.007	20	39.5	0.468	0.115	11.1691	
720 minute winter	20	1.008	21	41.9	0.523	0.136	6.9819	
720 minute winter	21	1.009	23	48.0	0.244	0.068	4.0466	
720 minute winter	22	5.000	23	-41.8	-0.149	-0.056	6.0099	
720 minute winter	23	Hydro-Brake®	24	6.5				345.8

Results for 30 year 960 minute summer. 1200 minute analysis at 15 minute timestep. Mass balance: 99.70%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
960 minute summer	1	495	1.232	0.082	10.7	0.4749	0.0000	OK
960 minute summer	2	495	0.997	0.047	10.7	0.0677	0.0000	OK
960 minute summer	3	780	0.848	0.148	3.6	0.4669	0.0000	OK
960 minute summer	4	780	0.848	0.173	6.6	0.4908	0.0000	OK
960 minute summer	5	900	0.847	0.272	6.6	0.4810	0.0000	OK
960 minute summer	6	780	0.848	0.298	7.8	0.6397	0.0000	OK
960 minute summer	7	780	0.848	0.323	20.3	0.7586	0.0000	OK
960 minute summer	8	780	0.848	0.098	4.9	0.3357	0.0000	OK
960 minute summer	9	780	0.848	0.248	7.6	0.6112	0.0000	OK
960 minute summer	10	900	0.848	0.398	28.1	0.7025	0.0000	OK
960 minute summer	11	900	0.847	0.447	31.9	1.5346	0.0000	OK
960 minute summer	12	915	0.855	0.080	7.4	0.3723	0.0000	OK
960 minute summer	13	840	0.853	0.653	7.9	1.2760	0.0000	
960 minute summer	14	840	0.854	0.879	7.6	27.3459	0.0000	
960 minute summer	15	840	0.857	1.032	10.9	3.3114	0.0000	
960 minute summer	16	915	0.852	1.052	12.0	1.8594	0.0000	
960 minute summer	17	915	0.848	1.098	41.8	2.7560	0.0000	
960 minute summer	18	915	0.848	1.148	41.3	2.0284	0.0000	
960 minute summer	19	915	0.849	1.199	42.6	2.8495	0.0000	
960 minute summer	20	915	0.848	1.298	46.1	3.4322	0.0000	
960 minute summer	21	870	0.847	1.347	52.2	4.8307	0.0000	
960 minute summer	22	870	0.848	1.248	46.6	391.5818	0.0000	
960 minute summer	23	765	0.847	1.497	52.1	2.6460	0.0000	
960 minute summer	24	15	-0.750	0.000	6.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
960 minute summer	1	1.000	2	10.7	0.768	0.066	1.1271	
960 minute summer	2	1.001	7	10.7	1.241	0.022	0.7163	
960 minute summer	3	2.000	4	3.6	0.314	0.016	0.6566	
960 minute summer	4	2.001	5	6.6	0.447	0.028	3.7067	
960 minute summer	5	2.002	6	6.6	0.358	0.030	1.4749	
960 minute summer	6	2.003	7	7.8	0.322	0.036	1.6504	
960 minute summer	7	1.002	10	20.4	0.610	0.080	4.1857	
960 minute summer	8	3.000	9	4.9	0.432	0.029	3.1174	
960 minute summer	9	3.001	10	7.7	0.613	0.038	1.9829	
960 minute summer	10	1.003	11	27.2	0.925	0.106	3.2854	
960 minute summer	11	1.004	17	30.9	0.861	0.056	9.1989	
960 minute summer	12	4.000	13	7.4	0.519	0.018	9.3654	
960 minute summer	13	4.001	14	5.7	0.430	0.020	9.1090	
960 minute summer	14	4.002	15	10.6	0.308	0.016	4.7457	
960 minute summer	15	4.003	16	12.0	0.333	0.039	3.4691	
960 minute summer	16	4.004	17	11.1	0.192	0.029	4.3694	
960 minute summer	17	1.005	18	41.3	0.479	0.135	7.0543	
960 minute summer	18	1.006	19	40.4	0.489	0.108	4.6916	
960 minute summer	19	1.007	20	43.3	0.429	0.126	11.1691	
960 minute summer	20	1.008	21	45.4	0.508	0.148	6.9819	
960 minute summer	21	1.009	23	52.1	0.333	0.074	4.0466	
960 minute summer	22	5.000	23	-46.6	-0.166	-0.063	6.0099	
960 minute summer	23	Hydro-Brake®	24	6.5				424.4

Results for 30 year 960 minute winter. 1200 minute analysis at 15 minute timestep. Mass balance: 99.59%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
960 minute winter	1	495	1.221	0.071	7.9	0.4118	0.0000	OK
960 minute winter	2	480	0.991	0.041	7.9	0.0583	0.0000	OK
960 minute winter	3	915	0.953	0.253	2.6	0.7979	0.0000	OK
960 minute winter	4	915	0.953	0.278	4.8	0.7898	0.0000	OK
960 minute winter	5	915	0.951	0.376	4.8	0.6649	0.0000	OK
960 minute winter	6	915	0.951	0.401	5.7	0.8620	0.0000	OK
960 minute winter	7	915	0.951	0.426	14.8	1.0005	0.0000	OK
960 minute winter	8	915	0.952	0.202	3.6	0.6889	0.0000	OK
960 minute winter	9	915	0.951	0.351	5.6	0.8637	0.0000	OK
960 minute winter	10	915	0.950	0.500	20.0	0.8843	0.0000	OK
960 minute winter	11	915	0.950	0.550	22.8	1.8876	0.0000	OK
960 minute winter	12	855	0.952	0.177	5.5	0.8222	0.0000	OK
960 minute winter	13	900	0.952	0.752	5.9	1.4696	0.0000	
960 minute winter	14	900	0.953	0.978	7.4	41.8607	0.0000	
960 minute winter	15	900	0.956	1.131	12.5	3.6289	0.0000	
960 minute winter	16	915	0.951	1.151	12.7	2.0332	0.0000	
960 minute winter	17	885	0.948	1.198	31.0	3.0074	0.0000	
960 minute winter	18	870	0.949	1.249	30.2	2.2064	0.0000	
960 minute winter	19	915	0.948	1.298	31.6	3.0855	0.0000	
960 minute winter	20	915	0.948	1.398	33.5	3.6980	0.0000	
960 minute winter	21	915	0.948	1.448	38.5	5.1903	0.0000	
960 minute winter	22	930	0.947	1.347	32.6	468.1899	0.0000	
960 minute winter	23	915	0.947	1.597	39.3	2.8222	0.0000	
960 minute winter	24	15	-0.750	0.000	6.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
960 minute winter	1	1.000	2	7.9	0.709	0.049	0.9098	
960 minute winter	2	1.001	7	7.9	1.138	0.016	1.0541	
960 minute winter	3	2.000	4	2.6	0.293	0.012	1.2870	
960 minute winter	4	2.001	5	4.8	0.418	0.021	5.9735	
960 minute winter	5	2.002	6	4.8	0.343	0.022	2.1123	
960 minute winter	6	2.003	7	5.6	0.299	0.026	2.2666	
960 minute winter	7	1.002	10	14.5	0.566	0.057	5.3196	
960 minute winter	8	3.000	9	3.6	0.403	0.021	5.4506	
960 minute winter	9	3.001	10	5.6	0.567	0.028	2.7012	
960 minute winter	10	1.003	11	19.4	0.855	0.076	3.7885	
960 minute winter	11	1.004	17	21.8	0.831	0.040	9.6452	
960 minute winter	12	4.000	13	5.5	0.487	0.013	11.0679	
960 minute winter	13	4.001	14	5.3	0.423	0.018	9.1090	
960 minute winter	14	4.002	15	12.5	0.301	0.019	4.7457	
960 minute winter	15	4.003	16	12.7	0.323	0.041	3.4691	
960 minute winter	16	4.004	17	12.9	0.183	0.033	4.3694	
960 minute winter	17	1.005	18	30.2	0.464	0.099	7.0543	
960 minute winter	18	1.006	19	30.0	0.481	0.080	4.6916	
960 minute winter	19	1.007	20	31.5	0.446	0.092	11.1691	
960 minute winter	20	1.008	21	33.4	0.504	0.109	6.9819	
960 minute winter	21	1.009	23	39.3	0.259	0.056	4.0466	
960 minute winter	22	5.000	23	-32.6	-0.116	-0.044	6.0099	
960 minute winter	23	Hydro-Brake®	24	6.5				430.8

Results for 30 year 1440 minute summer. 1680 minute analysis at 30 minute timestep. Mass balance: 99.55%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
1440 minute summer	1	750	1.220	0.070	7.6	0.4036	0.0000	OK
1440 minute summer	2	750	0.990	0.040	7.6	0.0573	0.0000	OK
1440 minute summer	3	1020	0.823	0.123	2.5	0.3878	0.0000	OK
1440 minute summer	4	1020	0.823	0.148	4.6	0.4199	0.0000	OK
1440 minute summer	5	1020	0.820	0.245	4.6	0.4327	0.0000	OK
1440 minute summer	6	1020	0.818	0.268	5.4	0.5762	0.0000	OK
1440 minute summer	7	1020	0.816	0.291	14.3	0.6848	0.0000	OK
1440 minute summer	8	1020	0.822	0.072	3.5	0.2465	0.0000	OK
1440 minute summer	9	1020	0.819	0.219	5.4	0.5384	0.0000	OK
1440 minute summer	10	1110	0.816	0.366	19.7	0.6469	0.0000	OK
1440 minute summer	11	1110	0.816	0.416	22.8	1.4274	0.0000	OK
1440 minute summer	12	1110	0.824	0.049	5.3	0.2286	0.0000	OK
1440 minute summer	13	1110	0.823	0.623	5.6	1.2166	0.0000	
1440 minute summer	14	1110	0.822	0.847	4.1	22.7921	0.0000	
1440 minute summer	15	1110	0.825	1.000	12.6	3.2092	0.0000	
1440 minute summer	16	1140	0.816	1.016	12.4	1.7947	0.0000	
1440 minute summer	17	1140	0.817	1.067	30.1	2.6786	0.0000	
1440 minute summer	18	1140	0.817	1.117	29.2	1.9733	0.0000	
1440 minute summer	19	1050	0.816	1.166	31.3	2.7725	0.0000	
1440 minute summer	20	1140	0.816	1.266	33.2	3.3477	0.0000	
1440 minute summer	21	1080	0.815	1.315	37.6	4.7156	0.0000	
1440 minute summer	22	1050	0.815	1.215	31.7	367.4564	0.0000	
1440 minute summer	23	1050	0.815	1.465	38.1	2.5885	0.0000	
1440 minute summer	24	30	-0.750	0.000	6.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
1440 minute summer	1	1.000	2	7.6	0.694	0.047	0.8864	
1440 minute summer	2	1.001	7	7.6	1.127	0.016	0.6068	
1440 minute summer	3	2.000	4	2.5	0.287	0.011	0.5183	
1440 minute summer	4	2.001	5	4.6	0.414	0.020	3.1484	
1440 minute summer	5	2.002	6	4.6	0.342	0.021	1.2915	
1440 minute summer	6	2.003	7	5.4	0.294	0.025	1.4536	
1440 minute summer	7	1.002	10	14.3	0.574	0.056	3.7736	
1440 minute summer	8	3.000	9	3.5	0.392	0.021	2.5110	
1440 minute summer	9	3.001	10	5.4	0.567	0.027	1.7344	
1440 minute summer	10	1.003	11	19.4	0.866	0.076	3.0453	
1440 minute summer	11	1.004	17	22.2	0.875	0.040	8.9201	
1440 minute summer	12	4.000	13	5.3	0.493	0.013	8.9474	
1440 minute summer	13	4.001	14	4.1	0.412	0.014	9.1090	
1440 minute summer	14	4.002	15	12.6	0.311	0.019	4.7457	
1440 minute summer	15	4.003	16	12.4	0.333	0.040	3.4691	
1440 minute summer	16	4.004	17	12.9	0.191	0.033	4.3694	
1440 minute summer	17	1.005	18	29.2	0.468	0.096	7.0543	
1440 minute summer	18	1.006	19	29.7	0.495	0.079	4.6916	
1440 minute summer	19	1.007	20	31.2	0.429	0.091	11.1691	
1440 minute summer	20	1.008	21	32.7	0.507	0.106	6.9819	
1440 minute summer	21	1.009	23	38.1	0.239	0.054	4.0466	
1440 minute summer	22	5.000	23	-31.7	-0.113	-0.043	6.0099	
1440 minute summer	23	Hydro-Brake®	24	6.5				560.9

Results for 30 year 1440 minute winter. 1680 minute analysis at 30 minute timestep. Mass balance: 99.55%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
1440 minute winter	1	750	1.211	0.061	5.7	0.3528	0.0000	OK
1440 minute winter	2	750	0.985	0.035	5.7	0.0499	0.0000	OK
1440 minute winter	3	1200	0.907	0.207	1.9	0.6529	0.0000	OK
1440 minute winter	4	1200	0.907	0.232	3.5	0.6596	0.0000	OK
1440 minute winter	5	1200	0.908	0.333	3.5	0.5883	0.0000	OK
1440 minute winter	6	1200	0.908	0.358	4.1	0.7694	0.0000	OK
1440 minute winter	7	1200	0.908	0.383	10.8	0.8996	0.0000	OK
1440 minute winter	8	1200	0.907	0.157	2.6	0.5369	0.0000	OK
1440 minute winter	9	1200	0.909	0.309	4.0	0.7601	0.0000	OK
1440 minute winter	10	1200	0.907	0.457	14.7	0.8084	0.0000	OK
1440 minute winter	11	1200	0.906	0.506	16.9	1.7365	0.0000	OK
1440 minute winter	12	1320	0.905	0.130	4.0	0.6066	0.0000	OK
1440 minute winter	13	1200	0.905	0.705	4.3	1.3770	0.0000	
1440 minute winter	14	1200	0.906	0.931	3.8	34.9661	0.0000	
1440 minute winter	15	1260	0.906	1.081	10.5	3.4688	0.0000	
1440 minute winter	16	1200	0.906	1.106	10.4	1.9551	0.0000	
1440 minute winter	17	1170	0.907	1.157	22.1	2.9037	0.0000	
1440 minute winter	18	1200	0.904	1.204	22.0	2.1280	0.0000	
1440 minute winter	19	1170	0.905	1.255	23.3	2.9827	0.0000	
1440 minute winter	20	1140	0.904	1.354	24.6	3.5820	0.0000	
1440 minute winter	21	1140	0.905	1.405	28.4	5.0365	0.0000	
1440 minute winter	22	1140	0.903	1.303	22.2	433.3370	0.0000	
1440 minute winter	23	1110	0.903	1.553	28.0	2.7434	0.0000	
1440 minute winter	24	30	-0.750	0.000	6.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
1440 minute winter	1	1.000	2	5.7	0.637	0.035	0.7274	
1440 minute winter	2	1.001	7	5.7	1.031	0.012	0.9183	
1440 minute winter	3	2.000	4	1.9	0.262	0.009	1.0058	
1440 minute winter	4	2.001	5	3.5	0.389	0.015	5.0144	
1440 minute winter	5	2.002	6	3.6	0.329	0.017	1.8569	
1440 minute winter	6	2.003	7	4.6	0.277	0.021	2.0236	
1440 minute winter	7	1.002	10	10.8	0.517	0.042	4.9003	
1440 minute winter	8	3.000	9	2.6	0.367	0.015	4.4715	
1440 minute winter	9	3.001	10	4.0	0.518	0.020	2.4362	
1440 minute winter	10	1.003	11	14.4	0.777	0.056	3.6547	
1440 minute winter	11	1.004	17	16.2	0.864	0.029	9.5897	
1440 minute winter	12	4.000	13	4.0	0.447	0.010	10.1962	
1440 minute winter	13	4.001	14	3.8	0.419	0.013	9.1090	
1440 minute winter	14	4.002	15	10.5	0.310	0.016	4.7457	
1440 minute winter	15	4.003	16	10.4	0.333	0.034	3.4691	
1440 minute winter	16	4.004	17	10.9	0.188	0.028	4.3694	
1440 minute winter	17	1.005	18	22.0	0.491	0.072	7.0543	
1440 minute winter	18	1.006	19	22.1	0.494	0.059	4.6916	
1440 minute winter	19	1.007	20	23.1	0.428	0.067	11.1691	
1440 minute winter	20	1.008	21	24.7	0.507	0.080	6.9819	
1440 minute winter	21	1.009	23	28.0	0.257	0.040	4.0466	
1440 minute winter	22	5.000	23	-22.2	-0.079	-0.030	6.0099	
1440 minute winter	23	Hydro-Brake®	24	6.5				582.3

Results for 100 year +40% CC 15 minute summer. 255 minute analysis at 1 minute timestep. Mass balance: 97.61%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	1	12	2.409	1.259	215.1	7.3101	0.0000	
15 minute summer	2	12	2.177	1.227	202.9	1.7563	0.0000	
15 minute summer	3	12	2.168	1.468	71.7	4.6257	0.0000	
15 minute summer	4	12	2.165	1.490	118.6	4.2304	0.0000	
15 minute summer	5	12	2.137	1.562	111.5	2.7608	0.0000	
15 minute summer	6	12	2.124	1.574	119.0	3.3851	0.0000	
15 minute summer	7	12	2.111	1.586	300.1	3.7274	0.0000	
15 minute summer	8	12	2.043	1.293	98.6	4.4182	0.0000	
15 minute summer	9	12	2.000	1.400	138.4	3.4469	0.0000	
15 minute summer	10	12	1.961	1.511	405.2	2.6702	0.0000	
15 minute summer	11	12	1.748	1.348	476.4	4.6266	0.0000	
15 minute summer	12	15	1.313	0.538	149.4	2.5034	0.0000	
15 minute summer	13	15	1.302	1.102	338.3	2.1528	0.0000	
15 minute summer	14	15	1.302	1.327	405.4	92.7619	0.0000	
15 minute summer	15	15	1.291	1.466	263.8	4.7030	0.0000	
15 minute summer	16	15	1.278	1.478	193.6	2.6115	0.0000	
15 minute summer	17	15	1.265	1.515	511.0	3.8036	0.0000	
15 minute summer	18	15	1.156	1.456	364.2	2.5733	0.0000	
15 minute summer	19	15	1.069	1.419	376.9	3.3741	0.0000	
15 minute summer	20	15	0.911	1.361	398.6	3.6004	0.0000	
15 minute summer	21	29	0.814	1.314	504.0	4.7121	0.0000	
15 minute summer	22	30	0.819	1.219	497.0	370.5301	0.0000	
15 minute summer	23	30	0.816	1.466	503.6	2.5897	0.0000	
15 minute summer	24	1	-0.750	0.000	6.4	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	1	1.000	2	202.9	1.597	1.257	12.5589	
15 minute summer	2	1.001	7	177.3	1.597	0.366	2.4834	
15 minute summer	3	2.000	4	58.9	0.551	0.265	2.5371	
15 minute summer	4	2.001	5	111.5	0.681	0.476	9.1613	
15 minute summer	5	2.002	6	96.7	0.448	0.446	2.6639	
15 minute summer	6	2.003	7	116.7	0.540	0.541	2.6862	
15 minute summer	7	1.002	10	294.9	1.365	1.151	5.7467	
15 minute summer	8	3.000	9	87.2	0.827	0.515	8.5796	
15 minute summer	9	3.001	10	120.3	0.835	0.591	2.9745	
15 minute summer	10	1.003	11	401.6	1.859	1.566	3.8210	
15 minute summer	11	1.004	17	470.0	2.176	0.854	9.6452	
15 minute summer	12	4.000	13	165.1	1.419	0.400	17.0934	
15 minute summer	13	4.001	14	-188.2	1.005	-0.653	9.1090	
15 minute summer	14	4.002	15	-255.6	-0.907	-0.394	4.7457	
15 minute summer	15	4.003	16	-189.8	-0.674	-0.616	3.4691	
15 minute summer	16	4.004	17	-193.6	-0.688	-0.497	4.3694	
15 minute summer	17	1.005	18	364.2	1.293	1.192	7.0543	
15 minute summer	18	1.006	19	363.3	1.290	0.967	4.6916	
15 minute summer	19	1.007	20	377.0	1.338	1.096	11.1691	
15 minute summer	20	1.008	21	399.5	1.418	1.300	6.9819	
15 minute summer	21	1.009	23	503.6	1.788	0.716	4.0466	
15 minute summer	22	5.000	23	-497.0	-1.765	-0.667	6.0099	
15 minute summer	23	Hydro-Brake®	24	6.4				92.4

Results for 100 year +40% CC 15 minute winter. 255 minute analysis at 1 minute timestep. Mass balance: 95.27%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	1	12	2.656	1.506	226.0	8.7448	0.0000	
15 minute winter	2	12	2.409	1.459	191.2	2.0882	0.0000	
15 minute winter	3	12	2.384	1.684	75.3	5.3041	0.0000	
15 minute winter	4	12	2.381	1.706	110.3	4.8454	0.0000	
15 minute winter	5	12	2.362	1.787	98.6	3.1574	0.0000	
15 minute winter	6	12	2.350	1.800	115.5	3.8705	0.0000	
15 minute winter	7	12	2.337	1.812	315.4	4.2590	0.0000	
15 minute winter	8	12	2.239	1.489	103.6	5.0900	0.0000	
15 minute winter	9	12	2.209	1.609	136.9	3.9624	0.0000	
15 minute winter	10	12	2.170	1.720	431.1	3.0401	0.0000	
15 minute winter	11	12	1.931	1.531	507.6	5.2538	0.0000	
15 minute winter	12	16	1.485	0.710	156.9	3.3049	0.0000	
15 minute winter	13	16	1.466	1.266	196.7	2.4720	0.0000	
15 minute winter	14	15	1.471	1.496	366.5	117.3270	0.0000	
15 minute winter	15	15	1.459	1.634	288.9	5.2430	0.0000	
15 minute winter	16	15	1.449	1.649	217.4	2.9145	0.0000	
15 minute winter	17	15	1.437	1.687	546.3	4.2349	0.0000	
15 minute winter	18	15	1.311	1.611	386.3	2.8466	0.0000	
15 minute winter	19	15	1.211	1.561	398.4	3.7101	0.0000	
15 minute winter	20	15	1.027	1.477	418.8	3.9078	0.0000	
15 minute winter	21	16	0.890	1.390	520.0	4.9819	0.0000	
15 minute winter	22	31	0.891	1.291	509.8	424.5678	0.0000	
15 minute winter	23	31	0.889	1.539	517.7	2.7189	0.0000	
15 minute winter	24	1	-0.750	0.000	6.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	1	1.000	2	191.2	1.611	1.185	12.5589	
15 minute winter	2	1.001	7	171.7	1.617	0.355	2.4834	
15 minute winter	3	2.000	4	53.9	0.545	0.243	2.5371	
15 minute winter	4	2.001	5	98.6	0.707	0.421	9.1613	
15 minute winter	5	2.002	6	100.7	0.466	0.465	2.6639	
15 minute winter	6	2.003	7	120.7	0.559	0.559	2.6862	
15 minute winter	7	1.002	10	312.0	1.444	1.218	5.7467	
15 minute winter	8	3.000	9	80.4	0.816	0.475	8.5796	
15 minute winter	9	3.001	10	119.2	0.859	0.585	2.9745	
15 minute winter	10	1.003	11	429.0	1.986	1.673	3.8210	
15 minute winter	11	1.004	17	503.1	2.329	0.914	9.6452	
15 minute winter	12	4.000	13	186.6	1.432	0.452	17.0958	
15 minute winter	13	4.001	14	149.8	0.996	0.520	9.1090	
15 minute winter	14	4.002	15	-280.0	-0.994	-0.431	4.7457	
15 minute winter	15	4.003	16	-212.1	-0.753	-0.688	3.4691	
15 minute winter	16	4.004	17	-217.4	-0.772	-0.558	4.3694	
15 minute winter	17	1.005	18	386.3	1.372	1.264	7.0543	
15 minute winter	18	1.006	19	385.7	1.369	1.027	4.6916	
15 minute winter	19	1.007	20	398.6	1.415	1.159	11.1691	
15 minute winter	20	1.008	21	418.4	1.486	1.362	6.9819	
15 minute winter	21	1.009	23	517.7	1.838	0.736	4.0466	
15 minute winter	22	5.000	23	-509.8	-1.810	-0.684	6.0099	
15 minute winter	23	Hydro-Brake®	24	6.5				94.5

Results for 100 year +40% CC 30 minute summer. 270 minute analysis at 1 minute timestep. Mass balance: 99.48%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute summer	1	20	2.336	1.186	193.7	6.8849	0.0000	
30 minute summer	2	20	2.152	1.202	178.8	1.7202	0.0000	
30 minute summer	3	20	2.143	1.443	64.5	4.5464	0.0000	
30 minute summer	4	20	2.141	1.466	112.8	4.1630	0.0000	
30 minute summer	5	20	2.120	1.545	106.5	2.7292	0.0000	
30 minute summer	6	20	2.110	1.560	106.6	3.3534	0.0000	
30 minute summer	7	20	2.096	1.571	284.4	3.6926	0.0000	
30 minute summer	8	20	2.018	1.268	88.8	4.3338	0.0000	
30 minute summer	9	20	1.990	1.390	124.9	3.4234	0.0000	
30 minute summer	10	20	1.961	1.511	387.0	2.6706	0.0000	
30 minute summer	11	20	1.768	1.368	453.3	4.6925	0.0000	
30 minute summer	12	22	1.454	0.679	134.5	3.1623	0.0000	
30 minute summer	13	22	1.417	1.217	139.1	2.3760	0.0000	
30 minute summer	14	23	1.406	1.431	334.9	107.7980	0.0000	
30 minute summer	15	23	1.396	1.571	243.6	5.0415	0.0000	
30 minute summer	16	23	1.385	1.585	182.6	2.8012	0.0000	
30 minute summer	17	23	1.375	1.625	487.6	4.0789	0.0000	
30 minute summer	18	23	1.266	1.566	360.2	2.7664	0.0000	
30 minute summer	19	23	1.180	1.530	374.8	3.6364	0.0000	
30 minute summer	20	23	1.021	1.471	394.7	3.8907	0.0000	
30 minute summer	21	39	0.953	1.453	488.8	5.2075	0.0000	
30 minute summer	22	40	0.958	1.358	478.2	476.4449	0.0000	
30 minute summer	23	40	0.955	1.605	485.4	2.8363	0.0000	
30 minute summer	24	1	-0.750	0.000	6.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
30 minute summer	1	1.000	2	178.8	1.596	1.108	12.5589	
30 minute summer	2	1.001	7	158.4	1.505	0.327	2.4834	
30 minute summer	3	2.000	4	58.9	0.518	0.265	2.5371	
30 minute summer	4	2.001	5	106.5	0.624	0.455	9.1613	
30 minute summer	5	2.002	6	89.7	0.415	0.414	2.6639	
30 minute summer	6	2.003	7	109.4	0.506	0.507	2.6862	
30 minute summer	7	1.002	10	283.8	1.314	1.108	5.7467	
30 minute summer	8	3.000	9	76.5	0.797	0.452	8.5796	
30 minute summer	9	3.001	10	109.4	0.807	0.537	2.9745	
30 minute summer	10	1.003	11	387.6	1.795	1.511	3.8210	
30 minute summer	11	1.004	17	450.3	2.085	0.818	9.6452	
30 minute summer	12	4.000	13	130.5	1.065	0.316	17.0958	
30 minute summer	13	4.001	14	131.1	0.826	0.455	9.1090	
30 minute summer	14	4.002	15	-237.9	-0.845	-0.366	4.7457	
30 minute summer	15	4.003	16	-180.0	-0.639	-0.584	3.4691	
30 minute summer	16	4.004	17	-182.6	-0.648	-0.469	4.3694	
30 minute summer	17	1.005	18	360.2	1.279	1.178	7.0543	
30 minute summer	18	1.006	19	360.9	1.281	0.961	4.6916	
30 minute summer	19	1.007	20	374.3	1.329	1.088	11.1691	
30 minute summer	20	1.008	21	393.9	1.399	1.282	6.9819	
30 minute summer	21	1.009	23	485.4	1.724	0.690	4.0466	
30 minute summer	22	5.000	23	-478.2	-1.698	-0.641	6.0099	
30 minute summer	23	Hydro-Brake®	24	6.5				101.7

Results for 100 year +40% CC 30 minute winter. 270 minute analysis at 1 minute timestep. Mass balance: 99.95%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute winter	1	20	2.314	1.164	175.4	6.7605	0.0000	
30 minute winter	2	20	2.131	1.181	156.8	1.6905	0.0000	
30 minute winter	3	20	2.114	1.414	58.5	4.4538	0.0000	
30 minute winter	4	20	2.112	1.437	92.6	4.0800	0.0000	
30 minute winter	5	20	2.097	1.522	86.8	2.6895	0.0000	
30 minute winter	6	20	2.087	1.537	103.0	3.3052	0.0000	
30 minute winter	7	20	2.079	1.554	272.6	3.6509	0.0000	
30 minute winter	8	20	2.006	1.256	80.4	4.2927	0.0000	
30 minute winter	9	21	1.984	1.384	116.7	3.4083	0.0000	
30 minute winter	10	21	1.962	1.512	373.3	2.6710	0.0000	
30 minute winter	11	21	1.802	1.402	438.0	4.8098	0.0000	
30 minute winter	12	23	1.719	0.944	121.8	4.3973	0.0000	
30 minute winter	13	23	1.665	1.465	118.4	2.8606	0.0000	
30 minute winter	14	23	1.618	1.643	305.1	118.2468	0.0000	
30 minute winter	15	23	1.606	1.781	218.8	5.7164	0.0000	
30 minute winter	16	23	1.594	1.794	162.3	3.1701	0.0000	
30 minute winter	17	23	1.587	1.837	471.6	4.6101	0.0000	
30 minute winter	18	23	1.462	1.762	386.2	3.1132	0.0000	
30 minute winter	19	23	1.364	1.714	404.6	4.0732	0.0000	
30 minute winter	20	23	1.181	1.631	428.7	4.3146	0.0000	
30 minute winter	21	23	1.028	1.528	485.2	5.4768	0.0000	
30 minute winter	22	41	1.027	1.427	481.9	533.0709	0.0000	
30 minute winter	23	41	1.025	1.675	488.9	2.9590	0.0000	
30 minute winter	24	1	-0.750	0.000	6.6	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
30 minute winter	1	1.000	2	156.8	1.625	0.971	12.5589	
30 minute winter	2	1.001	7	147.6	1.544	0.305	2.4834	
30 minute winter	3	2.000	4	47.6	0.504	0.214	2.5371	
30 minute winter	4	2.001	5	86.8	0.637	0.371	9.1613	
30 minute winter	5	2.002	6	86.5	0.401	0.399	2.6639	
30 minute winter	6	2.003	7	100.7	0.466	0.466	2.6862	
30 minute winter	7	1.002	10	272.0	1.259	1.062	5.7467	
30 minute winter	8	3.000	9	72.9	0.775	0.431	8.5796	
30 minute winter	9	3.001	10	104.8	0.794	0.515	2.9745	
30 minute winter	10	1.003	11	371.6	1.720	1.449	3.8210	
30 minute winter	11	1.004	17	434.4	2.011	0.789	9.6452	
30 minute winter	12	4.000	13	111.1	1.104	0.269	17.0958	
30 minute winter	13	4.001	14	118.9	0.858	0.413	9.1090	
30 minute winter	14	4.002	15	-213.5	-0.758	-0.329	4.7457	
30 minute winter	15	4.003	16	-158.9	0.564	-0.516	3.4691	
30 minute winter	16	4.004	17	-162.3	-0.576	-0.417	4.3694	
30 minute winter	17	1.005	18	386.2	1.371	1.263	7.0543	
30 minute winter	18	1.006	19	387.2	1.375	1.031	4.6916	
30 minute winter	19	1.007	20	407.1	1.445	1.184	11.1691	
30 minute winter	20	1.008	21	431.8	1.533	1.405	6.9819	
30 minute winter	21	1.009	23	488.9	1.736	0.695	4.0466	
30 minute winter	22	5.000	23	-481.9	-1.711	-0.646	6.0099	
30 minute winter	23	Hydro-Brake®	24	6.6				103.6

Results for 100 year +40% CC 60 minute summer. 300 minute analysis at 1 minute timestep. Mass balance: 99.55%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	1	35	1.850	0.700	144.4	4.0614	0.0000	
60 minute summer	2	35	1.736	0.786	140.3	1.1250	0.0000	
60 minute summer	3	35	1.734	1.034	48.1	3.2581	0.0000	
60 minute summer	4	35	1.732	1.057	85.9	3.0029	0.0000	
60 minute summer	5	35	1.716	1.141	83.6	2.0168	0.0000	
60 minute summer	6	35	1.711	1.161	93.1	2.4955	0.0000	
60 minute summer	7	35	1.701	1.176	226.8	2.7634	0.0000	
60 minute summer	8	36	1.651	0.901	66.2	3.0802	0.0000	
60 minute summer	9	36	1.639	1.039	88.0	2.5573	0.0000	
60 minute summer	10	36	1.623	1.173	304.6	2.0735	0.0000	
60 minute summer	11	36	1.516	1.116	357.8	3.8293	0.0000	
60 minute summer	12	39	1.357	0.582	100.3	2.7091	0.0000	
60 minute summer	13	39	1.350	1.150	103.7	2.2460	0.0000	
60 minute summer	14	39	1.345	1.370	208.0	98.9886	0.0000	
60 minute summer	15	39	1.340	1.515	160.2	4.8625	0.0000	
60 minute summer	16	39	1.335	1.535	114.5	2.7128	0.0000	
60 minute summer	17	39	1.330	1.580	385.8	3.9653	0.0000	
60 minute summer	18	39	1.248	1.548	312.7	2.7348	0.0000	
60 minute summer	19	39	1.184	1.534	326.6	3.6463	0.0000	
60 minute summer	20	64	1.087	1.537	346.7	4.0661	0.0000	
60 minute summer	21	65	1.088	1.588	409.3	5.6921	0.0000	
60 minute summer	22	66	1.091	1.491	398.8	586.6770	0.0000	
60 minute summer	23	67	1.089	1.739	407.1	3.0733	0.0000	
60 minute summer	24	1	-0.750	0.000	6.7	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	1	1.000	2	140.3	1.612	0.869	12.5589	
60 minute summer	2	1.001	7	125.9	1.445	0.260	2.4834	
60 minute summer	3	2.000	4	45.8	0.492	0.206	2.5371	
60 minute summer	4	2.001	5	83.6	0.582	0.357	9.1613	
60 minute summer	5	2.002	6	77.1	0.370	0.355	2.6639	
60 minute summer	6	2.003	7	85.9	0.397	0.398	2.6862	
60 minute summer	7	1.002	10	224.3	1.038	0.876	5.7467	
60 minute summer	8	3.000	9	51.9	0.733	0.307	8.5796	
60 minute summer	9	3.001	10	83.8	0.772	0.412	2.9745	
60 minute summer	10	1.003	11	303.3	1.520	1.183	3.8210	
60 minute summer	11	1.004	17	355.8	1.647	0.646	9.6452	
60 minute summer	12	4.000	13	97.3	0.871	0.236	17.0958	
60 minute summer	13	4.001	14	91.5	0.698	0.318	9.1090	
60 minute summer	14	4.002	15	-157.4	-0.559	-0.242	4.7457	
60 minute summer	15	4.003	16	-110.8	0.511	-0.359	3.4691	
60 minute summer	16	4.004	17	-114.5	-0.406	-0.294	4.3694	
60 minute summer	17	1.005	18	312.7	1.110	1.023	7.0543	
60 minute summer	18	1.006	19	310.7	1.103	0.827	4.6916	
60 minute summer	19	1.007	20	327.0	1.161	0.951	11.1691	
60 minute summer	20	1.008	21	345.3	1.226	1.124	6.9819	
60 minute summer	21	1.009	23	407.1	1.446	0.579	4.0466	
60 minute summer	22	5.000	23	-398.8	-1.416	-0.535	6.0099	
60 minute summer	23	Hydro-Brake®	24	6.7				116.4

Results for 100 year +40% CC 60 minute winter. 300 minute analysis at 1 minute timestep. Mass balance: 99.48%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute winter	1	37	1.720	0.570	116.9	3.3072	0.0000	
60 minute winter	2	38	1.640	0.690	116.0	0.9875	0.0000	
60 minute winter	3	38	1.635	0.935	39.0	2.9450	0.0000	
60 minute winter	4	38	1.634	0.959	70.4	2.7234	0.0000	
60 minute winter	5	38	1.629	1.054	70.0	1.8618	0.0000	
60 minute winter	6	38	1.624	1.074	80.5	2.3101	0.0000	
60 minute winter	7	38	1.621	1.096	188.3	2.5767	0.0000	
60 minute winter	8	38	1.593	0.843	53.6	2.8815	0.0000	
60 minute winter	9	38	1.584	0.984	81.8	2.4217	0.0000	
60 minute winter	10	39	1.573	1.123	256.4	1.9839	0.0000	
60 minute winter	11	39	1.511	1.111	301.7	3.8132	0.0000	
60 minute winter	12	42	1.409	0.634	81.2	2.9522	0.0000	
60 minute winter	13	42	1.403	1.203	80.0	2.3491	0.0000	
60 minute winter	14	42	1.398	1.423	160.8	106.7571	0.0000	
60 minute winter	15	42	1.396	1.571	111.5	5.0414	0.0000	
60 minute winter	16	42	1.389	1.589	94.6	2.8085	0.0000	
60 minute winter	17	41	1.387	1.637	325.4	4.1097	0.0000	
60 minute winter	18	42	1.316	1.616	296.9	2.8561	0.0000	
60 minute winter	19	42	1.262	1.612	310.5	3.8311	0.0000	
60 minute winter	20	71	1.177	1.627	332.2	4.3035	0.0000	
60 minute winter	21	66	1.178	1.678	386.5	6.0164	0.0000	
60 minute winter	22	65	1.181	1.581	377.5	665.4964	0.0000	
60 minute winter	23	66	1.179	1.829	385.7	3.2314	0.0000	
60 minute winter	24	1	-0.750	0.000	6.9	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute winter	1	1.000	2	116.0	1.543	0.718	12.5589	
60 minute winter	2	1.001	7	105.8	1.465	0.219	2.4834	
60 minute winter	3	2.000	4	37.9	0.480	0.171	2.5371	
60 minute winter	4	2.001	5	70.0	0.569	0.299	9.1613	
60 minute winter	5	2.002	6	67.8	0.370	0.313	2.6639	
60 minute winter	6	2.003	7	79.2	0.367	0.367	2.6862	
60 minute winter	7	1.002	10	186.3	0.964	0.727	5.7467	
60 minute winter	8	3.000	9	53.1	0.709	0.314	8.5796	
60 minute winter	9	3.001	10	80.0	0.756	0.393	2.9745	
60 minute winter	10	1.003	11	255.2	1.549	0.995	3.8210	
60 minute winter	11	1.004	17	298.4	1.523	0.542	9.6452	
60 minute winter	12	4.000	13	75.1	0.887	0.182	17.0958	
60 minute winter	13	4.001	14	73.0	0.737	0.253	9.1090	
60 minute winter	14	4.002	15	-109.3	0.482	-0.168	4.7457	
60 minute winter	15	4.003	16	94.6	0.507	0.307	3.4691	
60 minute winter	16	4.004	17	93.7	0.333	0.241	4.3694	
60 minute winter	17	1.005	18	296.9	1.054	0.971	7.0543	
60 minute winter	18	1.006	19	294.8	1.047	0.785	4.6916	
60 minute winter	19	1.007	20	311.3	1.105	0.905	11.1691	
60 minute winter	20	1.008	21	330.6	1.174	1.076	6.9819	
60 minute winter	21	1.009	23	385.7	1.370	0.548	4.0466	
60 minute winter	22	5.000	23	-377.5	-1.340	-0.506	6.0099	
60 minute winter	23	Hydro-Brake®	24	6.9				118.6

Results for 100 year +40% CC 120 minute summer. 360 minute analysis at 2 minute timestep. Mass balance: 99.49%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
120 minute summer	1	64	1.393	0.243	92.9	1.4108	0.0000	OK
120 minute summer	2	70	1.349	0.399	93.4	0.5704	0.0000	OK
120 minute summer	3	68	1.349	0.649	31.0	2.0446	0.0000	
120 minute summer	4	68	1.348	0.673	56.2	1.9117	0.0000	
120 minute summer	5	70	1.342	0.767	53.7	1.3555	0.0000	
120 minute summer	6	70	1.341	0.791	62.2	1.7008	0.0000	
120 minute summer	7	70	1.339	0.814	146.4	1.9138	0.0000	
120 minute summer	8	70	1.324	0.574	42.6	1.9616	0.0000	
120 minute summer	9	70	1.320	0.720	59.9	1.7733	0.0000	
120 minute summer	10	70	1.315	0.865	201.0	1.5293	0.0000	
120 minute summer	11	72	1.281	0.881	237.7	3.0236	0.0000	
120 minute summer	12	74	1.224	0.449	64.5	2.0927	0.0000	OK
120 minute summer	13	132	1.224	1.024	63.2	2.0002	0.0000	
120 minute summer	14	132	1.224	1.249	107.1	81.3051	0.0000	
120 minute summer	15	132	1.225	1.400	69.1	4.4919	0.0000	
120 minute summer	16	134	1.222	1.422	59.8	2.5123	0.0000	
120 minute summer	17	132	1.224	1.474	256.4	3.6994	0.0000	
120 minute summer	18	132	1.222	1.522	235.3	2.6886	0.0000	
120 minute summer	19	132	1.222	1.572	248.0	3.7368	0.0000	
120 minute summer	20	132	1.220	1.670	263.6	4.4164	0.0000	
120 minute summer	21	126	1.220	1.720	309.3	6.1673	0.0000	
120 minute summer	22	126	1.222	1.622	301.0	703.0371	0.0000	
120 minute summer	23	128	1.222	1.872	308.0	3.3076	0.0000	
120 minute summer	24	2	-0.750	0.000	7.0	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
120 minute summer	1	1.000	2	93.4	1.474	0.579	9.0865	
120 minute summer	2	1.001	7	89.6	1.451	0.185	2.4054	
120 minute summer	3	2.000	4	30.4	0.466	0.137	2.5371	
120 minute summer	4	2.001	5	53.7	0.552	0.229	9.1613	
120 minute summer	5	2.002	6	51.9	0.357	0.239	2.6639	
120 minute summer	6	2.003	7	59.4	0.350	0.275	2.6862	
120 minute summer	7	1.002	10	144.8	0.880	0.565	5.7467	
120 minute summer	8	3.000	9	36.7	0.661	0.217	8.5796	
120 minute summer	9	3.001	10	57.8	0.741	0.284	2.9745	
120 minute summer	10	1.003	11	200.0	1.385	0.780	3.8210	
120 minute summer	11	1.004	17	235.7	1.356	0.428	9.6452	
120 minute summer	12	4.000	13	59.1	0.759	0.143	16.3356	
120 minute summer	13	4.001	14	59.7	0.605	0.207	9.1090	
120 minute summer	14	4.002	15	-67.0	0.436	-0.103	4.7457	
120 minute summer	15	4.003	16	59.8	0.471	0.194	3.4691	
120 minute summer	16	4.004	17	60.6	0.225	0.156	4.3694	
120 minute summer	17	1.005	18	235.3	0.836	0.770	7.0543	
120 minute summer	18	1.006	19	234.9	0.834	0.625	4.6916	
120 minute summer	19	1.007	20	247.3	0.878	0.719	11.1691	
120 minute summer	20	1.008	21	262.8	0.933	0.855	6.9819	
120 minute summer	21	1.009	23	308.0	1.094	0.438	4.0466	
120 minute summer	22	5.000	23	-301.0	-1.069	-0.404	6.0099	
120 minute summer	23	Hydro-Brake®	24	7.0				142.2

Results for 100 year +40% CC 120 minute winter. 360 minute analysis at 2 minute timestep. Mass balance: 99.46%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
120 minute winter	1	76	1.369	0.219	71.7	1.2728	0.0000	OK
120 minute winter	2	76	1.351	0.401	71.9	0.5738	0.0000	OK
120 minute winter	3	76	1.350	0.650	23.9	2.0462	0.0000	
120 minute winter	4	76	1.349	0.674	39.9	1.9152	0.0000	
120 minute winter	5	76	1.348	0.773	38.7	1.3655	0.0000	
120 minute winter	6	76	1.347	0.797	45.6	1.7135	0.0000	
120 minute winter	7	76	1.346	0.821	117.5	1.9288	0.0000	
120 minute winter	8	78	1.338	0.588	32.8	2.0102	0.0000	
120 minute winter	9	78	1.336	0.736	46.4	1.8117	0.0000	
120 minute winter	10	78	1.333	0.883	161.2	1.5605	0.0000	
120 minute winter	11	128	1.325	0.925	190.2	3.1733	0.0000	
120 minute winter	12	130	1.323	0.548	49.8	2.5520	0.0000	
120 minute winter	13	130	1.323	1.123	49.0	2.1928	0.0000	
120 minute winter	14	130	1.323	1.348	76.0	95.7244	0.0000	
120 minute winter	15	130	1.322	1.497	40.6	4.8038	0.0000	
120 minute winter	16	120	1.324	1.524	40.6	2.6935	0.0000	
120 minute winter	17	128	1.325	1.575	205.5	3.9525	0.0000	
120 minute winter	18	128	1.324	1.624	204.9	2.8697	0.0000	
120 minute winter	19	126	1.324	1.674	216.8	3.9780	0.0000	
120 minute winter	20	126	1.323	1.773	231.7	4.6902	0.0000	
120 minute winter	21	126	1.324	1.824	271.4	6.5400	0.0000	
120 minute winter	22	124	1.325	1.725	263.0	799.9680	0.0000	
120 minute winter	23	124	1.324	1.974	270.1	3.4880	0.0000	
120 minute winter	24	2	-0.750	0.000	7.1	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
120 minute winter	1	1.000	2	71.9	1.379	0.446	8.9487	
120 minute winter	2	1.001	7	71.0	1.443	0.147	2.4107	
120 minute winter	3	2.000	4	21.2	0.457	0.095	2.5371	
120 minute winter	4	2.001	5	38.7	0.535	0.166	9.1613	
120 minute winter	5	2.002	6	38.2	0.356	0.176	2.6639	
120 minute winter	6	2.003	7	44.9	0.363	0.208	2.6862	
120 minute winter	7	1.002	10	116.2	0.869	0.454	5.7467	
120 minute winter	8	3.000	9	29.2	0.640	0.173	8.5796	
120 minute winter	9	3.001	10	45.0	0.734	0.221	2.9745	
120 minute winter	10	1.003	11	160.4	1.388	0.625	3.8210	
120 minute winter	11	1.004	17	188.6	1.411	0.343	9.6452	
120 minute winter	12	4.000	13	46.0	0.750	0.111	17.0958	
120 minute winter	13	4.001	14	44.2	0.636	0.154	9.1090	
120 minute winter	14	4.002	15	-38.3	0.441	-0.059	4.7457	
120 minute winter	15	4.003	16	40.6	0.452	0.132	3.4691	
120 minute winter	16	4.004	17	40.6	0.226	0.104	4.3694	
120 minute winter	17	1.005	18	204.9	0.792	0.670	7.0543	
120 minute winter	18	1.006	19	204.4	0.807	0.544	4.6916	
120 minute winter	19	1.007	20	216.1	0.767	0.628	11.1691	
120 minute winter	20	1.008	21	230.8	0.819	0.751	6.9819	
120 minute winter	21	1.009	23	270.1	0.959	0.384	4.0466	
120 minute winter	22	5.000	23	-263.0	-0.934	-0.353	6.0099	
120 minute winter	23	Hydro-Brake®	24	7.1				144.7

Results for 100 year +40% CC 180 minute summer. 420 minute analysis at 4 minute timestep. Mass balance: 99.44%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
180 minute summer	1	96	1.355	0.205	68.3	1.1913	0.0000	OK
180 minute summer	2	180	1.287	0.337	68.8	0.4829	0.0000	OK
180 minute summer	3	180	1.287	0.587	22.8	1.8490	0.0000	
180 minute summer	4	180	1.287	0.612	41.8	1.7388	0.0000	
180 minute summer	5	196	1.287	0.712	41.5	1.2578	0.0000	
180 minute summer	6	180	1.288	0.738	45.3	1.5864	0.0000	
180 minute summer	7	180	1.287	0.762	103.4	1.7903	0.0000	
180 minute summer	8	180	1.287	0.537	31.3	1.8350	0.0000	
180 minute summer	9	180	1.287	0.687	45.9	1.6902	0.0000	
180 minute summer	10	192	1.287	0.837	142.5	1.4790	0.0000	
180 minute summer	11	192	1.287	0.887	171.5	3.0427	0.0000	
180 minute summer	12	196	1.288	0.513	47.4	2.3910	0.0000	OK
180 minute summer	13	196	1.288	1.088	49.5	2.1242	0.0000	
180 minute summer	14	192	1.287	1.312	73.2	90.5681	0.0000	
180 minute summer	15	196	1.288	1.463	38.5	4.6956	0.0000	
180 minute summer	16	216	1.287	1.487	34.6	2.6283	0.0000	
180 minute summer	17	192	1.287	1.537	186.0	3.8585	0.0000	
180 minute summer	18	192	1.288	1.588	185.3	2.8067	0.0000	
180 minute summer	19	188	1.287	1.637	196.8	3.8905	0.0000	
180 minute summer	20	184	1.286	1.736	211.0	4.5918	0.0000	
180 minute summer	21	184	1.287	1.787	247.0	6.4051	0.0000	
180 minute summer	22	188	1.287	1.687	238.9	764.0523	0.0000	
180 minute summer	23	188	1.288	1.938	245.9	3.4248	0.0000	
180 minute summer	24	4	-0.750	0.000	7.1	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
180 minute summer	1	1.000	2	68.8	1.350	0.427	6.6537	
180 minute summer	2	1.001	7	65.9	1.439	0.136	2.2410	
180 minute summer	3	2.000	4	22.8	0.451	0.103	2.5371	
180 minute summer	4	2.001	5	41.5	0.524	0.177	9.1613	
180 minute summer	5	2.002	6	38.8	0.350	0.179	2.6639	
180 minute summer	6	2.003	7	45.0	0.339	0.209	2.6862	
180 minute summer	7	1.002	10	102.6	0.806	0.401	5.7467	
180 minute summer	8	3.000	9	28.8	0.617	0.170	8.5796	
180 minute summer	9	3.001	10	42.3	0.733	0.208	2.9745	
180 minute summer	10	1.003	11	142.2	1.273	0.554	3.8210	
180 minute summer	11	1.004	17	168.7	1.233	0.306	9.6452	
180 minute summer	12	4.000	13	46.5	0.690	0.113	17.0454	
180 minute summer	13	4.001	14	43.2	0.543	0.150	9.1090	
180 minute summer	14	4.002	15	-36.9	0.413	-0.057	4.7457	
180 minute summer	15	4.003	16	34.6	0.394	0.112	3.4691	
180 minute summer	16	4.004	17	34.9	0.221	0.090	4.3694	
180 minute summer	17	1.005	18	185.3	0.688	0.606	7.0543	
180 minute summer	18	1.006	19	184.8	0.729	0.492	4.6916	
180 minute summer	19	1.007	20	196.1	0.696	0.570	11.1691	
180 minute summer	20	1.008	21	210.1	0.746	0.684	6.9819	
180 minute summer	21	1.009	23	245.9	0.873	0.349	4.0466	
180 minute summer	22	5.000	23	-238.9	-0.848	-0.320	6.0099	
180 minute summer	23	Hydro-Brake®	24	7.1				166.2

Results for 100 year +40% CC 180 minute winter. 420 minute analysis at 4 minute timestep. Mass balance: 99.50%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
180 minute winter	1	188	1.400	0.250	52.6	1.4532	0.0000	OK
180 minute winter	2	188	1.400	0.450	53.2	0.6447	0.0000	
180 minute winter	3	188	1.401	0.701	17.5	2.2083	0.0000	
180 minute winter	4	188	1.401	0.726	31.7	2.0619	0.0000	
180 minute winter	5	184	1.400	0.825	30.3	1.4572	0.0000	
180 minute winter	6	188	1.402	0.852	35.5	1.8325	0.0000	
180 minute winter	7	188	1.399	0.874	84.6	2.0537	0.0000	
180 minute winter	8	188	1.400	0.650	24.1	2.2220	0.0000	
180 minute winter	9	188	1.400	0.800	35.9	1.9705	0.0000	
180 minute winter	10	188	1.401	0.951	116.3	1.6801	0.0000	
180 minute winter	11	188	1.400	1.000	138.1	3.4302	0.0000	
180 minute winter	12	192	1.399	0.624	36.6	2.9040	0.0000	
180 minute winter	13	188	1.398	1.198	36.9	2.3406	0.0000	
180 minute winter	14	188	1.398	1.423	49.7	106.7607	0.0000	
180 minute winter	15	192	1.399	1.574	26.2	5.0494	0.0000	
180 minute winter	16	188	1.401	1.601	25.7	2.8284	0.0000	
180 minute winter	17	188	1.399	1.649	156.8	4.1387	0.0000	
180 minute winter	18	192	1.400	1.700	156.0	3.0031	0.0000	
180 minute winter	19	180	1.398	1.748	165.4	4.1557	0.0000	
180 minute winter	20	184	1.399	1.849	177.1	4.8902	0.0000	
180 minute winter	21	192	1.399	1.899	207.2	6.8093	0.0000	
180 minute winter	22	184	1.400	1.800	199.5	873.2567	0.0000	
180 minute winter	23	184	1.400	2.050	206.4	3.6229	0.0000	
180 minute winter	24	4	-0.750	0.000	7.3	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
180 minute winter	1	1.000	2	53.2	1.260	0.330	9.8638	
180 minute winter	2	1.001	7	52.1	1.432	0.108	2.4826	
180 minute winter	3	2.000	4	17.1	0.430	0.077	2.5371	
180 minute winter	4	2.001	5	30.3	0.512	0.129	9.1613	
180 minute winter	5	2.002	6	29.9	0.352	0.138	2.6639	
180 minute winter	6	2.003	7	35.0	0.344	0.162	2.6862	
180 minute winter	7	1.002	10	83.4	0.807	0.326	5.7467	
180 minute winter	8	3.000	9	22.7	0.598	0.134	8.5796	
180 minute winter	9	3.001	10	32.9	0.732	0.162	2.9745	
180 minute winter	10	1.003	11	115.7	1.278	0.451	3.8210	
180 minute winter	11	1.004	17	137.0	1.312	0.249	9.6452	
180 minute winter	12	4.000	13	34.7	0.658	0.084	17.0958	
180 minute winter	13	4.001	14	34.0	0.584	0.118	9.1090	
180 minute winter	14	4.002	15	-19.7	0.419	-0.030	4.7457	
180 minute winter	15	4.003	16	25.7	0.428	0.083	3.4691	
180 minute winter	16	4.004	17	25.7	0.225	0.066	4.3694	
180 minute winter	17	1.005	18	156.0	0.733	0.510	7.0543	
180 minute winter	18	1.006	19	155.6	0.752	0.414	4.6916	
180 minute winter	19	1.007	20	164.9	0.683	0.479	11.1691	
180 minute winter	20	1.008	21	176.5	0.627	0.574	6.9819	
180 minute winter	21	1.009	23	206.4	0.733	0.293	4.0466	
180 minute winter	22	5.000	23	-199.5	-0.708	-0.268	6.0099	
180 minute winter	23	Hydro-Brake®	24	7.3				169.1

Results for 100 year +40% CC 240 minute summer. 480 minute analysis at 4 minute timestep. Mass balance: 99.47%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
240 minute summer	1	124	1.337	0.187	57.0	1.0828	0.0000	OK
240 minute summer	2	252	1.328	0.378	56.4	0.5416	0.0000	OK
240 minute summer	3	240	1.327	0.627	19.0	1.9745	0.0000	
240 minute summer	4	252	1.327	0.652	32.1	1.8521	0.0000	
240 minute summer	5	244	1.326	0.751	29.4	1.3278	0.0000	
240 minute summer	6	252	1.328	0.778	34.5	1.6733	0.0000	
240 minute summer	7	252	1.328	0.803	86.8	1.8866	0.0000	
240 minute summer	8	252	1.329	0.579	26.1	1.9785	0.0000	
240 minute summer	9	252	1.327	0.727	34.7	1.7907	0.0000	
240 minute summer	10	252	1.329	0.879	118.3	1.5538	0.0000	
240 minute summer	11	252	1.328	0.928	141.6	3.1837	0.0000	
240 minute summer	12	244	1.330	0.555	39.6	2.5845	0.0000	
240 minute summer	13	244	1.330	1.130	38.7	2.2074	0.0000	
240 minute summer	14	244	1.330	1.355	51.8	96.8556	0.0000	
240 minute summer	15	244	1.330	1.505	26.9	4.8285	0.0000	
240 minute summer	16	240	1.330	1.530	27.6	2.7032	0.0000	
240 minute summer	17	244	1.329	1.579	156.7	3.9629	0.0000	
240 minute summer	18	252	1.327	1.627	156.4	2.8756	0.0000	
240 minute summer	19	244	1.329	1.679	165.5	3.9898	0.0000	
240 minute summer	20	248	1.329	1.779	176.9	4.7043	0.0000	
240 minute summer	21	248	1.329	1.829	208.9	6.5558	0.0000	
240 minute summer	22	248	1.328	1.728	201.0	803.2115	0.0000	
240 minute summer	23	248	1.329	1.979	207.8	3.4966	0.0000	
240 minute summer	24	4	-0.750	0.000	7.1	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
240 minute summer	1	1.000	2	56.4	1.288	0.349	8.0009	
240 minute summer	2	1.001	7	56.1	1.445	0.116	2.3569	
240 minute summer	3	2.000	4	16.3	0.432	0.073	2.5371	
240 minute summer	4	2.001	5	29.4	0.508	0.126	9.1613	
240 minute summer	5	2.002	6	29.4	0.350	0.136	2.6639	
240 minute summer	6	2.003	7	34.3	0.337	0.159	2.6862	
240 minute summer	7	1.002	10	85.3	0.765	0.333	5.7467	
240 minute summer	8	3.000	9	21.4	0.601	0.126	8.5796	
240 minute summer	9	3.001	10	33.0	0.729	0.162	2.9745	
240 minute summer	10	1.003	11	117.9	1.199	0.460	3.8210	
240 minute summer	11	1.004	17	140.3	1.160	0.255	9.6452	
240 minute summer	12	4.000	13	36.3	0.649	0.088	17.0958	
240 minute summer	13	4.001	14	35.5	0.519	0.123	9.1090	
240 minute summer	14	4.002	15	-24.3	0.395	-0.037	4.7457	
240 minute summer	15	4.003	16	27.6	0.416	0.089	3.4691	
240 minute summer	16	4.004	17	24.6	0.218	0.063	4.3694	
240 minute summer	17	1.005	18	156.4	0.651	0.512	7.0543	
240 minute summer	18	1.006	19	155.9	0.690	0.415	4.6916	
240 minute summer	19	1.007	20	165.0	0.650	0.480	11.1691	
240 minute summer	20	1.008	21	176.3	0.626	0.574	6.9819	
240 minute summer	21	1.009	23	207.8	0.738	0.295	4.0466	
240 minute summer	22	5.000	23	-201.0	-0.714	-0.270	6.0099	
240 minute summer	23	Hydro-Brake®	24	7.1				190.4

Results for 100 year +40% CC 240 minute winter. 480 minute analysis at 4 minute timestep. Mass balance: 99.51%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
240 minute winter	1	248	1.446	0.296	42.4	1.7165	0.0000	OK
240 minute winter	2	248	1.445	0.495	42.3	0.7084	0.0000	
240 minute winter	3	244	1.446	0.746	14.1	2.3497	0.0000	
240 minute winter	4	244	1.445	0.770	24.2	2.1880	0.0000	
240 minute winter	5	244	1.445	0.870	20.9	1.5372	0.0000	
240 minute winter	6	244	1.446	0.896	24.9	1.9267	0.0000	
240 minute winter	7	244	1.445	0.920	69.0	2.1620	0.0000	
240 minute winter	8	244	1.447	0.697	19.4	2.3807	0.0000	
240 minute winter	9	244	1.446	0.846	27.0	2.0819	0.0000	
240 minute winter	10	248	1.446	0.996	93.3	1.7603	0.0000	
240 minute winter	11	248	1.446	1.046	111.0	3.5884	0.0000	
240 minute winter	12	244	1.446	0.671	29.4	3.1229	0.0000	
240 minute winter	13	244	1.446	1.246	29.4	2.4328	0.0000	
240 minute winter	14	244	1.446	1.471	37.3	113.6600	0.0000	
240 minute winter	15	248	1.447	1.622	26.8	5.2039	0.0000	
240 minute winter	16	236	1.446	1.646	26.7	2.9082	0.0000	
240 minute winter	17	248	1.447	1.697	127.4	4.2599	0.0000	
240 minute winter	18	236	1.445	1.745	126.9	3.0830	0.0000	
240 minute winter	19	244	1.446	1.796	134.6	4.2700	0.0000	
240 minute winter	20	244	1.445	1.895	144.6	5.0120	0.0000	
240 minute winter	21	244	1.446	1.946	169.7	6.9776	0.0000	
240 minute winter	22	244	1.446	1.846	161.9	919.6783	0.0000	
240 minute winter	23	240	1.446	2.096	168.9	3.7040	0.0000	
240 minute winter	24	4	-0.750	0.000	7.3	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
240 minute winter	1	1.000	2	42.3	1.184	0.262	10.6549	
240 minute winter	2	1.001	7	42.2	1.436	0.087	2.4834	
240 minute winter	3	2.000	4	12.4	0.414	0.056	2.5371	
240 minute winter	4	2.001	5	20.9	0.496	0.089	9.1613	
240 minute winter	5	2.002	6	21.2	0.351	0.098	2.6639	
240 minute winter	6	2.003	7	24.5	0.338	0.113	2.6862	
240 minute winter	7	1.002	10	68.5	0.760	0.267	5.7467	
240 minute winter	8	3.000	9	17.4	0.583	0.103	8.5796	
240 minute winter	9	3.001	10	25.5	0.726	0.125	2.9745	
240 minute winter	10	1.003	11	93.0	1.188	0.363	3.8210	
240 minute winter	11	1.004	17	110.4	1.257	0.201	9.6452	
240 minute winter	12	4.000	13	27.6	0.608	0.067	17.0958	
240 minute winter	13	4.001	14	27.3	0.544	0.095	9.1090	
240 minute winter	14	4.002	15	15.7	0.415	0.024	4.7457	
240 minute winter	15	4.003	16	26.7	0.405	0.087	3.4691	
240 minute winter	16	4.004	17	25.0	0.220	0.064	4.3694	
240 minute winter	17	1.005	18	126.9	0.692	0.415	7.0543	
240 minute winter	18	1.006	19	126.6	0.695	0.337	4.6916	
240 minute winter	19	1.007	20	134.2	0.638	0.390	11.1691	
240 minute winter	20	1.008	21	143.9	0.672	0.468	6.9819	
240 minute winter	21	1.009	23	168.9	0.600	0.240	4.0466	
240 minute winter	22	5.000	23	-161.9	-0.575	-0.217	6.0099	
240 minute winter	23	Hydro-Brake®	24	7.3				193.3

Results for 100 year +40% CC 360 minute summer. 600 minute analysis at 8 minute timestep. Mass balance: 99.51%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute summer	1	360	1.376	0.226	42.5	1.3098	0.0000	OK
360 minute summer	2	360	1.374	0.424	42.0	0.6073	0.0000	OK
360 minute summer	3	360	1.375	0.675	14.2	2.1270	0.0000	
360 minute summer	4	360	1.375	0.700	24.3	1.9888	0.0000	
360 minute summer	5	376	1.374	0.799	19.6	1.4117	0.0000	
360 minute summer	6	360	1.376	0.826	20.9	1.7759	0.0000	
360 minute summer	7	376	1.375	0.850	67.4	1.9965	0.0000	
360 minute summer	8	360	1.376	0.626	19.5	2.1386	0.0000	
360 minute summer	9	360	1.375	0.775	25.7	1.9085	0.0000	
360 minute summer	10	360	1.375	0.925	84.9	1.6352	0.0000	
360 minute summer	11	360	1.375	0.975	101.3	3.3453	0.0000	
360 minute summer	12	360	1.378	0.603	29.5	2.8059	0.0000	
360 minute summer	13	360	1.378	1.178	26.7	2.2997	0.0000	
360 minute summer	14	360	1.378	1.403	36.6	103.7157	0.0000	
360 minute summer	15	360	1.377	1.552	20.5	4.9797	0.0000	
360 minute summer	16	376	1.379	1.579	20.3	2.7897	0.0000	
360 minute summer	17	360	1.374	1.624	119.1	4.0754	0.0000	
360 minute summer	18	360	1.376	1.676	118.7	2.9621	0.0000	
360 minute summer	19	360	1.374	1.724	126.1	4.0976	0.0000	
360 minute summer	20	368	1.375	1.825	135.2	4.8265	0.0000	
360 minute summer	21	368	1.375	1.875	158.3	6.7233	0.0000	
360 minute summer	22	368	1.376	1.776	150.9	849.8958	0.0000	
360 minute summer	23	368	1.376	2.026	157.7	3.5806	0.0000	
360 minute summer	24	8	-0.750	0.000	7.2	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
360 minute summer	1	1.000	2	42.0	1.181	0.260	9.2905	
360 minute summer	2	1.001	7	41.7	1.439	0.086	2.4559	
360 minute summer	3	2.000	4	12.5	0.404	0.056	2.5371	
360 minute summer	4	2.001	5	19.6	0.486	0.084	9.1613	
360 minute summer	5	2.002	6	17.5	0.350	0.081	2.6639	
360 minute summer	6	2.003	7	19.5	0.327	0.090	2.6862	
360 minute summer	7	1.002	10	63.4	0.699	0.248	5.7467	
360 minute summer	8	3.000	9	16.5	0.565	0.098	8.5796	
360 minute summer	9	3.001	10	22.2	0.675	0.109	2.9745	
360 minute summer	10	1.003	11	83.8	1.063	0.327	3.8210	
360 minute summer	11	1.004	17	100.4	1.054	0.182	9.6452	
360 minute summer	12	4.000	13	25.1	0.528	0.061	17.0958	
360 minute summer	13	4.001	14	23.7	0.483	0.082	9.1090	
360 minute summer	14	4.002	15	-14.5	0.368	-0.022	4.7457	
360 minute summer	15	4.003	16	20.3	0.397	0.066	3.4691	
360 minute summer	16	4.004	17	19.5	0.214	0.050	4.3694	
360 minute summer	17	1.005	18	118.7	0.599	0.388	7.0543	
360 minute summer	18	1.006	19	118.4	0.633	0.315	4.6916	
360 minute summer	19	1.007	20	125.7	0.522	0.365	11.1691	
360 minute summer	20	1.008	21	134.8	0.533	0.439	6.9819	
360 minute summer	21	1.009	23	157.7	0.560	0.224	4.0466	
360 minute summer	22	5.000	23	-150.9	-0.536	-0.202	6.0099	
360 minute summer	23	Hydro-Brake®	24	7.2				237.0

Results for 100 year +40% CC 360 minute winter. 600 minute analysis at 8 minute timestep. Mass balance: 99.53%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute winter	1	360	1.508	0.358	30.9	2.0783	0.0000	OK
360 minute winter	2	360	1.508	0.558	30.8	0.7989	0.0000	
360 minute winter	3	360	1.508	0.808	10.3	2.5462	0.0000	
360 minute winter	4	360	1.509	0.834	17.9	2.3673	0.0000	
360 minute winter	5	360	1.509	0.934	16.9	1.6505	0.0000	
360 minute winter	6	360	1.509	0.959	19.3	2.0616	0.0000	
360 minute winter	7	360	1.508	0.983	50.9	2.3101	0.0000	
360 minute winter	8	352	1.507	0.757	14.2	2.5889	0.0000	
360 minute winter	9	352	1.508	0.908	19.6	2.2347	0.0000	
360 minute winter	10	360	1.507	1.057	67.2	1.8674	0.0000	
360 minute winter	11	352	1.507	1.107	80.4	3.7994	0.0000	
360 minute winter	12	360	1.509	0.734	21.5	3.4185	0.0000	
360 minute winter	13	360	1.509	1.309	20.9	2.5566	0.0000	
360 minute winter	14	360	1.509	1.534	23.8	118.0542	0.0000	
360 minute winter	15	360	1.511	1.686	18.1	5.4104	0.0000	
360 minute winter	16	352	1.507	1.707	17.4	3.0169	0.0000	
360 minute winter	17	360	1.508	1.758	93.5	4.4131	0.0000	
360 minute winter	18	352	1.507	1.807	93.3	3.1927	0.0000	
360 minute winter	19	360	1.507	1.857	99.4	4.4149	0.0000	
360 minute winter	20	360	1.508	1.958	107.0	5.1783	0.0000	
360 minute winter	21	360	1.509	2.009	126.0	7.2015	0.0000	
360 minute winter	22	360	1.508	1.908	118.8	983.8715	0.0000	
360 minute winter	23	360	1.508	2.158	125.6	3.8125	0.0000	
360 minute winter	24	8	-0.750	0.000	7.4	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
360 minute winter	1	1.000	2	30.8	1.077	0.191	11.6386	
360 minute winter	2	1.001	7	30.8	1.438	0.064	2.4834	
360 minute winter	3	2.000	4	9.5	0.381	0.043	2.5371	
360 minute winter	4	2.001	5	16.9	0.479	0.072	9.1613	
360 minute winter	5	2.002	6	16.0	0.352	0.074	2.6639	
360 minute winter	6	2.003	7	19.1	0.327	0.088	2.6862	
360 minute winter	7	1.002	10	49.4	0.694	0.193	5.7467	
360 minute winter	8	3.000	9	12.1	0.539	0.071	8.5796	
360 minute winter	9	3.001	10	19.2	0.680	0.094	2.9745	
360 minute winter	10	1.003	11	67.0	1.075	0.261	3.8210	
360 minute winter	11	1.004	17	80.1	1.118	0.146	9.6452	
360 minute winter	12	4.000	13	19.6	0.543	0.047	17.0958	
360 minute winter	13	4.001	14	19.1	0.504	0.066	9.1090	
360 minute winter	14	4.002	15	10.5	0.386	0.016	4.7457	
360 minute winter	15	4.003	16	17.4	0.383	0.056	3.4691	
360 minute winter	16	4.004	17	17.4	0.212	0.045	4.3694	
360 minute winter	17	1.005	18	93.3	0.638	0.305	7.0543	
360 minute winter	18	1.006	19	93.1	0.624	0.248	4.6916	
360 minute winter	19	1.007	20	99.2	0.600	0.289	11.1691	
360 minute winter	20	1.008	21	106.8	0.448	0.348	6.9819	
360 minute winter	21	1.009	23	125.6	0.446	0.178	4.0466	
360 minute winter	22	5.000	23	-118.8	-0.422	-0.159	6.0099	
360 minute winter	23	Hydro-Brake®	24	7.4				240.9

Results for 100 year +40% CC 480 minute summer. 720 minute analysis at 8 minute timestep. Mass balance: 99.52%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
480 minute summer	1	480	1.405	0.255	33.0	1.4804	0.0000	OK
480 minute summer	2	480	1.405	0.455	33.0	0.6512	0.0000	
480 minute summer	3	480	1.407	0.707	11.0	2.2265	0.0000	
480 minute summer	4	480	1.407	0.732	19.2	2.0775	0.0000	
480 minute summer	5	480	1.407	0.832	16.3	1.4701	0.0000	
480 minute summer	6	480	1.404	0.854	17.7	1.8357	0.0000	
480 minute summer	7	480	1.407	0.882	54.9	2.0719	0.0000	
480 minute summer	8	480	1.408	0.658	15.1	2.2474	0.0000	
480 minute summer	9	480	1.406	0.806	20.8	1.9853	0.0000	
480 minute summer	10	480	1.406	0.956	71.2	1.6900	0.0000	
480 minute summer	11	480	1.406	1.006	85.2	3.4512	0.0000	
480 minute summer	12	480	1.406	0.631	22.9	2.9387	0.0000	
480 minute summer	13	480	1.406	1.206	21.0	2.3550	0.0000	
480 minute summer	14	480	1.406	1.431	29.6	107.8338	0.0000	
480 minute summer	15	480	1.405	1.580	19.2	5.0701	0.0000	
480 minute summer	16	480	1.406	1.606	17.1	2.8379	0.0000	
480 minute summer	17	480	1.404	1.654	96.8	4.1527	0.0000	
480 minute summer	18	480	1.405	1.705	96.0	3.0135	0.0000	
480 minute summer	19	480	1.405	1.755	102.8	4.1719	0.0000	
480 minute summer	20	480	1.405	1.855	110.6	4.9071	0.0000	
480 minute summer	21	488	1.405	1.905	131.2	6.8301	0.0000	
480 minute summer	22	488	1.404	1.804	124.1	877.8550	0.0000	
480 minute summer	23	488	1.404	2.054	130.8	3.6293	0.0000	
480 minute summer	24	8	-0.750	0.000	7.3	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
480 minute summer	1	1.000	2	33.0	1.099	0.204	9.9507	
480 minute summer	2	1.001	7	33.0	1.433	0.068	2.4834	
480 minute summer	3	2.000	4	10.0	0.386	0.045	2.5371	
480 minute summer	4	2.001	5	16.3	0.477	0.070	9.1613	
480 minute summer	5	2.002	6	14.9	0.350	0.068	2.6639	
480 minute summer	6	2.003	7	17.1	0.324	0.079	2.6862	
480 minute summer	7	1.002	10	53.0	0.655	0.207	5.7467	
480 minute summer	8	3.000	9	12.9	0.532	0.077	8.5796	
480 minute summer	9	3.001	10	18.2	0.676	0.089	2.9745	
480 minute summer	10	1.003	11	70.5	1.005	0.275	3.8210	
480 minute summer	11	1.004	17	84.7	0.985	0.154	9.6452	
480 minute summer	12	4.000	13	19.7	0.496	0.048	17.0958	
480 minute summer	13	4.001	14	18.9	0.456	0.066	9.1090	
480 minute summer	14	4.002	15	11.6	0.344	0.018	4.7457	
480 minute summer	15	4.003	16	17.1	0.386	0.056	3.4691	
480 minute summer	16	4.004	17	18.8	0.215	0.048	4.3694	
480 minute summer	17	1.005	18	96.0	0.562	0.314	7.0543	
480 minute summer	18	1.006	19	95.9	0.594	0.255	4.6916	
480 minute summer	19	1.007	20	102.1	0.557	0.297	11.1691	
480 minute summer	20	1.008	21	110.1	0.428	0.358	6.9819	
480 minute summer	21	1.009	23	130.8	0.464	0.186	4.0466	
480 minute summer	22	5.000	23	-124.1	-0.441	-0.167	6.0099	
480 minute summer	23	Hydro-Brake®	24	7.3				284.6

Results for 100 year +40% CC 480 minute winter. 720 minute analysis at 8 minute timestep. Mass balance: 99.55%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
480 minute winter	1	488	1.550	0.400	24.5	2.3208	0.0000	OK
480 minute winter	2	488	1.550	0.600	24.7	0.8587	0.0000	
480 minute winter	3	472	1.551	0.851	8.2	2.6808	0.0000	
480 minute winter	4	472	1.551	0.876	14.3	2.4868	0.0000	
480 minute winter	5	480	1.551	0.976	13.4	1.7254	0.0000	
480 minute winter	6	488	1.550	1.000	14.8	2.1500	0.0000	
480 minute winter	7	480	1.551	1.026	41.3	2.4101	0.0000	
480 minute winter	8	488	1.550	0.800	11.2	2.7348	0.0000	
480 minute winter	9	488	1.550	0.950	15.9	2.3388	0.0000	
480 minute winter	10	488	1.550	1.100	53.8	1.9435	0.0000	
480 minute winter	11	472	1.549	1.149	65.4	3.9430	0.0000	
480 minute winter	12	488	1.552	0.777	17.0	3.6201	0.0000	
480 minute winter	13	472	1.553	1.353	15.9	2.6415	0.0000	
480 minute winter	14	472	1.553	1.578	18.4	118.1320	0.0000	
480 minute winter	15	488	1.552	1.727	15.0	5.5428	0.0000	
480 minute winter	16	472	1.552	1.752	13.7	3.0962	0.0000	
480 minute winter	17	488	1.549	1.799	76.3	4.5163	0.0000	
480 minute winter	18	472	1.549	1.849	75.7	3.2663	0.0000	
480 minute winter	19	472	1.549	1.899	81.4	4.5149	0.0000	
480 minute winter	20	472	1.549	1.999	86.6	5.2863	0.0000	
480 minute winter	21	472	1.549	2.049	101.4	7.3445	0.0000	
480 minute winter	22	472	1.548	1.948	94.1	1026.3000	0.0000	
480 minute winter	23	480	1.549	2.199	102.5	3.8849	0.0000	
480 minute winter	24	8	-0.750	0.000	7.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
480 minute winter	1	1.000	2	24.7	1.004	0.153	12.1767	
480 minute winter	2	1.001	7	24.4	1.370	0.050	2.4834	
480 minute winter	3	2.000	4	7.5	0.359	0.034	2.5371	
480 minute winter	4	2.001	5	13.4	0.468	0.057	9.1613	
480 minute winter	5	2.002	6	12.3	0.352	0.057	2.6639	
480 minute winter	6	2.003	7	16.1	0.322	0.075	2.6862	
480 minute winter	7	1.002	10	39.1	0.651	0.153	5.7467	
480 minute winter	8	3.000	9	9.8	0.510	0.058	8.5796	
480 minute winter	9	3.001	10	15.3	0.659	0.075	2.9745	
480 minute winter	10	1.003	11	54.8	1.000	0.214	3.8210	
480 minute winter	11	1.004	17	64.5	1.068	0.117	9.6452	
480 minute winter	12	4.000	13	14.9	0.510	0.036	17.0958	
480 minute winter	13	4.001	14	14.6	0.479	0.051	9.1090	
480 minute winter	14	4.002	15	8.9	0.380	0.014	4.7457	
480 minute winter	15	4.003	16	13.7	0.388	0.044	3.4691	
480 minute winter	16	4.004	17	14.7	0.214	0.038	4.3694	
480 minute winter	17	1.005	18	75.7	0.600	0.248	7.0543	
480 minute winter	18	1.006	19	76.4	0.605	0.203	4.6916	
480 minute winter	19	1.007	20	80.4	0.521	0.234	11.1691	
480 minute winter	20	1.008	21	86.1	0.623	0.280	6.9819	
480 minute winter	21	1.009	23	102.5	0.364	0.146	4.0466	
480 minute winter	22	5.000	23	-94.1	-0.334	-0.126	6.0099	
480 minute winter	23	Hydro-Brake®	24	7.5				289.2

Results for 100 year +40% CC 600 minute summer. 840 minute analysis at 15 minute timestep. Mass balance: 99.54%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
600 minute summer	1	600	1.421	0.271	26.7	1.5724	0.0000	OK
600 minute summer	2	600	1.419	0.469	26.7	0.6717	0.0000	
600 minute summer	3	600	1.426	0.726	8.9	2.2856	0.0000	
600 minute summer	4	600	1.425	0.750	15.5	2.1295	0.0000	
600 minute summer	5	600	1.426	0.851	13.2	1.5035	0.0000	
600 minute summer	6	600	1.421	0.871	14.5	1.8719	0.0000	
600 minute summer	7	600	1.421	0.896	44.6	2.1058	0.0000	
600 minute summer	8	615	1.419	0.669	12.2	2.2879	0.0000	
600 minute summer	9	615	1.419	0.819	16.9	2.0166	0.0000	
600 minute summer	10	615	1.419	0.969	58.2	1.7116	0.0000	
600 minute summer	11	600	1.420	1.020	69.8	3.4981	0.0000	
600 minute summer	12	600	1.420	0.645	18.5	3.0044	0.0000	
600 minute summer	13	600	1.420	1.220	16.0	2.3829	0.0000	
600 minute summer	14	600	1.420	1.445	19.0	109.9354	0.0000	
600 minute summer	15	585	1.421	1.596	14.9	5.1213	0.0000	
600 minute summer	16	615	1.421	1.621	16.3	2.8649	0.0000	
600 minute summer	17	600	1.421	1.671	80.4	4.1934	0.0000	
600 minute summer	18	615	1.419	1.719	80.3	3.0369	0.0000	
600 minute summer	19	600	1.421	1.771	85.4	4.2087	0.0000	
600 minute summer	20	600	1.419	1.869	92.1	4.9433	0.0000	
600 minute summer	21	615	1.417	1.917	108.8	6.8739	0.0000	
600 minute summer	22	600	1.418	1.818	101.6	891.2999	0.0000	
600 minute summer	23	600	1.419	2.069	108.3	3.6558	0.0000	
600 minute summer	24	15	-0.750	0.000	7.3	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
600 minute summer	1	1.000	2	26.7	1.032	0.165	10.2288	
600 minute summer	2	1.001	7	26.7	1.316	0.055	2.4834	
600 minute summer	3	2.000	4	8.1	0.353	0.036	2.5371	
600 minute summer	4	2.001	5	13.2	0.462	0.057	9.1613	
600 minute summer	5	2.002	6	12.1	0.351	0.056	2.6639	
600 minute summer	6	2.003	7	14.3	0.316	0.066	2.6862	
600 minute summer	7	1.002	10	43.3	0.626	0.169	5.7467	
600 minute summer	8	3.000	9	10.2	0.508	0.060	8.5796	
600 minute summer	9	3.001	10	15.0	0.652	0.074	2.9745	
600 minute summer	10	1.003	11	57.9	0.945	0.226	3.8210	
600 minute summer	11	1.004	17	69.4	0.938	0.126	9.6452	
600 minute summer	12	4.000	13	14.8	0.467	0.036	17.0958	
600 minute summer	13	4.001	14	15.5	0.427	0.054	9.1090	
600 minute summer	14	4.002	15	8.8	0.317	0.014	4.7457	
600 minute summer	15	4.003	16	16.3	0.373	0.053	3.4691	
600 minute summer	16	4.004	17	13.7	0.204	0.035	4.3694	
600 minute summer	17	1.005	18	80.3	0.537	0.263	7.0543	
600 minute summer	18	1.006	19	79.8	0.559	0.213	4.6916	
600 minute summer	19	1.007	20	85.2	0.540	0.248	11.1691	
600 minute summer	20	1.008	21	91.7	0.504	0.299	6.9819	
600 minute summer	21	1.009	23	108.3	0.385	0.154	4.0466	
600 minute summer	22	5.000	23	-101.6	-0.361	-0.136	6.0099	
600 minute summer	23	Hydro-Brake®	24	7.3				329.8

Results for 100 year +40% CC 600 minute winter. 840 minute analysis at 15 minute timestep. Mass balance: 99.56%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
600 minute winter	1	600	1.574	0.424	20.4	2.4645	0.0000	OK
600 minute winter	2	600	1.573	0.623	20.6	0.8915	0.0000	
600 minute winter	3	585	1.575	0.875	6.8	2.7571	0.0000	
600 minute winter	4	585	1.575	0.900	11.8	2.5568	0.0000	
600 minute winter	5	585	1.573	0.998	10.2	1.7639	0.0000	
600 minute winter	6	585	1.574	1.024	12.9	2.2021	0.0000	
600 minute winter	7	585	1.572	1.047	33.8	2.4614	0.0000	
600 minute winter	8	585	1.572	0.822	9.4	2.8108	0.0000	
600 minute winter	9	585	1.572	0.972	12.9	2.3923	0.0000	
600 minute winter	10	585	1.572	1.122	45.7	1.9833	0.0000	
600 minute winter	11	585	1.571	1.171	54.2	4.0173	0.0000	
600 minute winter	12	600	1.573	0.798	14.2	3.7147	0.0000	
600 minute winter	13	570	1.572	1.372	13.0	2.6797	0.0000	
600 minute winter	14	570	1.574	1.599	14.7	118.1688	0.0000	
600 minute winter	15	615	1.571	1.746	11.6	5.6042	0.0000	
600 minute winter	16	570	1.572	1.772	14.1	3.1309	0.0000	
600 minute winter	17	600	1.571	1.821	64.1	4.5697	0.0000	
600 minute winter	18	600	1.572	1.872	63.2	3.3075	0.0000	
600 minute winter	19	600	1.570	1.920	67.4	4.5634	0.0000	
600 minute winter	20	600	1.571	2.021	72.5	5.3452	0.0000	
600 minute winter	21	600	1.571	2.071	85.4	7.4232	0.0000	
600 minute winter	22	600	1.572	1.972	78.4	1051.0660	0.0000	
600 minute winter	23	585	1.571	2.221	85.0	3.9252	0.0000	
600 minute winter	24	15	-0.750	0.000	7.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
600 minute winter	1	1.000	2	20.6	0.949	0.128	12.4206	
600 minute winter	2	1.001	7	20.3	1.332	0.042	2.4834	
600 minute winter	3	2.000	4	6.1	0.346	0.028	2.5371	
600 minute winter	4	2.001	5	10.2	0.458	0.044	9.1613	
600 minute winter	5	2.002	6	10.9	0.351	0.050	2.6639	
600 minute winter	6	2.003	7	11.8	0.312	0.055	2.6862	
600 minute winter	7	1.002	10	33.2	0.617	0.130	5.7467	
600 minute winter	8	3.000	9	8.1	0.479	0.048	8.5796	
600 minute winter	9	3.001	10	12.8	0.631	0.063	2.9745	
600 minute winter	10	1.003	11	45.3	0.942	0.177	3.8210	
600 minute winter	11	1.004	17	54.1	1.012	0.098	9.6452	
600 minute winter	12	4.000	13	12.2	0.484	0.030	17.0958	
600 minute winter	13	4.001	14	12.5	0.459	0.043	9.1090	
600 minute winter	14	4.002	15	6.6	0.350	0.010	4.7457	
600 minute winter	15	4.003	16	14.1	0.383	0.046	3.4691	
600 minute winter	16	4.004	17	10.1	0.206	0.026	4.3694	
600 minute winter	17	1.005	18	63.2	0.558	0.207	7.0543	
600 minute winter	18	1.006	19	63.4	0.588	0.169	4.6916	
600 minute winter	19	1.007	20	67.2	0.473	0.195	11.1691	
600 minute winter	20	1.008	21	72.3	0.543	0.235	6.9819	
600 minute winter	21	1.009	23	85.0	0.347	0.121	4.0466	
600 minute winter	22	5.000	23	-78.4	-0.278	-0.105	6.0099	
600 minute winter	23	Hydro-Brake®	24	7.5				335.1

Results for 100 year +40% CC 720 minute summer. 960 minute analysis at 15 minute timestep. Mass balance: 99.56%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
720 minute summer	1	705	1.425	0.275	23.6	1.5978	0.0000	OK
720 minute summer	2	705	1.426	0.476	23.6	0.6811	0.0000	
720 minute summer	3	720	1.427	0.727	7.9	2.2904	0.0000	
720 minute summer	4	720	1.427	0.752	13.7	2.1364	0.0000	
720 minute summer	5	705	1.427	0.852	11.8	1.5061	0.0000	
720 minute summer	6	720	1.427	0.877	12.8	1.8862	0.0000	
720 minute summer	7	705	1.425	0.900	39.7	2.1144	0.0000	
720 minute summer	8	720	1.424	0.674	10.8	2.3042	0.0000	
720 minute summer	9	720	1.425	0.825	14.9	2.0308	0.0000	
720 minute summer	10	720	1.426	0.976	51.5	1.7237	0.0000	
720 minute summer	11	720	1.425	1.025	61.6	3.5174	0.0000	
720 minute summer	12	720	1.425	0.650	16.4	3.0279	0.0000	
720 minute summer	13	735	1.425	1.225	15.0	2.3926	0.0000	
720 minute summer	14	735	1.425	1.450	17.7	110.6686	0.0000	
720 minute summer	15	720	1.426	1.601	10.7	5.1392	0.0000	
720 minute summer	16	735	1.426	1.626	11.9	2.8736	0.0000	
720 minute summer	17	720	1.427	1.677	70.6	4.2088	0.0000	
720 minute summer	18	720	1.427	1.727	71.2	3.0511	0.0000	
720 minute summer	19	720	1.426	1.776	75.5	4.2223	0.0000	
720 minute summer	20	720	1.427	1.877	81.4	4.9642	0.0000	
720 minute summer	21	720	1.427	1.927	96.3	6.9075	0.0000	
720 minute summer	22	720	1.426	1.826	89.3	899.6461	0.0000	
720 minute summer	23	720	1.426	2.076	95.9	3.6679	0.0000	
720 minute summer	24	15	-0.750	0.000	7.3	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
720 minute summer	1	1.000	2	23.6	0.993	0.146	10.3050	
720 minute summer	2	1.001	7	23.6	1.316	0.049	2.4834	
720 minute summer	3	2.000	4	7.2	0.347	0.032	2.5371	
720 minute summer	4	2.001	5	11.8	0.463	0.050	9.1613	
720 minute summer	5	2.002	6	10.2	0.355	0.047	2.6639	
720 minute summer	6	2.003	7	12.0	0.320	0.055	2.6862	
720 minute summer	7	1.002	10	38.3	0.607	0.150	5.7467	
720 minute summer	8	3.000	9	9.0	0.471	0.053	8.5796	
720 minute summer	9	3.001	10	13.2	0.613	0.065	2.9745	
720 minute summer	10	1.003	11	51.1	0.902	0.199	3.8210	
720 minute summer	11	1.004	17	61.3	0.897	0.111	9.6452	
720 minute summer	12	4.000	13	14.0	0.454	0.034	17.0958	
720 minute summer	13	4.001	14	13.8	0.413	0.048	9.1090	
720 minute summer	14	4.002	15	5.9	0.310	0.009	4.7457	
720 minute summer	15	4.003	16	11.9	0.353	0.039	3.4691	
720 minute summer	16	4.004	17	9.7	0.195	0.025	4.3694	
720 minute summer	17	1.005	18	71.2	0.513	0.233	7.0543	
720 minute summer	18	1.006	19	70.6	0.541	0.188	4.6916	
720 minute summer	19	1.007	20	75.3	0.516	0.219	11.1691	
720 minute summer	20	1.008	21	81.2	0.634	0.264	6.9819	
720 minute summer	21	1.009	23	95.9	0.341	0.136	4.0466	
720 minute summer	22	5.000	23	-89.3	-0.317	-0.120	6.0099	
720 minute summer	23	Hydro-Brake®	24	7.3				377.5

Results for 100 year +40% CC 720 minute winter. 960 minute analysis at 15 minute timestep. Mass balance: 99.57%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
720 minute winter	1	705	1.584	0.434	17.7	2.5224	0.0000	OK
720 minute winter	2	720	1.584	0.634	18.2	0.9067	0.0000	
720 minute winter	3	690	1.584	0.884	5.9	2.7842	0.0000	
720 minute winter	4	705	1.584	0.909	10.3	2.5802	0.0000	
720 minute winter	5	720	1.584	1.009	9.8	1.7836	0.0000	
720 minute winter	6	705	1.583	1.033	11.3	2.2216	0.0000	
720 minute winter	7	720	1.584	1.059	30.3	2.4876	0.0000	
720 minute winter	8	720	1.586	0.836	8.1	2.8559	0.0000	
720 minute winter	9	720	1.584	0.984	11.4	2.4237	0.0000	
720 minute winter	10	705	1.584	1.134	38.8	2.0034	0.0000	
720 minute winter	11	705	1.583	1.183	47.7	4.0593	0.0000	
720 minute winter	12	705	1.590	0.815	12.3	3.7958	0.0000	
720 minute winter	13	705	1.589	1.389	11.8	2.7136	0.0000	
720 minute winter	14	705	1.587	1.612	13.1	118.1928	0.0000	
720 minute winter	15	705	1.587	1.762	10.9	5.6530	0.0000	
720 minute winter	16	705	1.587	1.787	10.3	3.1574	0.0000	
720 minute winter	17	705	1.586	1.836	57.2	4.6077	0.0000	
720 minute winter	18	705	1.584	1.884	55.6	3.3288	0.0000	
720 minute winter	19	705	1.585	1.935	59.6	4.6006	0.0000	
720 minute winter	20	705	1.584	2.034	63.2	5.3805	0.0000	
720 minute winter	21	720	1.584	2.084	73.9	7.4727	0.0000	
720 minute winter	22	705	1.584	1.984	66.8	1064.6390	0.0000	
720 minute winter	23	705	1.584	2.234	75.5	3.9483	0.0000	
720 minute winter	24	15	-0.750	0.000	7.6	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
720 minute winter	1	1.000	2	18.2	0.910	0.113	12.4936	
720 minute winter	2	1.001	7	17.6	1.275	0.036	2.4834	
720 minute winter	3	2.000	4	5.6	0.333	0.025	2.5371	
720 minute winter	4	2.001	5	9.8	0.453	0.042	9.1613	
720 minute winter	5	2.002	6	9.7	0.350	0.045	2.6639	
720 minute winter	6	2.003	7	12.5	0.310	0.058	2.6862	
720 minute winter	7	1.002	10	28.7	0.602	0.112	5.7467	
720 minute winter	8	3.000	9	7.1	0.458	0.042	8.5796	
720 minute winter	9	3.001	10	10.8	0.609	0.053	2.9745	
720 minute winter	10	1.003	11	40.1	0.918	0.156	3.8210	
720 minute winter	11	1.004	17	46.7	0.975	0.085	9.6452	
720 minute winter	12	4.000	13	11.1	0.453	0.027	17.0958	
720 minute winter	13	4.001	14	11.3	0.435	0.039	9.1090	
720 minute winter	14	4.002	15	6.6	0.341	0.010	4.7457	
720 minute winter	15	4.003	16	10.3	0.377	0.034	3.4691	
720 minute winter	16	4.004	17	10.9	0.204	0.028	4.3694	
720 minute winter	17	1.005	18	55.6	0.560	0.182	7.0543	
720 minute winter	18	1.006	19	56.0	0.547	0.149	4.6916	
720 minute winter	19	1.007	20	58.8	0.474	0.171	11.1691	
720 minute winter	20	1.008	21	63.0	0.453	0.205	6.9819	
720 minute winter	21	1.009	23	75.5	0.336	0.107	4.0466	
720 minute winter	22	5.000	23	-66.8	-0.237	-0.090	6.0099	
720 minute winter	23	Hydro-Brake®	24	7.6				382.3

Results for 100 year +40% CC 960 minute summer. 1200 minute analysis at 15 minute timestep. Mass balance: 99.58%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
960 minute summer	1	975	1.432	0.282	19.1	1.6376	0.0000	OK
960 minute summer	2	975	1.427	0.477	19.1	0.6819	0.0000	
960 minute summer	3	975	1.426	0.726	6.4	2.2867	0.0000	
960 minute summer	4	975	1.426	0.751	11.1	2.1325	0.0000	
960 minute summer	5	975	1.426	0.851	9.6	1.5041	0.0000	
960 minute summer	6	975	1.426	0.876	10.8	1.8828	0.0000	
960 minute summer	7	975	1.427	0.902	32.0	2.1194	0.0000	
960 minute summer	8	960	1.425	0.675	8.7	2.3068	0.0000	
960 minute summer	9	975	1.426	0.826	12.2	2.0327	0.0000	
960 minute summer	10	960	1.425	0.975	41.1	1.7224	0.0000	
960 minute summer	11	975	1.425	1.025	49.1	3.5173	0.0000	
960 minute summer	12	960	1.425	0.650	13.2	3.0282	0.0000	
960 minute summer	13	960	1.425	1.225	12.5	2.3930	0.0000	
960 minute summer	14	960	1.425	1.450	13.4	110.6830	0.0000	
960 minute summer	15	930	1.426	1.601	11.6	5.1388	0.0000	
960 minute summer	16	975	1.423	1.623	12.2	2.8676	0.0000	
960 minute summer	17	960	1.424	1.674	57.9	4.2026	0.0000	
960 minute summer	18	975	1.425	1.725	57.5	3.0473	0.0000	
960 minute summer	19	960	1.424	1.774	61.6	4.2161	0.0000	
960 minute summer	20	975	1.423	1.873	65.8	4.9535	0.0000	
960 minute summer	21	960	1.423	1.923	78.2	6.8930	0.0000	
960 minute summer	22	960	1.422	1.822	70.9	895.5366	0.0000	
960 minute summer	23	975	1.423	2.073	78.6	3.6625	0.0000	
960 minute summer	24	15	-0.750	0.000	7.3	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
960 minute summer	1	1.000	2	19.1	0.931	0.118	10.4231	
960 minute summer	2	1.001	7	19.1	1.241	0.039	2.4834	
960 minute summer	3	2.000	4	5.8	0.337	0.026	2.5371	
960 minute summer	4	2.001	5	9.6	0.448	0.041	9.1613	
960 minute summer	5	2.002	6	8.9	0.356	0.041	2.6639	
960 minute summer	6	2.003	7	10.4	0.316	0.048	2.6862	
960 minute summer	7	1.002	10	30.7	0.582	0.120	5.7467	
960 minute summer	8	3.000	9	7.6	0.451	0.045	8.5796	
960 minute summer	9	3.001	10	11.1	0.593	0.054	2.9745	
960 minute summer	10	1.003	11	40.6	0.880	0.158	3.8210	
960 minute summer	11	1.004	17	49.0	0.840	0.089	9.6452	
960 minute summer	12	4.000	13	11.7	0.433	0.028	17.0958	
960 minute summer	13	4.001	14	11.7	0.391	0.041	9.1090	
960 minute summer	14	4.002	15	7.6	0.302	0.012	4.7457	
960 minute summer	15	4.003	16	12.2	0.335	0.040	3.4691	
960 minute summer	16	4.004	17	11.2	0.194	0.029	4.3694	
960 minute summer	17	1.005	18	57.5	0.494	0.188	7.0543	
960 minute summer	18	1.006	19	57.6	0.509	0.153	4.6916	
960 minute summer	19	1.007	20	60.9	0.475	0.177	11.1691	
960 minute summer	20	1.008	21	66.0	0.574	0.215	6.9819	
960 minute summer	21	1.009	23	78.6	0.304	0.112	4.0466	
960 minute summer	22	5.000	23	-70.9	-0.252	-0.095	6.0099	
960 minute summer	23	Hydro-Brake®	24	7.3				472.6

Results for 100 year +40% CC 960 minute winter. 1200 minute analysis at 15 minute timestep. Mass balance: 99.60%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
960 minute winter	1	945	1.595	0.445	14.2	2.5813	0.0000	OK
960 minute winter	2	930	1.592	0.642	14.4	0.9189	0.0000	
960 minute winter	3	930	1.593	0.893	4.7	2.8139	0.0000	
960 minute winter	4	930	1.593	0.918	8.4	2.6076	0.0000	
960 minute winter	5	930	1.592	1.017	8.3	1.7966	0.0000	
960 minute winter	6	930	1.591	1.041	10.3	2.2392	0.0000	
960 minute winter	7	930	1.593	1.068	24.5	2.5096	0.0000	
960 minute winter	8	930	1.594	0.844	6.5	2.8833	0.0000	
960 minute winter	9	930	1.593	0.993	9.6	2.4447	0.0000	
960 minute winter	10	930	1.594	1.144	32.7	2.0206	0.0000	
960 minute winter	11	930	1.593	1.193	38.3	4.0940	0.0000	
960 minute winter	12	930	1.598	0.823	9.8	3.8315	0.0000	
960 minute winter	13	930	1.597	1.397	9.4	2.7276	0.0000	
960 minute winter	14	930	1.597	1.622	9.7	118.2100	0.0000	
960 minute winter	15	960	1.599	1.774	9.6	5.6915	0.0000	
960 minute winter	16	930	1.593	1.793	7.1	3.1677	0.0000	
960 minute winter	17	930	1.595	1.845	46.3	4.6318	0.0000	
960 minute winter	18	930	1.594	1.894	45.2	3.3464	0.0000	
960 minute winter	19	930	1.593	1.943	48.7	4.6187	0.0000	
960 minute winter	20	945	1.593	2.043	51.6	5.4043	0.0000	
960 minute winter	21	945	1.594	2.094	60.5	7.5057	0.0000	
960 minute winter	22	945	1.593	1.993	53.2	1073.9070	0.0000	
960 minute winter	23	930	1.592	2.242	59.5	3.9621	0.0000	
960 minute winter	24	15	-0.750	0.000	7.6	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
960 minute winter	1	1.000	2	14.4	0.850	0.089	12.5458	
960 minute winter	2	1.001	7	14.2	1.189	0.029	2.4834	
960 minute winter	3	2.000	4	4.6	0.316	0.021	2.5371	
960 minute winter	4	2.001	5	8.3	0.436	0.036	9.1613	
960 minute winter	5	2.002	6	8.8	0.352	0.041	2.6639	
960 minute winter	6	2.003	7	10.1	0.308	0.047	2.6862	
960 minute winter	7	1.002	10	23.5	0.566	0.092	5.7467	
960 minute winter	8	3.000	9	6.1	0.436	0.036	8.5796	
960 minute winter	9	3.001	10	9.1	0.580	0.045	2.9745	
960 minute winter	10	1.003	11	32.2	0.843	0.125	3.8210	
960 minute winter	11	1.004	17	38.0	0.913	0.069	9.6452	
960 minute winter	12	4.000	13	8.8	0.439	0.021	17.0958	
960 minute winter	13	4.001	14	8.7	0.406	0.030	9.1090	
960 minute winter	14	4.002	15	5.9	0.309	0.009	4.7457	
960 minute winter	15	4.003	16	7.1	0.363	0.023	3.4691	
960 minute winter	16	4.004	17	10.0	0.208	0.026	4.3694	
960 minute winter	17	1.005	18	45.2	0.518	0.148	7.0543	
960 minute winter	18	1.006	19	45.8	0.529	0.122	4.6916	
960 minute winter	19	1.007	20	48.0	0.454	0.139	11.1691	
960 minute winter	20	1.008	21	51.7	0.558	0.168	6.9819	
960 minute winter	21	1.009	23	59.5	0.266	0.085	4.0466	
960 minute winter	22	5.000	23	-53.2	-0.189	-0.071	6.0099	
960 minute winter	23	Hydro-Brake®	24	7.6				477.6

Results for 100 year +40% CC 1440 minute summer. 1680 minute analysis at 30 minute timestep. Mass balance: 99.64%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
1440 minute summer	1	1230	1.388	0.238	13.5	1.3836	0.0000	OK
1440 minute summer	2	1230	1.387	0.437	13.5	0.6254	0.0000	OK
1440 minute summer	3	1230	1.387	0.687	4.5	2.1643	0.0000	
1440 minute summer	4	1230	1.387	0.712	7.9	2.0224	0.0000	
1440 minute summer	5	1290	1.386	0.811	7.0	1.4332	0.0000	
1440 minute summer	6	1230	1.387	0.837	7.6	1.8001	0.0000	
1440 minute summer	7	1230	1.385	0.860	22.6	2.0219	0.0000	
1440 minute summer	8	1230	1.387	0.637	6.2	2.1765	0.0000	
1440 minute summer	9	1230	1.386	0.786	8.7	1.9349	0.0000	
1440 minute summer	10	1230	1.387	0.937	29.3	1.6563	0.0000	
1440 minute summer	11	1230	1.385	0.985	34.8	3.3812	0.0000	
1440 minute summer	12	1320	1.387	0.612	9.4	2.8493	0.0000	
1440 minute summer	13	1320	1.387	1.187	9.5	2.3178	0.0000	
1440 minute summer	14	1320	1.387	1.412	11.0	105.0525	0.0000	
1440 minute summer	15	1320	1.390	1.565	8.5	5.0211	0.0000	
1440 minute summer	16	1410	1.383	1.583	7.8	2.7980	0.0000	
1440 minute summer	17	1230	1.385	1.635	41.4	4.1029	0.0000	
1440 minute summer	18	1230	1.383	1.683	41.4	2.9742	0.0000	
1440 minute summer	19	1230	1.385	1.735	43.9	4.1233	0.0000	
1440 minute summer	20	1410	1.382	1.832	47.3	4.8458	0.0000	
1440 minute summer	21	1410	1.383	1.883	55.9	6.7492	0.0000	
1440 minute summer	22	1260	1.382	1.782	49.1	855.4094	0.0000	
1440 minute summer	23	1320	1.381	2.031	55.5	3.5892	0.0000	
1440 minute summer	24	30	-0.750	0.000	7.2	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
1440 minute summer	1	1.000	2	13.5	0.838	0.084	9.6057	
1440 minute summer	2	1.001	7	13.5	1.189	0.028	2.4735	
1440 minute summer	3	2.000	4	4.1	0.303	0.018	2.5371	
1440 minute summer	4	2.001	5	7.0	0.416	0.030	9.1613	
1440 minute summer	5	2.002	6	6.3	0.341	0.029	2.6639	
1440 minute summer	6	2.003	7	7.4	0.297	0.034	2.6862	
1440 minute summer	7	1.002	10	21.6	0.557	0.084	5.7467	
1440 minute summer	8	3.000	9	5.3	0.426	0.031	8.5796	
1440 minute summer	9	3.001	10	8.0	0.566	0.039	2.9745	
1440 minute summer	10	1.003	11	28.8	0.820	0.112	3.8210	
1440 minute summer	11	1.004	17	34.5	0.797	0.063	9.6452	
1440 minute summer	12	4.000	13	8.9	0.426	0.021	17.0958	
1440 minute summer	13	4.001	14	8.6	0.376	0.030	9.1090	
1440 minute summer	14	4.002	15	7.6	0.278	0.012	4.7457	
1440 minute summer	15	4.003	16	7.8	0.318	0.025	3.4691	
1440 minute summer	16	4.004	17	7.8	0.175	0.020	4.3694	
1440 minute summer	17	1.005	18	41.4	0.462	0.136	7.0543	
1440 minute summer	18	1.006	19	41.1	0.470	0.109	4.6916	
1440 minute summer	19	1.007	20	43.8	0.430	0.127	11.1691	
1440 minute summer	20	1.008	21	47.2	0.504	0.154	6.9819	
1440 minute summer	21	1.009	23	55.5	0.197	0.079	4.0466	
1440 minute summer	22	5.000	23	-49.1	-0.174	-0.066	6.0099	
1440 minute summer	23	Hydro-Brake®	24	7.2				654.1

Results for 100 year +40% CC 1440 minute winter. 1680 minute analysis at 30 minute timestep. Mass balance: 99.63%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
1440 minute winter	1	1380	1.579	0.429	10.2	2.4881	0.0000	OK
1440 minute winter	2	1380	1.577	0.627	10.2	0.8977	0.0000	
1440 minute winter	3	1380	1.576	0.876	3.4	2.7580	0.0000	
1440 minute winter	4	1380	1.576	0.901	6.1	2.5580	0.0000	
1440 minute winter	5	1380	1.574	0.999	5.9	1.7650	0.0000	
1440 minute winter	6	1380	1.578	1.028	8.3	2.2093	0.0000	
1440 minute winter	7	1380	1.575	1.050	18.1	2.4667	0.0000	
1440 minute winter	8	1380	1.576	0.826	4.7	2.8247	0.0000	
1440 minute winter	9	1380	1.575	0.975	7.3	2.4011	0.0000	
1440 minute winter	10	1380	1.576	1.126	26.0	1.9903	0.0000	
1440 minute winter	11	1380	1.574	1.174	29.1	4.0277	0.0000	
1440 minute winter	12	1320	1.570	0.795	7.1	3.7021	0.0000	
1440 minute winter	13	1350	1.568	1.368	6.8	2.6722	0.0000	
1440 minute winter	14	1350	1.569	1.594	7.7	118.1609	0.0000	
1440 minute winter	15	1380	1.571	1.746	6.9	5.6024	0.0000	
1440 minute winter	16	1380	1.571	1.771	7.5	3.1302	0.0000	
1440 minute winter	17	1380	1.571	1.821	33.9	4.5716	0.0000	
1440 minute winter	18	1380	1.569	1.869	32.7	3.3023	0.0000	
1440 minute winter	19	1380	1.571	1.921	36.1	4.5657	0.0000	
1440 minute winter	20	1380	1.569	2.019	37.6	5.3405	0.0000	
1440 minute winter	21	1380	1.569	2.069	43.5	7.4182	0.0000	
1440 minute winter	22	1380	1.569	1.969	36.8	1048.5160	0.0000	
1440 minute winter	23	1380	1.570	2.220	44.5	3.9219	0.0000	
1440 minute winter	24	30	-0.750	0.000	7.5	0.0000	0.0000	

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
1440 minute winter	1	1.000	2	10.2	0.768	0.063	12.4514	662.5
1440 minute winter	2	1.001	7	10.6	1.086	0.022	2.4834	
1440 minute winter	3	2.000	4	3.3	0.293	0.015	2.5371	
1440 minute winter	4	2.001	5	5.9	0.405	0.025	9.1613	
1440 minute winter	5	2.002	6	7.2	0.337	0.033	2.6639	
1440 minute winter	6	2.003	7	6.7	0.292	0.031	2.6862	
1440 minute winter	7	1.002	10	18.7	0.524	0.073	5.7467	
1440 minute winter	8	3.000	9	4.9	0.377	0.029	8.5796	
1440 minute winter	9	3.001	10	7.3	0.528	0.036	2.9745	
1440 minute winter	10	1.003	11	24.7	0.775	0.096	3.8210	
1440 minute winter	11	1.004	17	29.4	0.830	0.053	9.6452	
1440 minute winter	12	4.000	13	6.4	0.403	0.015	17.0958	
1440 minute winter	13	4.001	14	6.0	0.368	0.021	9.1090	
1440 minute winter	14	4.002	15	4.1	0.292	0.006	4.7457	
1440 minute winter	15	4.003	16	7.5	0.324	0.024	3.4691	
1440 minute winter	16	4.004	17	6.8	0.178	0.018	4.3694	
1440 minute winter	17	1.005	18	32.7	0.475	0.107	7.0543	
1440 minute winter	18	1.006	19	34.0	0.503	0.091	4.6916	
1440 minute winter	19	1.007	20	35.0	0.450	0.102	11.1691	
1440 minute winter	20	1.008	21	37.0	0.467	0.120	6.9819	
1440 minute winter	21	1.009	23	44.5	0.255	0.063	4.0466	
1440 minute winter	22	5.000	23	-36.8	-0.131	-0.049	6.0099	
1440 minute winter	23	Hydro-Brake®	24	7.5				

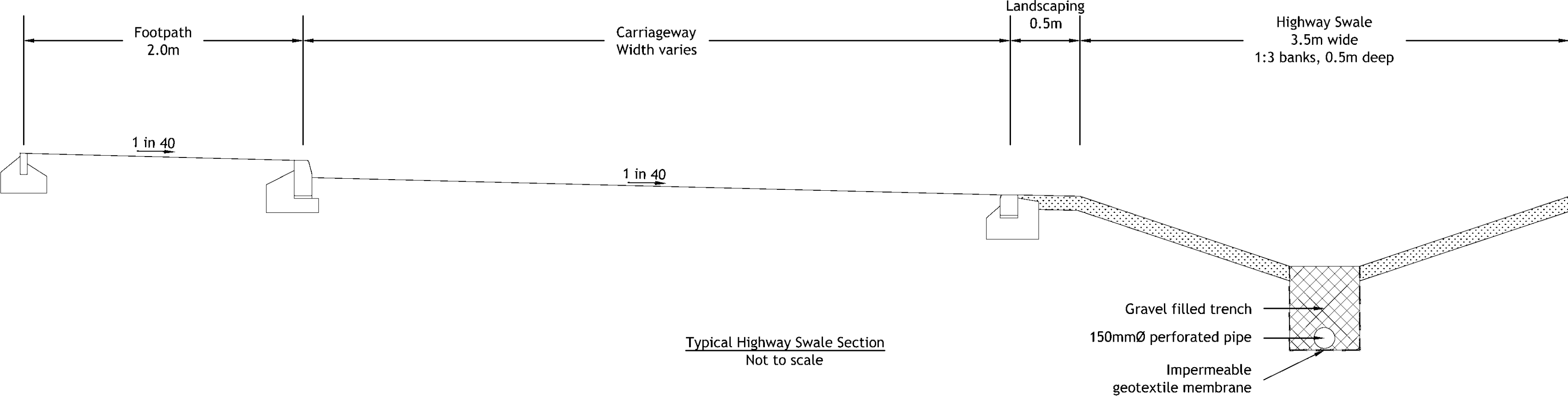
Appendix K

Proposed Drainage Strategy



Rayleen House

Orchard Villa



Typical Highway Swale Section
Not to scale

- NOTES**
- Contractors must check all dimensions on site. Only figured dimensions are to be worked from. Discrepancies must be reported to the Architect or Engineer before proceeding. © This drawing is copyright.
 - Reproduced from OS Sitemap © by permission of Ordnance Survey on behalf of The Controller of Her Majesty's Stationary Office. © Crown copyright 2008. All rights reserved. Licence number 100007126.
 - Until technical approval has been obtained from the relevant authorities, all drawings are issued as preliminary and not for construction. Should the Contractor commence site work prior to approval being given it is entirely at their own risk.
 - Woods Hardwick cannot accept liability for any discrepancies in terms of coordinates or any other information deciphered from dwgs.
 - The exact location and level of all existing sewers, drains and services to be confirmed on site prior to the commencement of any works.
 - All adoptable drainage to comply with Sewers for Adoption 6th Edition.

SAFETY, HEALTH AND ENVIRONMENTAL

In addition to the hazards, risks normally associated with the type of work detailed on this drawing, note the following significant risks and information.

Construction:

- Proximity of works to buried services unconfirmed - detailed underground survey required.

For information relating to end use, maintenance, demolition, see the health and safety file.

It is assumed that all works will be carried out by a competent Contractor, where appropriate, to an approved method statement.

KEY

- Site Boundary
- Proposed adoptable surface water sewer
- Proposed adoptable foul water sewer
- Proposed adoptable rising main
- Proposed headwall
- Proposed surface water sewer
- Proposed cellular storage
- Swale
- Embankment
- FFL XX.XXX Finished floor level
- F.L. Finished floor level
- Minimum 0.3m above existing ground level
- Flood zone 3 borderline in accordance with Environment Agency flood map for planning

Assumptions & design principles

Finished floor levels

Finish floor levels set above existing ground at a height based on South Holland District Council flood map "Residential peak depth district - Year Z115 1% Fluvial / 0.5% Tidal Event Probability" (2017).

Surface water drainage

- Surface water drainage to be adopted by Anglian Water under Section 104 Agreement.
- Surface water drainage systems designed to accommodate 100 year + 30% climate change storm events.
- Surface water strategy is in accordance with the FRA produced by Waterco Consultants, April 2017.
- Surface Water will drain via gravity to southern part of the site and outfall into a flow control chamber via an offline attenuation basin. Surface Water Sewer will be at a restricted rate of 7.0 l/s.
- Attenuation to be provided by above and below ground features.

Foul water drainage

- Foul water drainage to be adopted by Anglian Water under a Section 104 Agreement.
- Foul water drainage is to drain via gravity to a pumping station located at the southern part of the site. It is to be pumped to an existing foul water manhole to the southwest of the site.
- All proposed foul drainage levels are indicative until the location, size & level of the existing Anglian Water sewer have been confirmed.

E	Minimum finish floor levels revised in accordance with flood zone 3 map. Flood zone 3 borderline added.	CG	MDF	01/09/2020
D	Foul water connection note re-located.	CG	MDF	04/08/2020
C	Revised to suit flood map overlay.	CG	WD	31/07/2020
B	Finish Floor Levels added to Environment Agency requirements	CG	MDF	28/07/2020
A	Surface water drainage updated, highway swales and detail added.	WD	MDF	01/07/2020

REV	DESCRIPTION	DRN	CHD	DATE	
☐	PRELIMINARY	☐	INFORMATION	☐	TENDER
☐	CONSTRUCTION	☐	AS BUILT		

SCALE 1:500 @ A0 DATE FEBRUARY 2020

DRAWN MR CHK MDF

DRAWING NO. 18706-LEBC-5-SK002 REV E

TITLE HOME FARM, DEEPING ST. NICHOLAS, LINCOLNSHIRE

DETAILS PRELIMINARY DRAINAGE STRATEGY

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PLEASE CONSIDER THE ENVIRONMENT BEFORE PRINTING THIS DRAWING

0 5 10 15 20 30 40 50 60 70
SCALE 1:500

Appendix L

Anglain Water - Pre-Planning Assessment Report



Pre-Planning Assessment Report

Home Farm, Deeping St Nicholas,

InFlow Reference: PPE-0080956

Assessment Type: Used Water

Report published: 14/04/2020



Thank you for submitting a pre-planning enquiry.

This has been produced for Ashwood Homes Ltd.

Your reference number is **PPE-0080956**.

This report can be submitted as a drainage strategy for the development should it seek planning permission.

If you have any questions upon receipt of this report, you can submit a further question via InFlow. Alternatively, please contact the Planning & Capacity team on **0345 60 66 087**, Option 1 or email planningliaison@anglianwater.co.uk

Section 1 - Proposed development

The response within this report has been based on the following information which was submitted as part of your application:

List of planned developments	
Type of development	No. Of units
Dwellings	118

The anticipated residential build rate is:

Year	Y1	Y2	Y3
Build rate	39	39	40

Development type: Greenfield
Planning application status: Unknown
Site grid reference number: TF2171315571

The comments contained within this report relate to the public water mains and sewers indicated on our records.

Your attention is drawn to the disclaimer in the useful information section of this report.

Section 2 - Assets affected

Our records indicate that we have the following types of assets within or overlapping the boundary of your development site as listed in the table below.

Additionally, it is highly recommended that you carry out a thorough investigation of your proposed working area to establish whether any unmapped public or private sewers and lateral drains are in existence. We are unable to permit development either over or within the easement strip without our prior consent. The extent of the easement is provided in the table below. Please be aware that the existing water mains/public sewers should be located in highway or open space and not in private gardens. This is to ensure available access for any future maintenance and repair and this should be taken into consideration when planning your site layout.

Water and Used water easement information		
Asset type	Pipe size (mm)	Total easement required (m)
Water mains	101	4.50 m either side of the centre line

If it is not possible to avoid our assets then these may need to be diverted in accordance with Section 185 of the Water Industry Act (1991). You will need to make a formal application if you would like a diversion to be considered.

Due to the private sewer transfer in October 2011 many newly adopted public used water assets and their history are not indicated on our records. You also need to be aware that your development site may contain private water mains, drains or other assets not shown on our records. These are private assets and not the responsibility of Anglian Water but that of the landowner.

Section 3 - Water recycling services

In examining the used water system we assess the ability for your site to connect to the public sewerage network without causing a detriment to the operation of the system. We also assess the receiving water recycling centre and determine whether the water recycling centre can cope with the increased flow and effluent quality arising from your development.

Water recycling centre

The foul drainage from the proposed development is in the catchment of West Walton Water Recycling Centre.

Used water network

Our assessment has been based on development flows connecting to the nearest foul water sewer of the same size or greater pipe diameter to that required to drain the site. The infrastructure to convey foul water flows to the receiving sewerage network is assumed to be the responsibility of the developer. Conveyance to the connection point is considered as Onsite Work and includes all work carried out upstream from of the point of connection, including making the connection to our existing network. This connection point has been determined in reference to the calculated discharge flow and on this basis, a 150mm internal diameter pipe is required to drain the development site. The nearest practicable connection is to the 150mm diameter sewer at manhole 3502 in Haywain Drive at National Grid Reference NGR TF 21378 15501. Anglian water has assessed the impact of a pumped conveyance from the planned development to the public foul sewerage network and we can confirm that this connection is acceptable as the foul sewerage system, at present, has available capacity for your site. In line with Sewers for Adoption, the pumped discharge will need to connect via an intermediate manhole and at least 5 metres of an appropriately sized gravity sewer. The pump rate and configuration of the connection will be determined with your detailed design. You should submit this detail with your Section 106 new connection application. Please note that Anglian Water will request a suitably worded condition at planning application stage to ensure this strategy is implemented to mitigate the risk of flooding.

It is assumed that the developer will provide the necessary infrastructure to convey flows from the site to the network. Consequently, this report does not include any costs for the conveyance of flows.

Surface water disposal

You indicated on the Pre-Planning Application form that a connection to the public surface water sewer network is not required. Therefore a capacity assessment has not been made on the public surface water network.

As you may be aware, Anglian Water will consider the adoption of SuDs provided that they meet the criteria outline in our SuDs adoption manual. This can be found on our website. We will adopt features located in public open space that are designed and constructed, in conjunction with the Local Authority and Lead Local Flood Authority (LLFA), to the criteria within our SuDs adoption manual. Specifically, developers must be able to demonstrate:

1. Effective upstream source control,
2. Effective exceedance design, and
3. Effective maintenance schedule demonstrating that the assets can be maintained both now and in the future with adequate access.

If you wish to look at the adoption of any SuDs then an expression of interest form can be found on our website

The proposed method of surface water disposal is not relevant to Anglian Water; we suggest that you contact the relevant Local Authority, Lead Local Flood Authority, the Environment Agency or the Internal Drainage Board, as appropriate.

Trade Effluent

We note that you do not have any trade effluent requirements. Should this be required in the future you will need our written formal consent. This is in accordance with Section 118 of the Water Industry Act (1991).

Used Water Budget Costs

Your development site will be required to pay an infrastructure charge for each new property connecting to the public sewer that benefits from Full planning permission.

You will be required to pay an infrastructure charge upon connection for each new plot on your development site. The infrastructure charge are types of charges set out in Section 146(2) of the Water Industry Act 1991

The charge should be paid by anyone who wishes to build or develop a property and is payable upon request of connection.

Payment of the infrastructure charge must be made before premises are connected to the public sewer.

Infrastructure charge for water recycling:

£ 570.00

The total infrastructure charge payable for your site for water recycling is:

Infrastructure charge	Number of units	Total
£ 570.00	118	£ 67260

Infrastructure charges are raised on a standard basis of one charge per new connection (one for water and one for sewerage). However, if the new connection is to non- household premises, the fixed element is calculated according to the number and type of water fittings in the premises. This is called the "relevant multiplier" method of calculating the charge.

Details of the relevant multiplier for each fitting can be found at our website.

It has been assumed that the onsite used water network will be provided under Section 104 of the Water Industry Act

It is recommended that you also budget for connection costs.

Please note that we offer alternative types of connections depending on your needs and these costs are available at our website.

Section 4 - Map of Proposed Connection Points



Figure 1: Showing your used water point of connection

Section 5 - Useful information

Water Industry Act – Key used water sections

Section 98:

This provides you with the right to requisition a new public sewer. The new public sewer can be constructed by Anglian Water on your behalf. Alternatively, you can construct the sewer yourself under section 30 of the Anglian Water Authority Act 1977.

Section 102:

This provides you with the right to have an existing sewerage asset vested by us. It is your responsibility to bring the infrastructure to an adoptable condition ahead of the asset being vested.

Section 104:

This provides you with the right to have a design technically vetted and an agreement reached that will see us adopt your assets following their satisfactory construction and connection to the public sewer.

Section 106:

This provides you with the right to have your constructed sewer connected to the public sewer.

Section 185

This provides you with the right to have a public sewerage asset diverted.

Details on how to make a formal application for a new sewer, new connection or diversion are available on our website or via our Development Services team on **0345 60 66 087**.

Sustainable drainage systems

Many existing urban drainage systems can cause problems of flooding, pollution or damage to the environment and are not resilient to climate change in the long term. .

Our preferred method of surface water disposal is through the use of Sustainable Drainage Systems or SuDS.

SuDS are a range of techniques that aim to mimic the way surface water drains in natural systems within urban areas. For more information on SuDS, please visit our website

We recommend that you contact the Local Authority and Lead Local Flood Authority (LLFA) for your site to discuss your application.

Private sewer transfers

Sewers and lateral drains connected to the public sewer on the 1 July 2011 transferred into Water Company ownership on the 1 October 2011. This follows the implementation of the Floods and Water Management Act (FWMA). This included sewers and lateral drains that were subject to an existing Section 104 Adoption Agreement and those that were not. There were exemptions and the main non-transferable assets were as follows:

Surface water sewers and lateral drains that do not discharge to the public sewer, e.g. those that discharged to a watercourse.

Foul sewers and lateral drains that discharged to a privately owned sewage treatment/collection facility.

Pumping stations and rising mains will transfer between 1 October 2011 and 1 October 2016.

The implementation of Section 42 of the FWMA will ensure that future private sewers will not be created. It is anticipated that all new sewer applications will need to have an approved section 104 application ahead of a section 106 connection.

It is anticipated that all new sewer applications will need to have an approved Section104 application ahead of a Section 106 connection

Encroachment

Anglian Water operates a risk based approach to development encroaching close to our used water infrastructure. We assess the issue of encroachment if you are planning to build within 400 metres of a water recycling centre or, within 15 metres to 100 metres of a pumping station. We have more information available on our website

Locating our assets

Maps detailing the location of our water and used water infrastructure including both underground assets and above ground assets such as pumping stations and recycling centres are available from digdat

All requests from members of the public or non-statutory bodies for maps showing the location of our assets will be subject to an appropriate administrative charge.

We have more information on our website

Charging arrangements

Our charging arrangements and summary for this year's water and used water connection and infrastructure charges can be found on our website

Section 6 - Disclaimer

The information provided in this report is based on data currently held by Anglian Water Services Limited ('Anglian Water') or provided by a third party. Accordingly, the information in this report is provided with no guarantee of accuracy, timeliness, completeness and is without indemnity or warranty of any kind (express or implied).

This report should not be considered in isolation and does not nullify the need for the enquirer to make additional appropriate searches, inspections and enquiries. Anglian Water supports the plan led approach to sustainable development that is set out in the National Planning Policy Framework ('NPPF') and any infrastructure needs identified in this report must be considered in the context of current, adopted and/or emerging local plans. Where local plans are absent, silent or have expired these needs should be considered against the definition of sustainability holistically as set out in the NPPF.

Whilst the information in this report is based on the presumption that proposed development obtains planning permission, nothing in this report confirms that planning permission will be granted or that Anglian Water will be bound to carry out the works/proposals contained within this report.

No liability whatsoever, including liability for negligence is accepted by Anglian Water or its partners, employees or agents, for any error or omission, or for the results obtained from the use of this report and/or its content. Furthermore, in no event will any of those parties be liable to the applicant or any third party for any decision made or action taken as a result of reliance on this report.

This report is valid for the date printed and the enquirer is advised to resubmit their request for an up to date report should there be a delay in submitting any subsequent application for water supply/sewer connection(s).

Appendix M

Drainage Calculations - Foul Water

Design Settings

Frequency of use (kDU)	0.00	Minimum Velocity (m/s)	0.75
Flow per dwelling per day (l/day)	4000	Connection Type	Level Soffits
Domestic Flow (l/s/ha)	5.0	Minimum Backdrop Height (m)	0.200
Industrial Flow (l/s/ha)	5.0	Preferred Cover Depth (m)	1.200
Additional Flow (%)	0	Include Intermediate Ground	✓

Nodes

Name	Dwellings	Cover Level (m)	Manhole Type	Easting (m)	Northing (m)	Depth (m)
1	0	2.793		521340.288	315777.861	1.943
2	0	3.003		521405.973	315729.163	2.703
3	0	2.720		521400.453	315671.308	2.345
4	0	2.548		521423.556	315704.855	2.448
5	0	2.610		521424.887	315718.334	2.610
6	0	2.648		521424.281	315727.438	2.748
7	0	2.397		521481.969	315797.968	1.947
8	0	2.334		521447.648	315750.877	2.284
9	0	2.366		521445.987	315731.172	2.616
10	0	2.297		521463.186	315725.657	2.672
11	0	2.511		521502.038	315780.538	2.036
12	0	1.958		521566.820	315734.729	2.058
13	0	1.763		521542.349	315701.090	2.138
14	0	1.559		521527.397	315692.778	2.059
15	0	1.850		521513.553	315692.623	2.450
16	0	2.153		521498.311	315699.872	2.878
17	0	2.102		521484.054	315681.409	3.002
18	0	2.126		521470.901	315669.807	3.151
19	0	1.704		521451.485	315635.135	3.004
20		1.996		521439.226	315619.618	3.446

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)
1.000	1	2			0.850		0.550		150
1.001	2	6					0.400		
2.000	3	4			0.375		0.275		150
2.001	4	5					0.100		
2.002	5	6					0.075		
1.002	6	9					0.150		
3.000	7	8			0.450		0.400		150

Name	Pro Vel @ 1/3 Q (m/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Dwellings (ha)	Σ Units (ha)	Σ Add Inflow (ha)	Pro Depth (mm)	Pro Velocity (m/s)
1.000	0.000	0.717	12.7	0.0	1.793		0.000	0	0.0	0.0	0	0.000
1.001	0.000	1.294	22.9	0.0			0.000	0	0.0	0.0	0	0.000
2.000	0.000	0.719	12.7	0.0	2.195	2.298	0.000	0	0.0	0.0	0	0.000
2.001	0.000	0.752	13.3	0.0	2.298		0.000	0	0.0	0.0	0	0.000
2.002	0.000	0.793	14.0	0.0			0.000	0	0.0	0.0	0	0.000
1.002	0.000	0.722	12.8	0.0			0.000	0	0.0	0.0	0	0.000
3.000	0.000	0.725	12.8	0.0	1.797	2.134	0.000	0	0.0	0.0	0	0.000

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)
3.001	8	9					0.300		
1.003	9	10					0.125		
1.004	10	16					0.350		
4.000	11	12			0.475		0.575		150
4.001	12	13					0.275		
4.002	13	14					0.125		
4.003	14	15					0.100		
4.004	15	16					0.125		
1.005	16	17					0.175		
1.006	17	18					0.125		
1.007	18	19					0.275		
1.008	19	20					0.150		

Name	Pro Vel @ 1/3 Q (m/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Dwellings (ha)	Σ Units (ha)	Σ Add Inflow (ha)	Pro Depth (mm)	Pro Velocity (m/s)
3.001	0.000	1.080	19.1	0.0	2.134		0.000	0	0.0	0.0	0	0.000
1.003	0.000	0.728	12.9	0.0			0.000	0	0.0	0.0	0	0.000
1.004	0.000	0.784	13.9	0.0			0.000	0	0.0	0.0	0	0.000
4.000	0.000	0.745	13.2	0.0	1.886	1.908	0.000	0	0.0	0.0	0	0.000
4.001	0.000	0.711	12.6	0.0	1.908	1.988	0.000	0	0.0	0.0	0	0.000
4.002	0.000	0.748	13.2	0.0	1.988	1.909	0.000	0	0.0	0.0	0	0.000
4.003	0.000	0.743	13.1	0.0	1.909	2.300	0.000	0	0.0	0.0	0	0.000
4.004	0.000	0.753	13.3	0.0	2.300		0.000	0	0.0	0.0	0	0.000
1.005	0.000	0.758	13.4	0.0			0.000	0	0.0	0.0	0	0.000
1.006	0.000	0.738	13.0	0.0			0.000	0	0.0	0.0	0	0.000
1.007	0.000	0.728	12.9	0.0			0.000	0	0.0	0.0	0	0.000
1.008	0.000	0.762	13.5	0.0			0.000	0	0.0	0.0	0	0.000

