Residential Development at Cooney's Lane, Grange,

Cork

Engineering Services Report

Document Control Sheet

Project Number:	KC13		
Project Name:	Residential Development at Cooney's Lane, Grange, Cork		
Client:	Lyonshall Ltd.		
Document Title:	Engineering Services Report		
Document Reference:	KC13-RP-HLCE-CE-0001	Current Revision:	02

Issue History

Rev.	Date	By	Chk	Description
0	30.08.2024	NF	PB	Issued for Part 8 Planning
01	10.12.2024	TL	NF	Re-Issued for Part 8 Planning
02	20.03.2025	TL	NF	Re-Issued for Part 8 Planning

Review

Prepared By:	Niall FitzGerald
Date:	30th August 2024
Other Contributors:	Tomás Lynch
Checked by:	Pat Brady

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1.0 Introduction

Lyonshall Development Ltd. Intend to apply for Part 8 planning permission for residential development at Cooney's Lane, Grange, Cork.

This development is to be located on the site of a former domestic home at Cooneys' Lane, east of Bellevue Road, and south of Clifton Grange, Grange, Cork – see figure 1 below.

Figure 1 *Cooney's Lane, Grange, Cork*

The scope of the development is to comprise of the following:

The demolition of an existing dwelling and outbuildings and the construction of 24 residential units and all ancillary site development works.

The development will be served by 1 no. vehicular/pedestrian access (off Coone's Lane), car parking spaces and cycle parking spaces.

The development will also include landscaping, boundary treatments, excavation works above and below ground, bin storage, and all ancillary works necessary to facilitate the development.

See Figure 2 – Proposed Development

Figure 2 – Proposed Development

The following is an engineering report in support of a part 8 Planning Application for the above development.

This report addresses the following engineering issues:

Site services –

- Water Supply
- Foul Drainage
- Storm Drainage

2.0 Report

Site Services

a. Site Services -

i. Water Supply –

A review of the Uisce Eireann networks in the area has identified an existing water main along Cooney's Lane to the south of the subject site.

It is proposed that a new 100 dia. HDPE connection be made to this main and that the new 100mm dia. pipe will serve both the fire and water demand for the proposed development.

For details of the above, see Appendix A: Drg. KC13-V1-XXX-DR-HLCE-CE-0003 Rev 2 Proposed Water Main Layout

A pre connection enquiry (PCE) was made to Uisce Eireann on 18th June 2024 and this enquiry sought confirmation that the networks have the capacity to cater for the demand posed by the proposed development.

A confirmation of Feasibility (CoF) was received from Uisce Eireann on 19th November 2024, which stated favourably as follows:

Based upon the details provided we can advise the following regarding connecting to the networks;

- **Water Connection** - Feasible without infrastructure upgrade by Uisce Éireann

See Appendix D: Confirmation of Feasibility (CoF) – Water Supply

ii. Foul Drainage –

A review of the Uisce Eireann networks in the area has identified an existing foul sewer at Clifton Grange Housing estate to the north of the subject site.

It is proposed that a new connection be made to this sewer to accommodate the development.

All foul generated from the development will be collected via a gravity drainage system which will discharge to the above mentioned Uisce Eireann Network.

For details of the above, see Appendix B: No. KC13-V1-XXX-DR-HLCE-CE-002 Rev 2 Proposed Foul Drainage Layout

A pre-connection enquiry (PCE) was made to Uisce Eireann on 30TH August 2024, in which the above strategy was proposed. This enquiry included details of the final outfall loadings from the development to the Uisce Eireann Network.

A confirmation of Feasibility (CoF) was received from Uisce Eireann on 19th November 2024, which stated favourably as follows:

Based upon the details provided we can advise the following regarding connecting to the networks;

- **Wastewater Connection** - Feasible without infrastructure upgrade by Uisce Éireann

See Appendix D: Confirmation of Feasibility (CoF) – Waste Water

iii. Surface Water Network –

A review of public services in the area has found that there is an existing surface water drain at Clifton Grange Housing Estate to the north of the subject site.

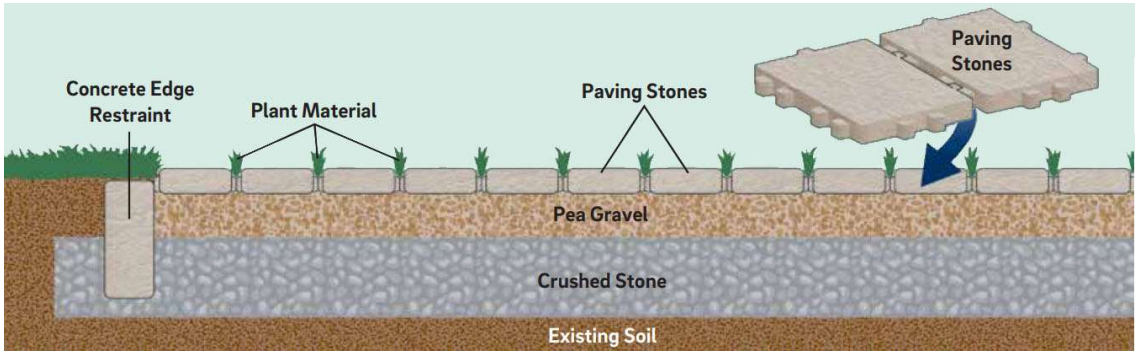
It is proposed that all storm water generated from the site be collected by a gravity storm drainage system which will discharge to the above mentioned Cork City Council Network.

The above Storm water will be collected via a series of SuDS features which will control the rate of storm water flow from the site to the watercourse to 2 litres/sec, this to reflect the pre-development greenfield run-off from the site. Such SuDS features will include as follows:

i. <u>Green roof technology on the Flat roof of the Apartment Block to the South of the Site</u>

Green roof technology is proposed to be utilized on flat roof areas of the southern apartment block to enable a reduction in both the volume and rate of runoff from the proposed roof area.

ii. Permeable paving



Permeable paving technology is proposed for the courtyard/car parking area within the site. This permeable paving will receive the overflow from the greenroof and the surface water runoff from the site entrance and site roofs not utilizing green roof technology.

This permeable paving is proposed in order to reduce the rate and volume of runoff from the catchment areas that will discharge to the attenuation tank within the site.

iii. RC Attenutation Tanks

As previously stated, there area a number of SuDS features to be adopted throughout the site, these acting in sequence to attenuate the storm water generated within the development.

However, based on the infiltration rate within the site, these features alone are not sufficient to attenuate the stormwater such that the allowable discharge rate from the site can be achieved. In light of this, it is proposed to provide a concrete storm water attenuation tank as the last storm water control measure.

This tank is to be located at the east of the site and is sized at 91 m^3, such that the discharge rate of 2 litres/second can be achieved.

The above storm water drainage system was designed using Autodesk InfoDrainage Software, which sized the different SuDS features and resulted in the controlled run off rate of 2 litres/sec from the site.

See Appendix B:

- Drg. No. KC13-V1-XXX-DR-HLCE-CE-001 Rev 2 Proposed Storm Drainage Layout
- Extract from Autodesk Info Drainage Software

iv. O&M Procedures

The attenuation tank has been located under a proposed green area on the north east side of the site approximately 55 metres from the site entrance. The attenuation tank will be a proprietary precast concrete tank/RC tank serviced by an inflow manhole. This manhole will have a silt trap chamber to remove sediment and smaller debris from the storm system prior to its entry into the attenuation tank. The silt trap manhole should be periodically inspected and cleaned as necessary. Additionally, inspections are to take place after significant rainfall events.

An outlet manhole is placed downstream of the tank and is fitted with a hydrobrake. This manhole must be constructed as a hydrobrake manhole with a baffle / weir in the direction of the flow. An inspection manhole with access into the tank is to be placed directly above the tank's location. Additionally, inspections are to take place after significant rainfall events.

It is recommended that the Attenuation tank is periodically inspected to check for silt / sediment build up and debris in the system. The tank should be cleaned when necessary following inspections by jet washing the tank into the outlet manhole.

The outlet manhole will have a hydrobrake flow control system which also requires periodic inspections to ensure that the intake is not blocked and free from sediment or debris build up. Normally little maintenance is required with a hydrobrake as it has no moving parts. The hydrobrake has a pivoting bypass door should it get blocked and cause surcharging or flooding of the system upstream and allow the system to be drained and access to the blockage for maintenance.

During Maintenance / cleaning of the Attenuation tank, the residents will be notified in advance of the operation to ensure the Jet-Vac vehicle can park as close as possible to the attenuation tanks to carry out the necessary maintenance.

APPENDIX A – WATER SUPPLY

Drg. No. KC13-V1-XXX-DR-HLCE-0003 Rev 2 Proposed water supply layout Plan

GENERAL NOTES:

1.) WATERMAIN TO BE 100Ø FOR MAIN CIRCULATION ROUTE, BRANCH MAINS TO PHASED DEVELOPMENTS TO BE 100Ø ALL SERVICE CONNECTIONS TO INDIVIDUAL UNTS TO BE 32mmØ UNLESS NOTED OTHERWISE
ALL WATERMAIN LINES TO BE CLASS C 10 BAR PRESSURE.
WATERMAIN TO BE LAID A MINIMUM OF 3m FROM PROPOSED STRUCTURE

2.) EACH PREMISE SHALL HAVE :
- AN INDIVIDUAL WATER SUPPLY, TAKEN FROM A MANIFOLD BOX.
- THE MANIFOLD BOX SHALL BE LOCATED ON THE FOOTPATH OUTSIDE THE BUILDING AS CLOSE TO PROPERTY BOUNDARY AS POSSIBLE.
INDIVIDUAL WATER METERS ARE REQUIRED FOR EACH INDIVIDUAL PREMISE.

3.) THE DEVELOPER SHALL MAKE PROVISION FOR ANY REDUNDANT EXISTING WATER SERVICES CONNECTIONS, ALL REDUNDANT EXISTING WATER SERVICES CONNECTIONS SHALL BE TRACED BACK TO THE PUBLIC MAIN BY THE DEVELOPER OR IRISH WATER THROUGH THE CONNECTION AGREEMENT AND SHALL BE BLANKED OFF AT THE DEVELOPERS EXPENSE.

4.) ALL FIRE HYDRANTS WILL BE ACCESSIBLE IN AN EMERGENCY, REFER TO SECTION 3.5 OF WATER CODE OF PRACTICE.

5.) ALL PLANTING OF NEW TREES/SHRUBS ADJACENT TO THE WATERMAIN SHALL COMPLY WITH IRISH WATER STANDARD DETAIL STD-W-12A.

6.) THRUST BLOCKS TO BE PROVIDED ON WATERMAINS AT DEAD ENDS, TEES, BENDS & AT BOTH SIDES OF A SLUICE VALVE CHAMBER, ALL DETAILS TO CONFORM WITH IRISH WATER STANDARD DETAILS DOCUMENT No IW-CDS-5020, ALL INCLUDED WITH THE SPECIFICATIONS DOCUMENTS.

7) ALL WATERMAIN PIPE LOCATIONS ARE INDICATIVE ONLY. ALL SEPERATION DISTANCES FOR PIPEWORK LOCATIONS ARE TO BE AS PER IW STANDARD DETAIL STD-W-11, 12 AND 12A.

NOTE A MINIMUM SEPERATION DISTANCE IN RELATION TO BUILDING FOUNDATIONS OF 3M APPLIES IN ALL CIRCUMSTANCES. PIPEWORK WILL BE CONCRETE ENCASED AND PROTECTED IN ALL LOCATIONS WHICH THIS SEPERATION DISTANCE CANNOT BE ACIEVED.

PIPE COVER CHART: WITHOUT CONCRETE ENCASEMENT	
LOCATION:	MIN.COVER.
SEWERS IN ROAD	1200
SEWERS IN OPEN SPACES	-
NOT ADJACENT TO ROADS	900
SEWERS IN GARDENS	600
WATERMAINS ALL LOCATIONS	900
WATER SERVICES ALL LOCATONS	600
ELEC/ESB CABLE DUCTS IN ROADWAY	900
ELEC/ESB CABLE DUCTS IN FOOTPATHS	500
NATURAL GAS MAINS IN ROADWAYS	800
NATURAL GAS MAINS IN FOOTPATHS	600
TELECOM DUCTS IN ROADWAYS	750
TELECOM DUCTS IN FOOTPATHS	350
CABLE TV DUCTS IN ROADS & FOOTPATHS	450

ALL WATER-SUPPLY DETAILS & LAYOUT ARE TO COMPLY WITH AND BE ADOPTED FROM THE IRISH WATER - CONNECTION AND DEVELOPER SERVICES DOCUMENT FOR WATER INFRASTRUCTURE STANDARD DETAILS. REF TO IRISH WATER DOCUMENT No IW-CDS-5020 AND CODE OF PRACTICE DOCUMENT IW-CDS-5020

NOTE : ALL TREES LOCATED LOCATED IN CLOSE PROXIMITY TO THE LINE OF THE WATERMAIN ARE TO HAVE ROOT BARRIER PROTECTION TO MITIGATE AGAINST ROOT INTRUSION. SEPERATION DISTANCES VARY DEPENDANT ON SPEICIES. REFER TO IRISH WATER DOCUMENT No IW-CDS-5020 AND CODE OF PRACTICE DOCUMENT IW-CDS-5020 FOR DETAILS

PROPOSED WATER SUPPLY LAYOUT PLAN

SCALE 1:200

LEGEND

- SITE BOUNDARY
- M — NEW BULK METER
- AV — NEW AIR VALVE
- SV — NEW SLUICE VALVE
- FH H — NEW HYDRANT
- TB — NEW THRUST BLOCK
- EXISTING FIREMAIN
- NEW FIREMAIN

REV	BY	CKD.	DATE	DESCRIPTION
0	KL	NF	30.08.24	ISSUED FOR PART 8 PLANNING APPLICATION
1	KL	NF	11.12.24	RE-ISSUED FOR PART 8 PLANNING
2	KL	NF	19.03.25	RE-ISSUED FOR PART 8 PLANNING

RText (RText)

PROJECT
RESIDENTIAL DEVELOPMENT AT COONEYS LANE, GRANGE CORK

DRG. TITLE
PROPOSED WATERSUPPLY LAYOUT

SCALE	DRAWN BY	CHECKED BY	APPROVED BY
AS SHOWN (@ A1)	KL	NF	NF

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DWG: KC13-V1-XXX-DR-HLCE-CE-0003

HL PROJECT REF.	STATUS	REVISION
KC13	P3	2

APPENDIX B – Foul Drainage

Drg. No. KC13-XXX-DR-HLCE-CE-0002 Rev 2 Proposed Foul Layout Plan

GENERAL NOTES:

ALL STORM & FOUL SEWER PIPES TO BE uPVC & COMPLY WITH THE PROVISIONS IS EN 1401 2009/2012. PIPES TO BE APPLICATION AREA CODE 'UD' STIFFNESS CLASS 8kN/m² (SN8), WITH A JETTING REISISTANCE OF 2600 psi (180 Bar).
ALL PIPES TO BE A MINIMUM DISTANCE OF 1m (TO FACE) FROM ROAD KERB.
ALL MANHOLES TO BE A MINIMUM DISTANCE OF 0.5m FROM THE KERB.
LOCATION OF ALL STORM DRAINAGE IS INDICATIVE / REPRESENTATIVE ONLY.
EXACT SET OUT OF FOUL DRAINAGE TO BE LOCATED ON SITE IN ACCORDANCE WITH IRISH WATER DETAILS.

WATER TEST:
FOUL & STORM SEWERS SHOULD BE TESTED FOR A MIN OF 30 MINUTES, UNDER A HEAD OF NOT LESS THAN 1M OR GREATER THAN 2.5M OVER THE HIGHEST POINT ON THE LINE UNDER TEST; THE PIPELINE SHOULD 'STAND' FOR A PERIOD 2 HOURS AFTER FILLING AND TOPPED UP AS NECESSARY BEFORE COMMENCING THE TEST. THE MAXIMUM AMOUNT OF WATER LOSS SHOULD BE IN ACCORDANCE WITH LOCAL AUTHORITY GUIDELINES.

AN AIR TEST MAY BE CARRIED OUT IN LIEU OF THE ABOVE AND IN ACCORDANCE WITH LOCAL AUTHORITY GUIDELINES

AT TIME OF COMPLETION THE DEVELOPER SHOULD ENSURE THAT ALL DRAINS WITHIN THE SITE ARE CLEAN AND FREE OF OBSTRUCTIONS A CONDITION SURVEY SHOULD ALSO BE CARRIED OUT VIA CCTV FOOTAGE AND PRESENTED TO THE LOCAL AUTHORITY PRIOR TO SITE HANDOVER.

ALL EXISTING MANHOLE AND GULLY COVERS LOCATED IN AREAS WHERE THE SURFACE IS BEING REPLACED, SHOULD BE TAKEN UP AND RE-BEDDED IN A C40/50 CONCRETE SURROUND 150mm WIDE x 150mm DEEP AND SET LEVEL WITH NEW SURFACES.

SURFACE RELAYED TO MATCH EXISTING FALLS & SITE LEVELS. ADJUST FALLS LOCALLY TO ASSIST RUN-OFF TO GULLIES WHERE POSSIBLE.

PIPE COVER CHART: WITHOUT CONCRETE ENCASEMENT	
LOCATION:	MIN.COVER.
SEWERS IN ROAD	1200
SEWERS IN OPEN SPACES	-
NOT ADJACENT TO ROADS	900
SEWERS IN GARDENS	600
WATERMAINS ALL LOCATIONS	900
WATER SERVICES ALL LOCATONS	600
ELEC/ESB CABLE DUCTS IN ROADWAY	900
ELEC/ESB CABLE DUCTS IN FOOTPATHS	500
NATURAL GAS MAINS IN ROADWAYS	800
NATURAL GAS MAINS IN FOOTPATHS	600
TELECOM DUCTS IN ROADWAYS	750
TELECOM DUCTS IN FOOTPATHS	350
CABLE TV DUCTS IN ROADS & FOOTPATHS	450

ALL WASTERWATER DETAILS ARE TO COMPLY WITH AND BE ADOPTED FROM THE IRISH WATER - CONNECTION AND DEVELOPER SERVICES DOCUMENT FOR WASTEWATER INFRASTRUCTURE STANDARD DETAILS. REF TO IRISH WATER DOCUMENT No IW-CDS-5030-01
CONTRACTOR IS ALSO TO REFER TO THE CODE OF PRACTICE FOR WASTEWATER INFRASTRUCTURE DOCUMENT. CONNECTIONS AND DEVELOPER SERVICES. DESIGN AND CONSTRUCTION REQUIREMENTS FOR SELF LAY DEVELOPMENTS DOCUMENT IW-CDS-5030-03

PROPOSED FOUL DRAINAGE LAYOUT PLAN

SCALE 1:200

LEGEND

- SITE BOUNDARY
- F1 FOUL MANHOLE
- EXISTING FOUL SEWER
- NEW FOUL SEWER

REV	BY	CKD.	DATE	DESCRIPTION
0	KL	NF	30.08.24	ISSUED FOR PART 8 PLANNING APPLICATION
1	KL	NF	11.12.24	RE-ISSUED FOR PART 8 PLANNING
2	KL	NF	19.03.25	RE-ISSUED FOR PART 8 PLANNING

RText (RText)

PROJECT
RESIDENTIAL DEVELOPMENT AT COONEYS LANE, GRANGE CORK

DRG. TITLE
PROPOSED FOUL DRAINAGE LAYOUT

SCALE	DRAWN BY	CHECKED BY	APPROVED BY
AS SHOWN (@ A1)	KL	NF	NF

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DWG:	HL PROJECT REF.	STATUS	REVISION
KC13-V1-XXX-DR-HLCE-CE-0002	KC13	P3	2

APPENDIX C – Storm Water Drainage

Drg. No. KC13-V1-XXX-DR-HLCE-CE-0001 Rev. 2 Proposed Storm Drainage Layout Plan

PROPOSED STORM DRAINAGE LAYOUT PLAN

SCALE 1:200

GENERAL NOTES

ALL STORM SEWER PIPES TO BE uPVC & COMPLY WITH THE PROVISIONS IS EN 1401 2009/2012. PIPES TO BE APPLICATION AREA CODE 'UD' STIFFNESS CLASS 8kN/m² (SN8), WITH A JETTING REISISTANCE OF 2600 psi (180 Bar).

WATER TEST:
FOUL & STORM SEWERS SHOULD BE TESTED FOR A MIN OF 30 MINUTES, UNDER A HEAD OF NOT LESS THAN 1M OR GREATER THAN 2.5M
OVER THE HIGEST POINT ON THE LINE UNDER TEST; THE PIPELINE SHOULD 'STAND' FOR A PERIOD 2 HOURS AFTER FILLING AND TOPPED UP AS NECESSARY BEFORE COMMENCING THE TEST.
THE MAXIMUM AMOUNT OF WATER LOSS SHOULD BE IN ACCORDANCE WITH LOCAL AUTHORITY GUIDLINES

AN AIR TEST MAY BE CARRIED OUT IN LIEU OF THE ABOVE AND IN ACCORDANCE WITH LOCAL AUTHORITY GUIDLINES

AT TIME OF COMPLETION THE DEVELOPER SHOULD ENSURE THAT ALL DRAINS WITHIN THE SITE ARE CLEAN AND FREE OF OBSTRUCTIONS

LOCATION OF ALL STORM DRAINAGE ON THIS PLAN IS INDICATIVE / REPRESENTATIVE ONLY.

A CONDITION SURVEY SHOULd ALSO BE CARRIED OUT VIA CCTV FOTTAGE AND PRESENTED TO THE LOCAL AUTHORITY PRIOR TO SITE HANDOVER

ALL EXISTING MANHOLE AND GULLY COVERS LOCATED IN AREAS WHERE THE SURFACE IS BEING REPLACED, SHOULD BE TAKEN
UP AND RE-BEDDED IN A C40/50 CONCRETE SURROUND 150mm WIDE x 150mm DEEP AND SET LEVEL WITH NEW SURFACES.

EXISTING SURROUNDING SURFACE TO BE REPLACED TO MATCH EXISTING FALLS & SITE LEVELS. ADJUST FALLS LOCALLY TO ASSIST RUN-OFF TO GULLIES WHERE POSSIBLE.

ALL BUILDING FLAT ROOFS ARE TO BE EXTENSIVE GREEN ROOFS.

PIPE COVER CHART: WITHOUT CONCRETE ENCASEMENT	
LOCATION:	MIN.COVER.
SEWERS IN ROAD	1200
SEWERS IN OPEN SPACES	-
NOT ADJACENT TO ROADS	900
SEWERS IN GARDENS	600
WATERMAINS ALL LOCATIONS	900
WATER SERVICES ALL LOCATONS	600
ELEC/ESB CABLE DUCTS IN ROADWAY	900
ELEC/ESB CABLE DUCTS IN FOOTPATHS	500
NATURAL GAS MAINS IN ROADWAYS	800
NATURAL GAS MAINS IN FOOTPATHS	600
TELECOM DUCTS IN ROADWAYS	750
TELECOM DUCTS IN FOOTPATHS	350
CABLE TV DUCTS IN ROADS & FOOTPATHS	450

LEGEND

- SITE BOUNDARY
- S1 STORM MANHOLE
- EXISTING STORM SEWER
- NEW STORM SEWER
- GREEN ROOF AREA
- PERMEABLE PAVING AREA
- CONCRETE ATTENUTATION TANK

REV	BY	CKD.	DATE	DESCRIPTION
0	KL	NF	30.08.24	ISSUED FOR PART 8 PLANNING APPLICATION
1	KL	NF	11.12.24	RE-ISSUED FOR PART 8 PLANNING
2	KL	NF	19.03.25	RE-ISSUED FOR PART 8 PLANNING

RText (RText)

PROJECT
RESIDENTIAL DEVELOPMENT AT COONEYS LANE, GRANGE CORK

DRG. TITLE
PROPOSED STORM DRAINAGE LAYOUT

SCALE	DRAWN BY	CHECKED BY	APPROVED BY
AS SHOWN (@ A1)	KL	NF	NF

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DWG:	KC13-V1-XXX-DR-HLCE-CE-0001		
HL PROJECT REF.	STATUS	REVISION
KC13	P3	2

Infodrainage Calculations –

- Autodesk Info Drainage Output for 1 in 100 year storm event

COONEYS LANE DEVELOPMENT:	Date: 29/08/2024		
	Designed by: KL	Checked by: KC	Approved By: NF
Report Details: Type: Stormwater Controls Storm Phase: Phase	Company Address:		

Horganlynch

Tank

Type : Tank

Dimensions

Exceedance Elevation (m)	70.500
Depth (m)	1.400
Base Elevation (m)	69.100
Freeboard (mm)	0
Initial Depth (m)	0.000
Porosity (%)	100
Average Slope (1:x)	0.00
Total Volume (m³)	91.100

Depth (m)	Area (m²)	Volume (m³)
0.000	70.00	36.731
1.300	70.00	36.731

Inlets

Inlet (1)

Inlet Type	Point Inflow
Incoming Item(s)	P12
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

Outlet

Outgoing Connection	P14
Outlet Type	Free Discharge

Advanced

Perimeter	Circular
Length (m)	12.967

COONEYS LANE DEVELOPMENT:	Date: 29/08/2024		
	Designed by: KL	Checked by: KC	Approved By: NF
Report Details: Type: Stormwater Controls Storm Phase: Phase	Company Address:		

Horganlynch

Porous Paving

Type : Porous Paving

Dimensions

Exceedance Elevation (m)	71.300
Depth (m)	0.750
Base Elevation (m)	70.550
Paving Layer Depth (mm)	100
Membrane Percolation (m/hr)	2.0
Porosity (%)	30
Length (m)	29.624
Long. Slope (1:x)	20.00
Width (m)	13.339
Total Volume (m^3)	77.055

Inlets

Inlet

Inlet Type	Lateral Inflow
Incoming Item(s)	CA3
Bypass Destination	(None)
Capacity Type	No Restriction

Inlet (1)

Inlet Type	Lateral Inflow
Incoming Item(s)	CA4
Bypass Destination	(None)
Capacity Type	No Restriction

Inlet (2)

Inlet Type	Lateral Inflow
Incoming Item(s)	P3
Bypass Destination	(None)
Capacity Type	No Restriction

Inlet (5)

Inlet Type	Lateral Inflow
Incoming Item(s)	CA7
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

Outlet

Outgoing Connection	P13
Outlet Type	Free Discharge

Advanced

Base Infiltration Rate (m/hr)	0.0
Side Infiltration Rate (m/hr)	0.0
Safety Factor	2.0
Conductivity (m/hr)	700.0

COONEYS LANE DEVELOPMENT:	Date: 29/08/2024		
	Designed by: KL	Checked by: KC	Approved By: NF
Report Details: Type: Connections Storm Phase: Phase	Company Address:		

Name	Length (m)	Connection Type	Slope (1:x)	Manning's n	Colebrook-White Roughness (mm)	Diameter / Base Width (mm)	Upstream Cover Elevation (m)	Upstream Invert Elevation (m)
P1	4.664	Pipe	46.637		0.6	225	73.400	72.000
P2	15.012	Pipe	37.530		0.6	225	73.300	71.900
P5	10.220	Pipe	0.000		0.6	300	70.500	69.100
P6	39.110	Pipe	78.220		0.6	225	70.500	69.100
P7	9.380	Pipe	11.036		0.6	225	70.000	68.600
P3	2.477	Pipe	0.000		0.6	150	72.900	72.200
P10	10.519	Pipe	140.254		0.6	225	71.300	70.500
P11	8.823	Pipe	12.169		0.6	225	71.025	70.425
P12	6.189	Pipe	10.315		0.6	300	70.500	69.700
P13	7.687	Pipe	153.745		0.6	225	72.781	70.550
P14	8.132	Pipe	0.000		0.6	300	70.500	69.100

Name	Downstream Cover Elevation (m)	Downstream Invert Elevation (m)	Part Family	Lock	Flow Restriction (L/s)	Culvert Type	Culvert Entrance
P1	73.300	71.900		None		(None)	(None)
P2	72.900	71.500		Elevations		(None)	(None)
P5	70.500	69.100		None		(None)	(None)
P6	70.000	68.600		None	2.2	(None)	(None)
P7	68.600	67.750		None		(None)	(None)
P3	72.781	72.200		Elevations		(None)	(None)
P10	71.025	70.425		None		(None)	(None)
P11	70.500	69.700		None		(None)	(None)
P12	70.500	69.100		None		(None)	(None)
P13	71.300	70.500		None		(None)	(None)
P14	70.500	69.100		None		(None)	(None)

COONEYS LANE DEVELOPMENT:	Date: 29/08/2024		
	Designed by: KL	Checked by: KC	Approved By: NF
Report Details: Type: Inflow Summary Storm Phase: Phase	Company Address:		

Horganlynch

Inflow Label	Connected To	Flow (L/s)	Runoff Method	Area (ha)	Percentage Impervious (%)	Urban Creep (%)	Adjusted Percentage Impervious (%)	Area Analyzed (ha)
CA1	MH2		Time of Concentration	0.008	100	0	100	0.008
CA2	MH3		Time of Concentration	0.005	100	0	100	0.005
CA3	Porous Paving		Time of Concentration	0.012	100	0	100	0.012
CA4	Porous Paving		Time of Concentration	0.021	100	0	100	0.021
CA5	MH1		Time of Concentration	0.003	100	0	100	0.003
CA6	MH10		Time of Concentration	0.014	100	0	100	0.014
CA7	Porous Paving		Time of Concentration	0.050	100	0	100	0.050
CA10	MH2		Time of Concentration	0.018	100	0	100	0.018
Catchment Area	MH11		Time of Concentration	0.007	100	0	100	0.007
Catchment Area (1)	MH13		Time of Concentration	0.006	100	0	100	0.006
Green Roof	MH3		Green Roof	0.019		0		0.019
TOTAL		**0.0**		**0.164**				**0.164**

COONEYS LANE DEVELOPMENT:	Date: 29/08/2024			Horganlynch
	Designed by: KL	Checked by: KC	Approved By: NF	
Report Details: Type: Network Design Criteria Storm Phase: Phase	Company Address:			

Flow Options

Peak Flow Calculation	(UK) Modified Rational Method
Min. Time of Entry (mins)	5
Max. Travel Time (mins)	30

Pipe Options

Lock Slope Options	None
Design Options	Minimize Excavation
Design Level	Level Crowns
Min. Cover Depth (m)	1.200
Min. Slope (1:x)	500.00
Max. Slope (1:x)	40.00
Min. Velocity (m/s)	1.0
Max. Velocity (m/s)	3.0
Use Flow Restriction	☐
Reduce Channel Depths	☐

Pipe Size Library

Default

Add. Increment (mm)	75
Max. Diameter (mm)	0

Diameter (mm)	Min. Slope (1:x)	Max. Slope (1:x)
100	0.00	0.00
150	0.00	0.00

Manhole Options

Apply Offset	☐

Manhole Size Library

Default

Diameter / Width

Connection (mm)	Diameter / Length (m)	Width (m)
0	1.200	0.000
375	1.350	0.000
500	1.500	0.000
750	1.800	0.000

Additional Sizing

Connection (mm)	900
Diameter / Length (m)	0.900
Width (m)	0.000

Depth

Depth (m)	Diameter / Length (m)	Width (m)
0.000	1.050	0.000
1.500	1.200	0.000

Access

Depth (m)	Ladder Protrusion (mm)
0.000	130
3.000	230

Benching Requirements

Landing Width (mm)	500
Benching Width (mm)	225

COONEYS LANE DEVELOPMENT:	Date: 29/08/2024		
	Designed by: KL	Checked by: KC	Approved By: NF
Report Title: Rainfall Analysis Criteria	Company Address:		

Runoff Type	Dynamic
Output Interval (mins)	1
Time Step	Shortest
Urban Creep	Apply Global Value
Urban Creep Global Value (%)	0
Junction Flood Risk Margin (mm)	100
Perform No Discharge Analysis	☐

COONEYS LANE DEVELOPMENT:	Date: 29/08/2024		
	Designed by: KL	Checked by: KC	Approved By: NF
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address:		

Horganlynch

Critical Storm Per Item: Rank By: Max. Flooded Volume

Stormwater Control	Storm Event	Max. US Elevation (m)	Max. DS Elevation (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
Porous Paving	FSR: 100 years: +20 %: 15 mins: Summer	72.137	70.643	0.106	0.093	48.4	14.836	0.000	0.000	12.1	10.624	80.747	OK
Tank	FSR: 100 years: +20 %: 15 mins: Summer	69.288	69.288	0.188	0.188	20.9	13.164	0.000	0.000	3.4	2.538	85.550	OK

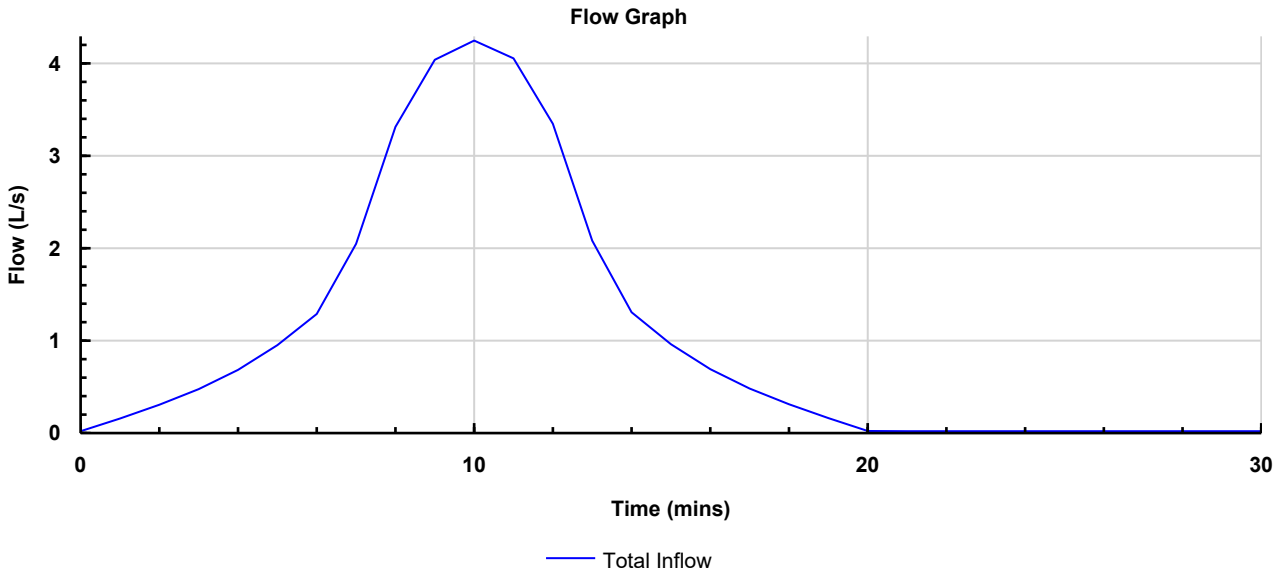
CA1
Critical Storm: FSR: 100 years: Increase Rainfall (%): +20: 15 mins: Summer

Type : Catchment Area

Inflow

Max. Inflow (L/s)	4.2
Total Inflow Volume (m³)	1.840

Graphs



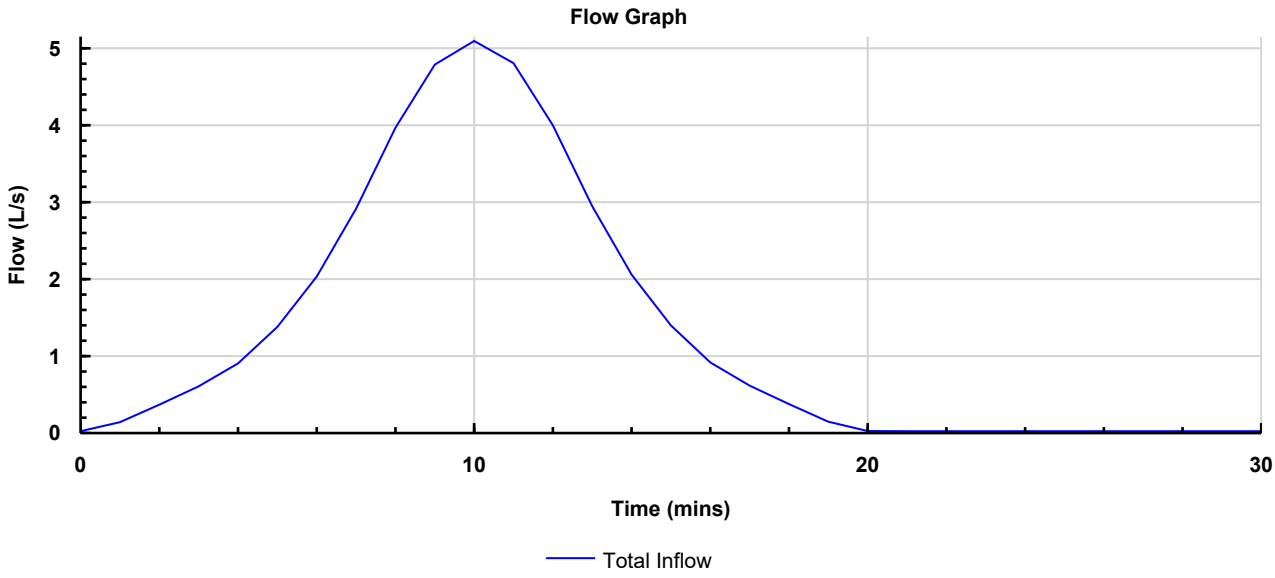
CA3
Critical Storm: FSR: 100 years: Increase Rainfall (%): +20: 15 mins: Winter

Type : Catchment Area

Inflow

Max. Inflow (L/s)	5.1
Total Inflow Volume (m³)	2.352

Graphs



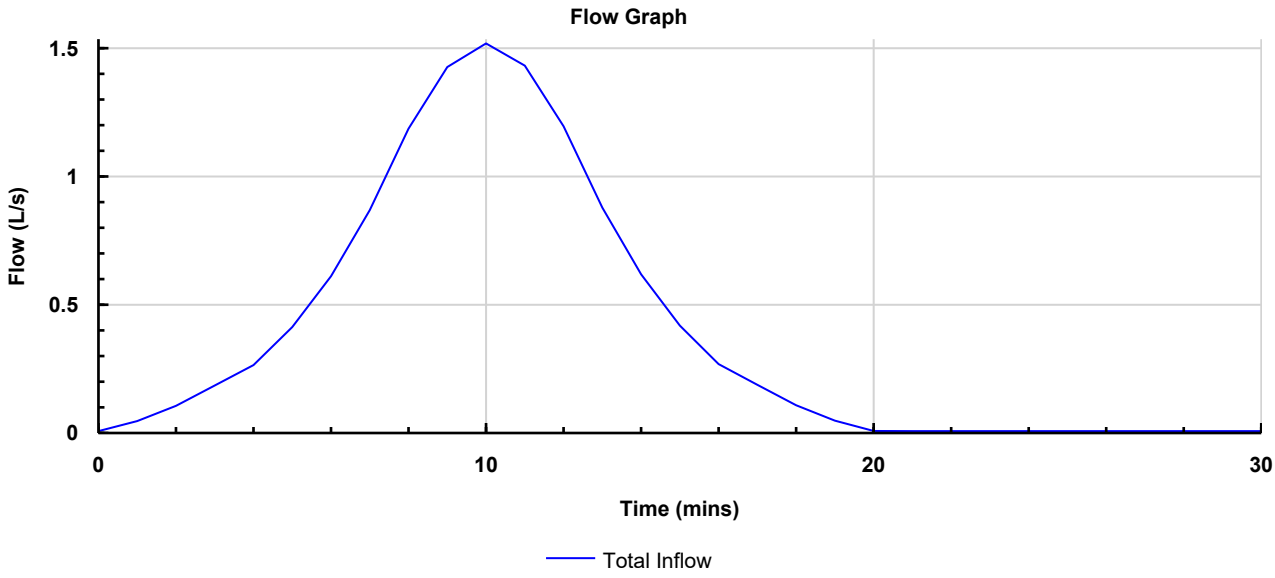
CA5
Critical Storm: FSR: 100 years: Increase Rainfall (%): +20: 15 mins: Winter

Type : Catchment Area

Inflow

Max. Inflow (L/s)	1.5
Total Inflow Volume (m³)	0.702

Graphs



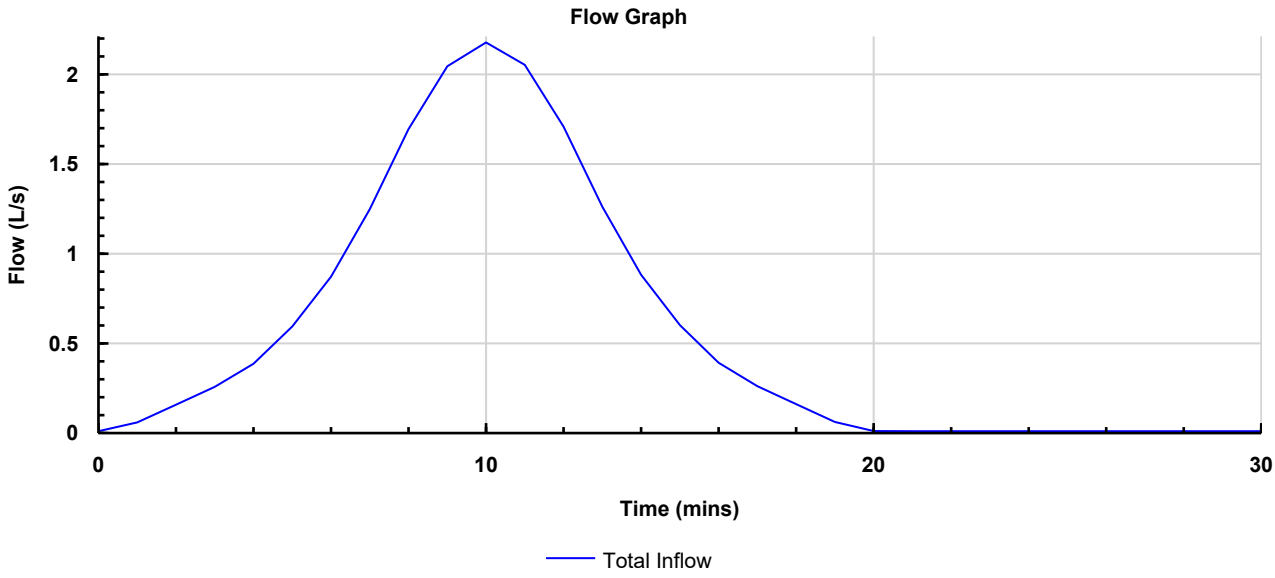
CA2
Critical Storm: FSR: 100 years: Increase Rainfall (%): +20: 15 mins: Winter

Type : Catchment Area

Inflow

Max. Inflow (L/s)	2.2
Total Inflow Volume (m³)	1.006

Graphs



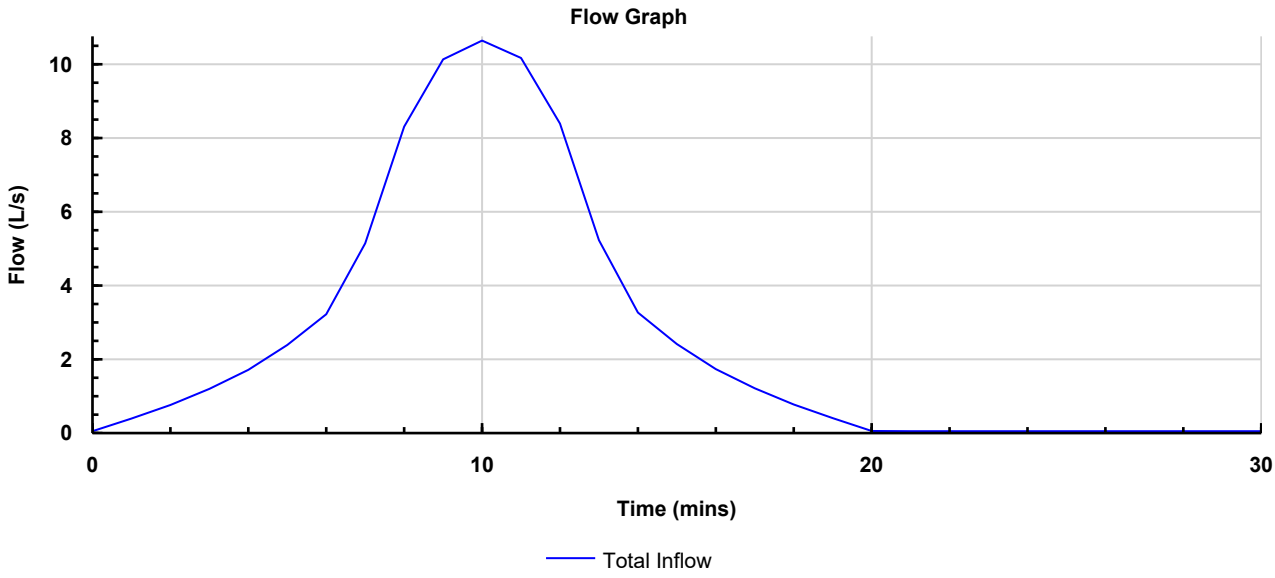
CA4
Critical Storm: FSR: 100 years: Increase Rainfall (%): +20: 15 mins: Summer

Type : Catchment Area

Inflow

Max. Inflow (L/s)	10.6
Total Inflow Volume (m³)	4.615

Graphs



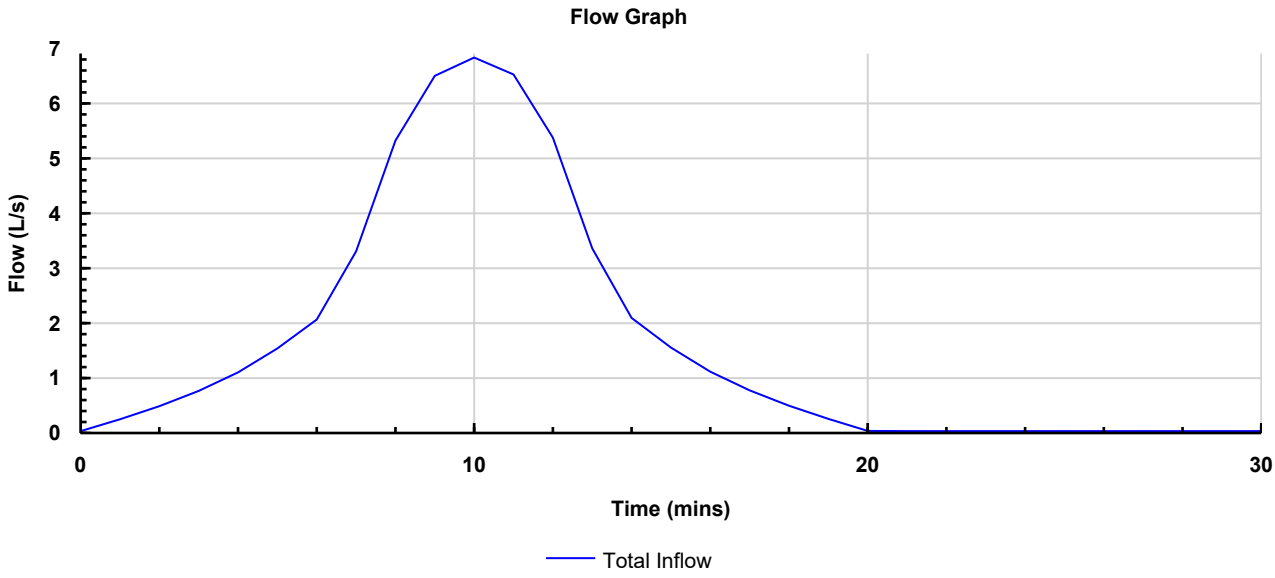
CA6
Critical Storm: FSR: 100 years: Increase Rainfall (%): +20: 15 mins: Summer

Type : Catchment Area

Inflow

Max. Inflow (L/s)	6.8
Total Inflow Volume (m³)	2.960

Graphs



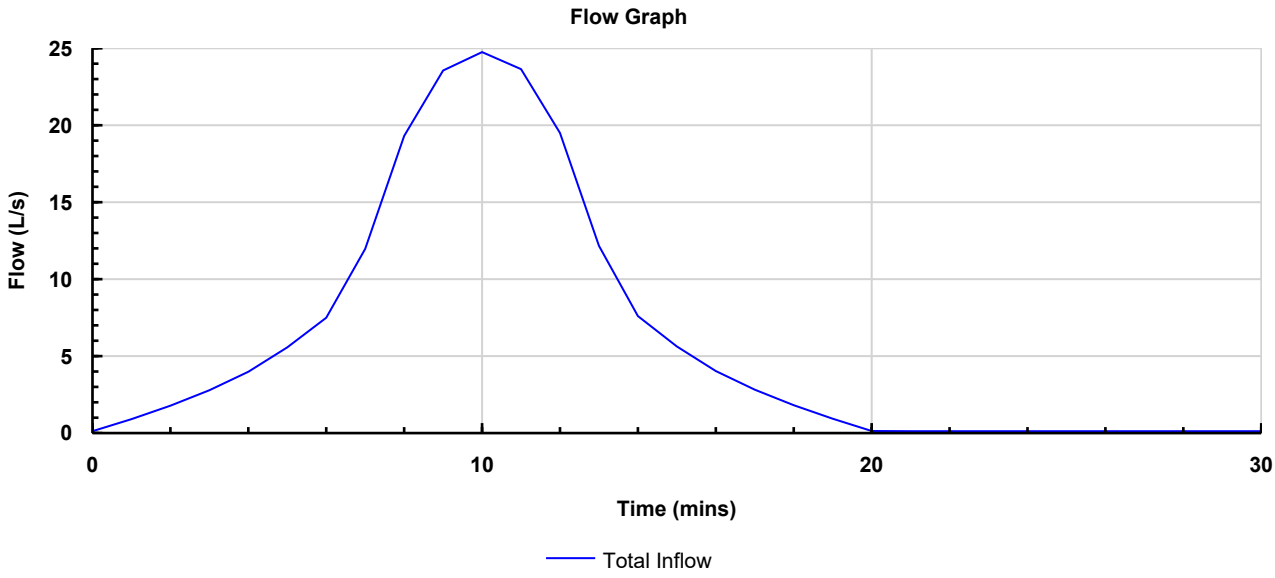
CA7
Critical Storm: FSR: 100 years: Increase Rainfall (%): +20: 15 mins: Summer

Type : Catchment Area

Inflow

Max. Inflow (L/s)	24.8
Total Inflow Volume (m³)	10.727

Graphs



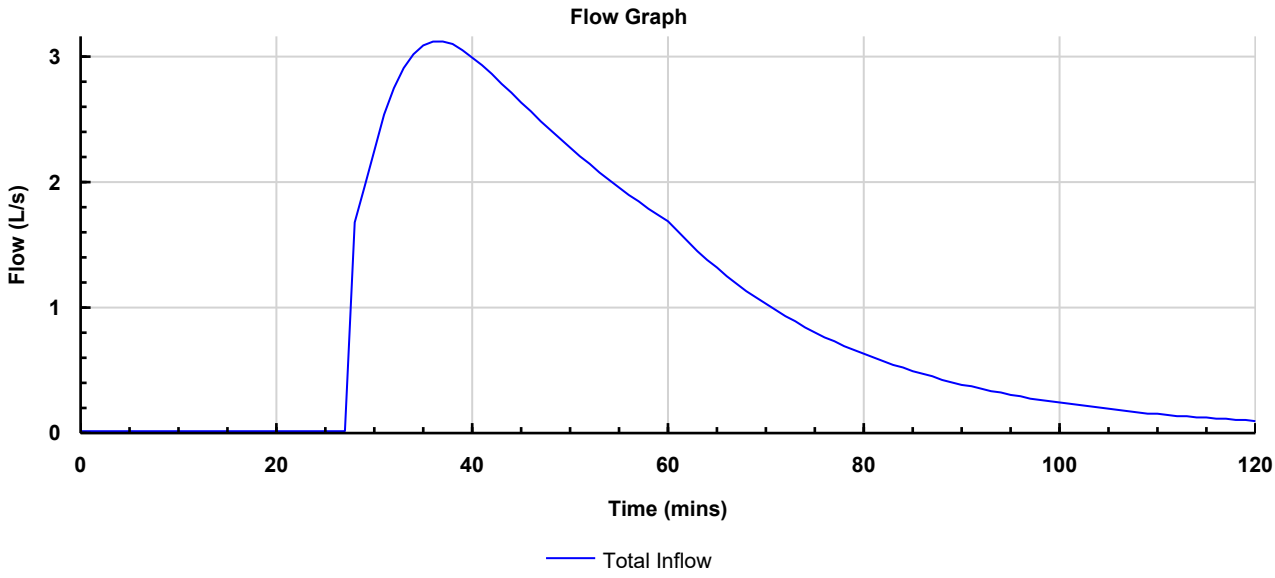
Green Roof
Critical Storm: FSR: 100 years: Increase Rainfall (%): +20: 60 mins: Summer

Type : Catchment Area

Inflow

Max. Inflow (L/s)	3.1
Total Inflow Volume (m³)	6.716

Graphs



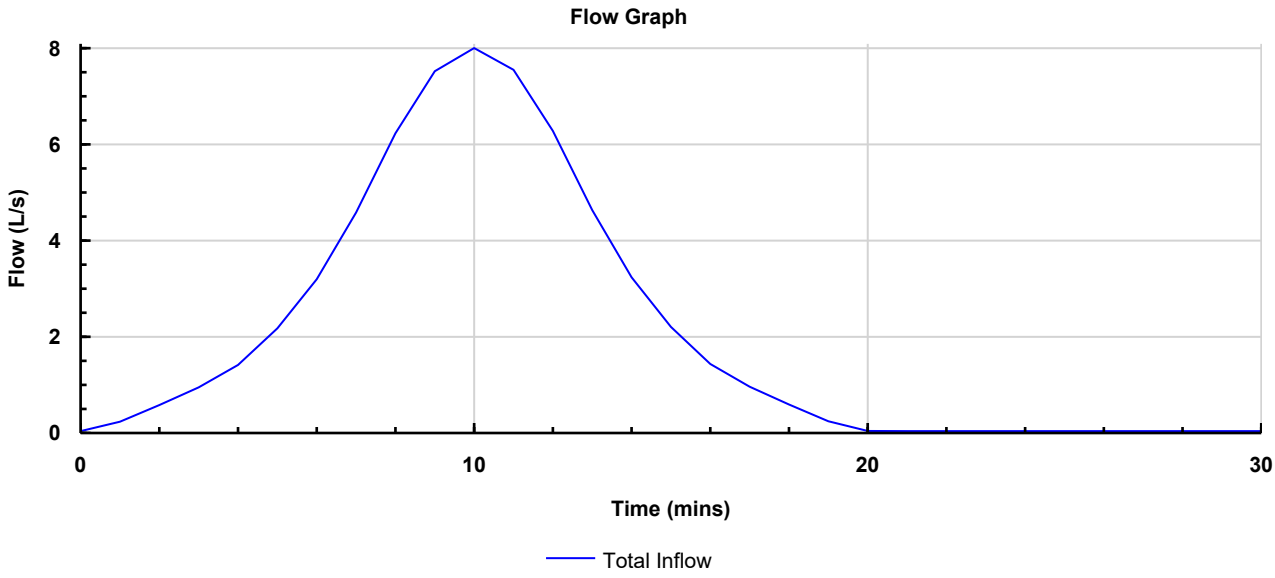
CA10
Critical Storm: FSR: 100 years: Increase Rainfall (%): +20: 15 mins: Winter

Type : Catchment Area

Inflow

Max. Inflow (L/s)	8.0
Total Inflow Volume (m³)	3.695

Graphs



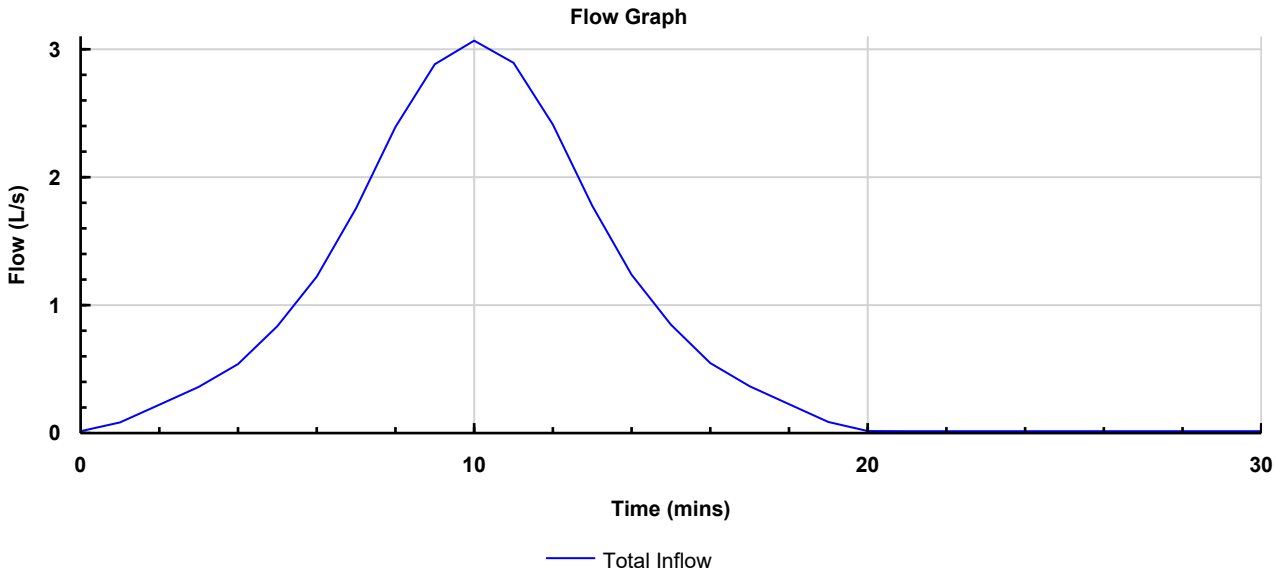
Catchment Area
Critical Storm: FSR: 100 years: Increase Rainfall (%): +20: 15 mins: Winter

Type : Catchment Area

Inflow

Max. Inflow (L/s)	3.1
Total Inflow Volume (m³)	1.415

Graphs



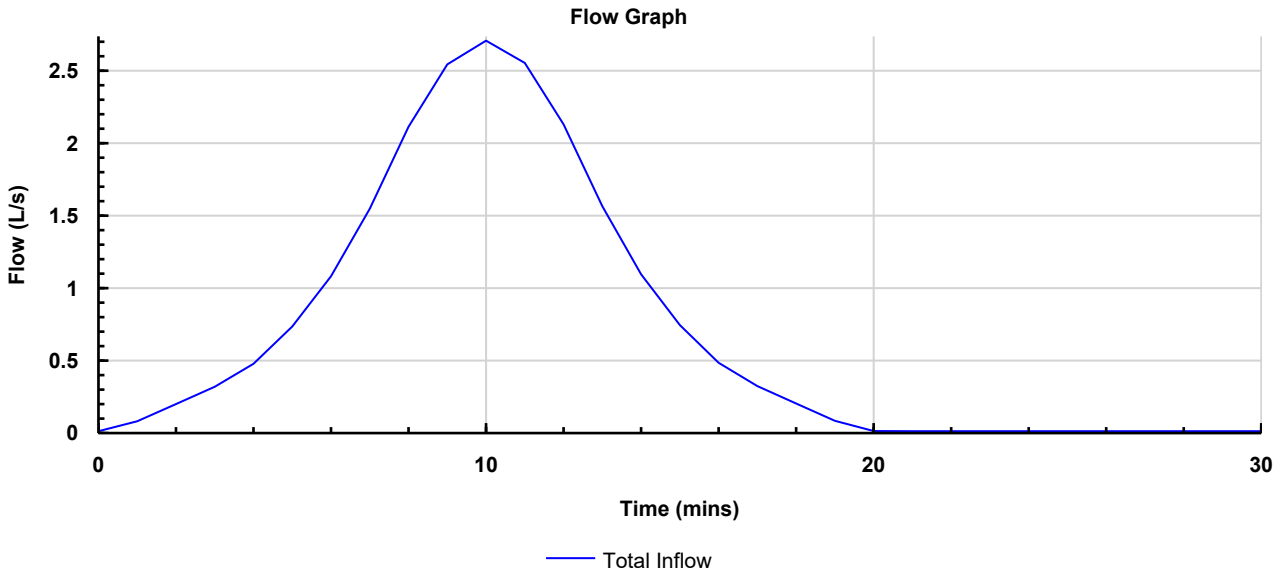
Catchment Area (1)
Critical Storm: FSR: 100 years: Increase Rainfall (%): +20: 15 mins: Winter

Type : Catchment Area

Inflow

Max. Inflow (L/s)	2.7
Total Inflow Volume (m³)	1.251

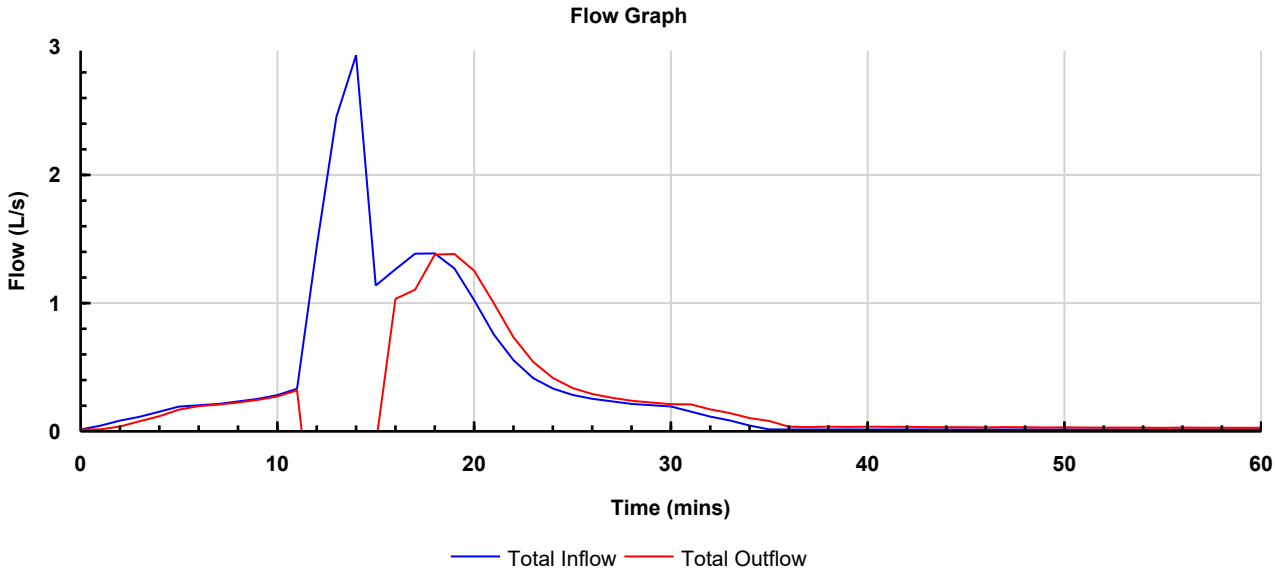
Graphs

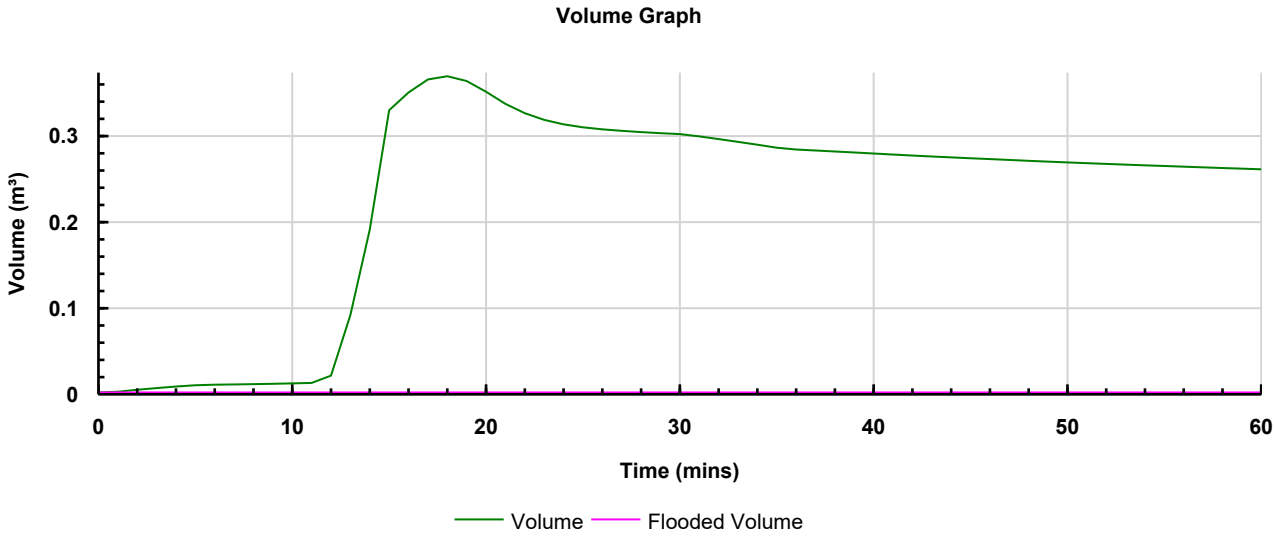


MH1 Type : Manhole

Critical Storm: FSR: 100 years: Increase Rainfall (%): +20: 30 mins: Summer

Graphs

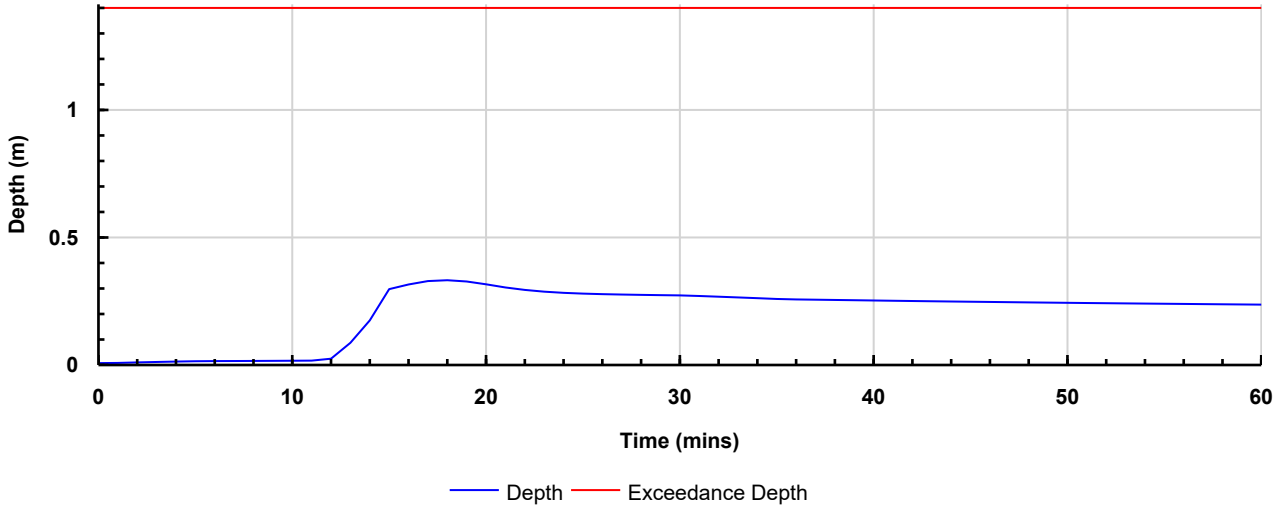




COONEYS LANE DEVELOPMENT:	Date: 29/08/2024		
	Designed by: KL	Checked by: KC	Approved By: NF
Report Details: Type: Junction Results Storm Phase: Phase	Company Address:		

Horganlynch

Depth Graph

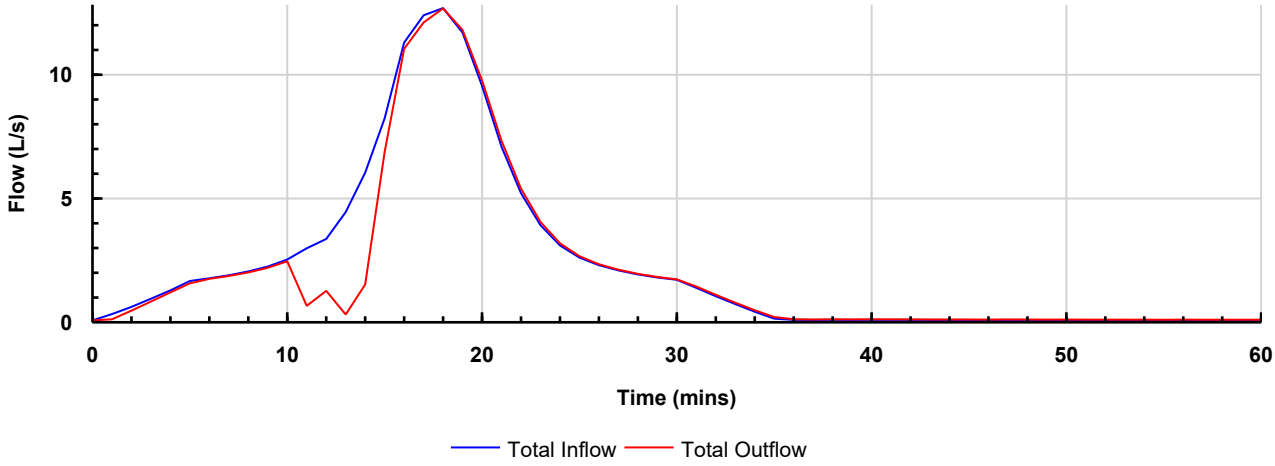


MH2 Type : Manhole

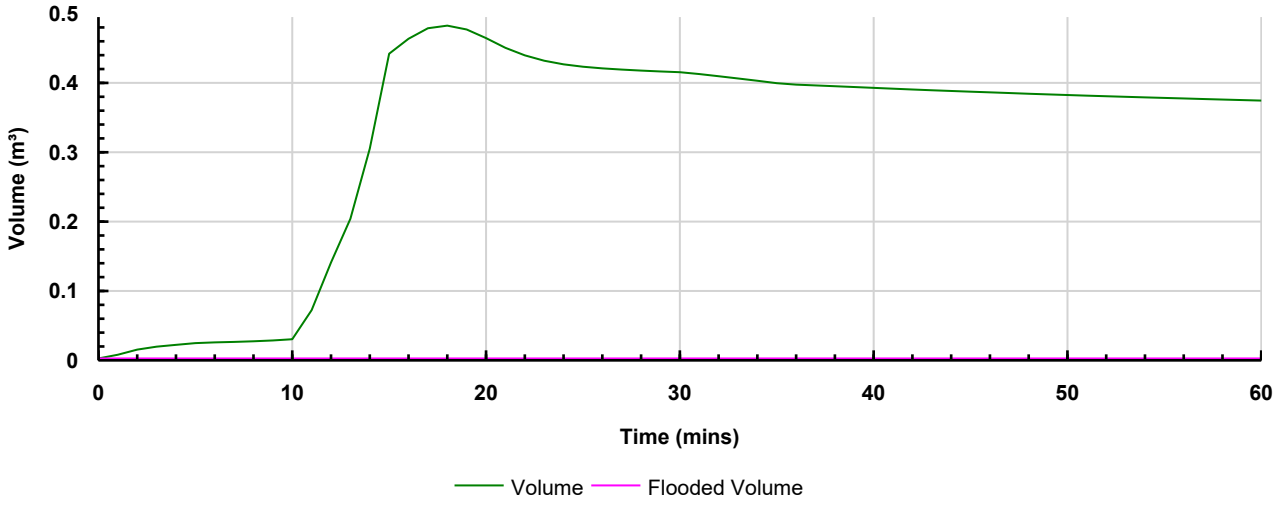
Critical Storm: FSR: 100 years: Increase Rainfall (%): +20: 30 mins: Summer

Graphs

Flow Graph



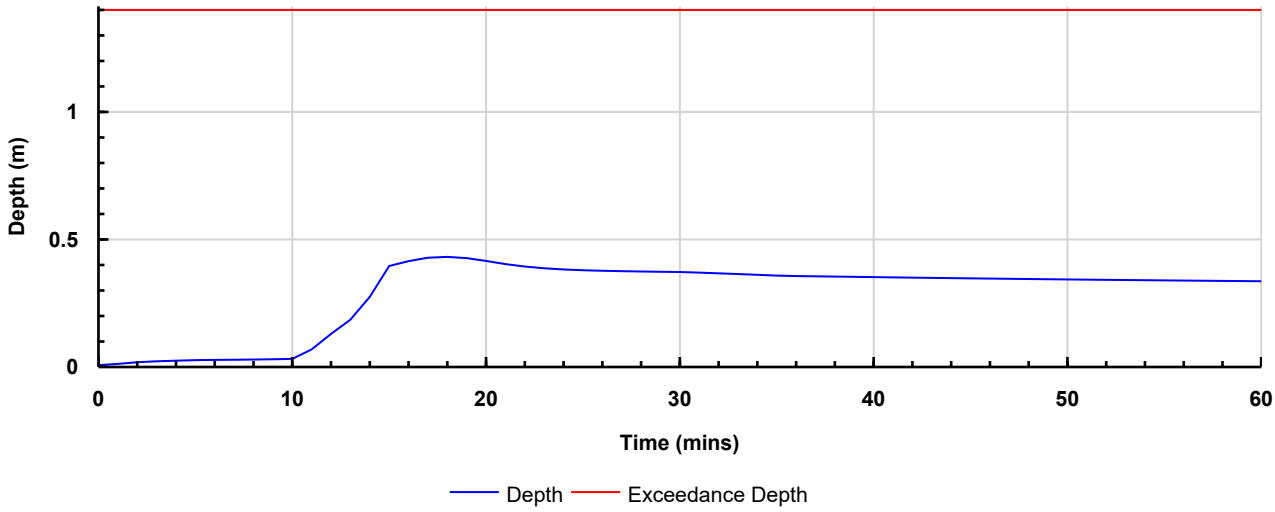
Volume Graph



COONEYS LANE DEVELOPMENT:	Date: 29/08/2024		
	Designed by: KL	Checked by: KC	Approved By: NF
Report Details: Type: Junction Results Storm Phase: Phase	Company Address:		

Horganlynch

Depth Graph

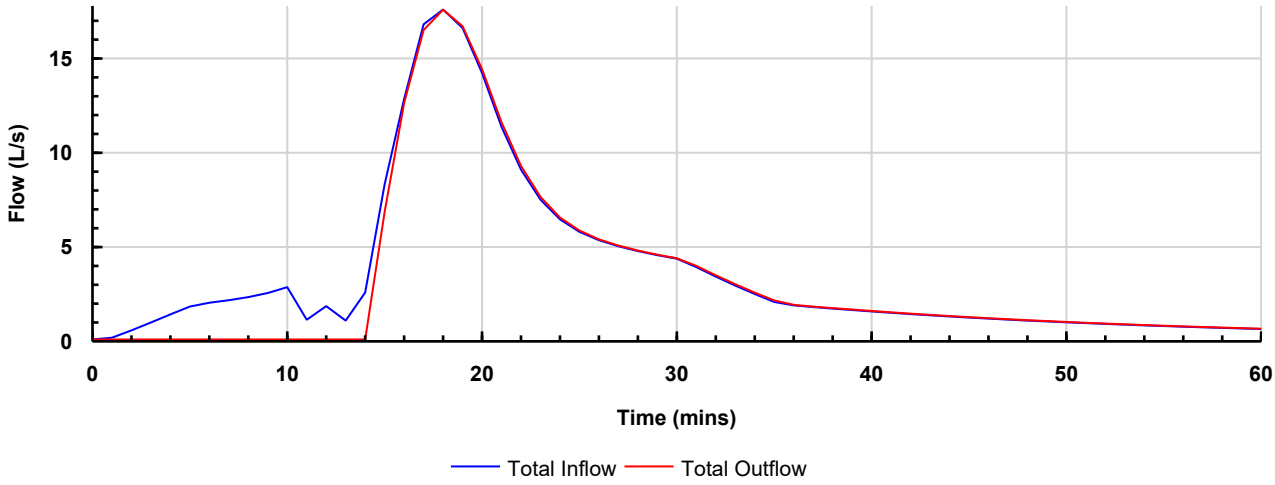


MH3 Type : Manhole

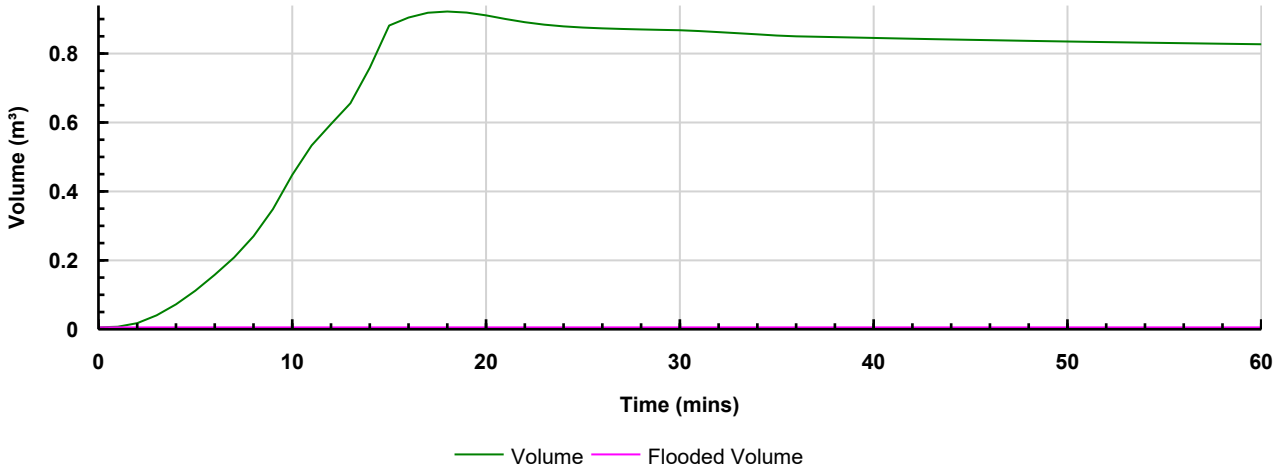
Critical Storm: FSR: 100 years: Increase Rainfall (%): +20: 30 mins: Summer

Graphs

Flow Graph



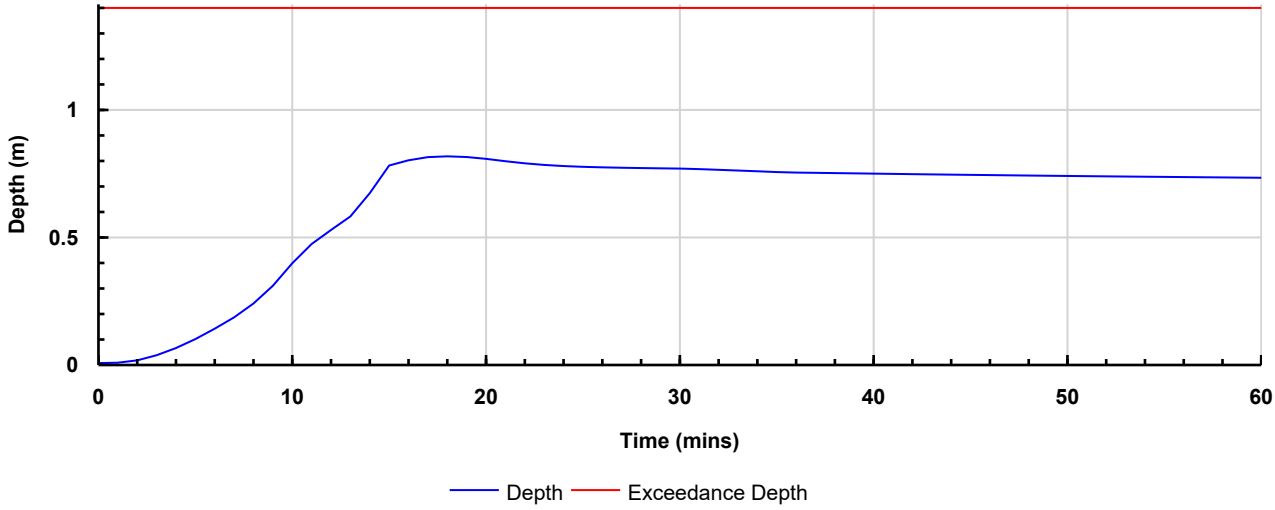
Volume Graph



COONEYS LANE DEVELOPMENT:	Date: 29/08/2024		
	Designed by: KL	Checked by: KC	Approved By: NF
Report Details: Type: Junction Results Storm Phase: Phase	Company Address:		

Horganlynch

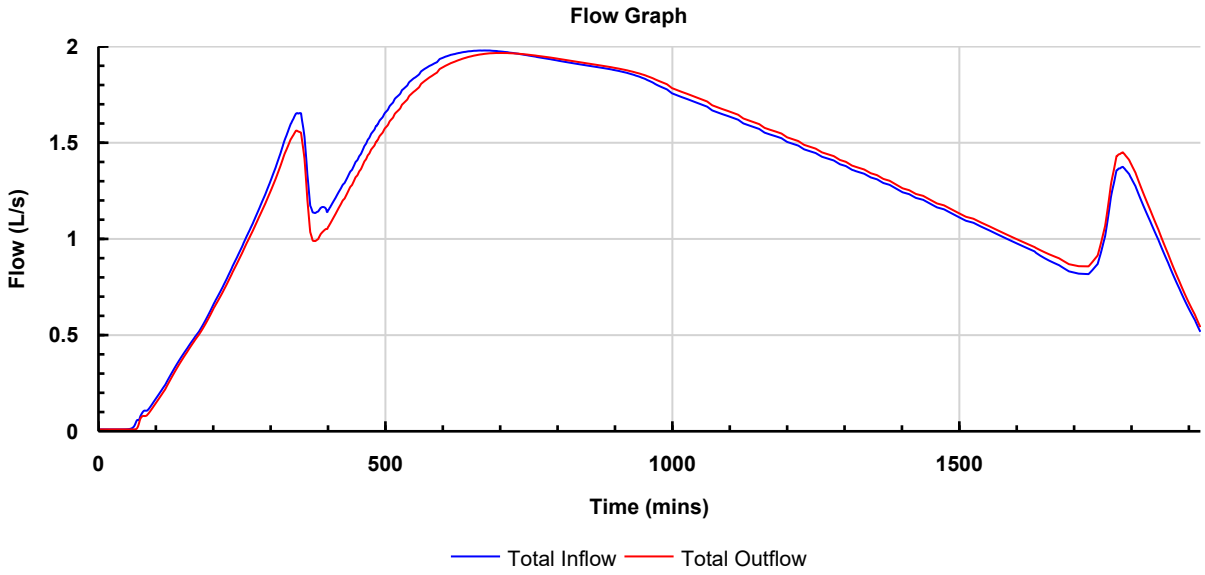
Depth Graph

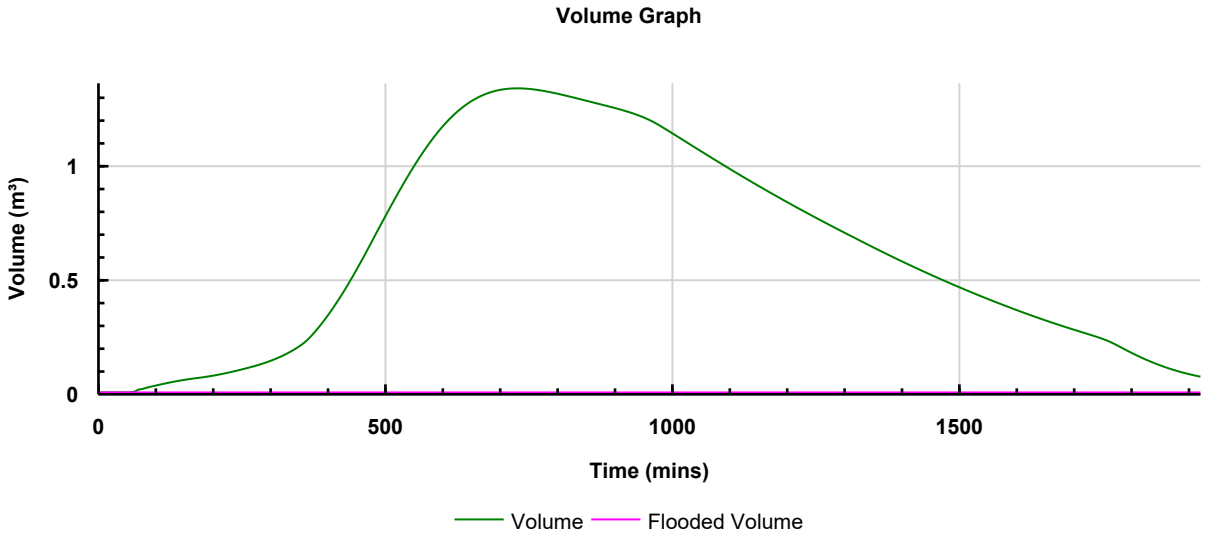


MH5 Type : Manhole

Critical Storm: FSR: 100 years: Increase Rainfall (%): +20: 960 mins: Winter

Graphs

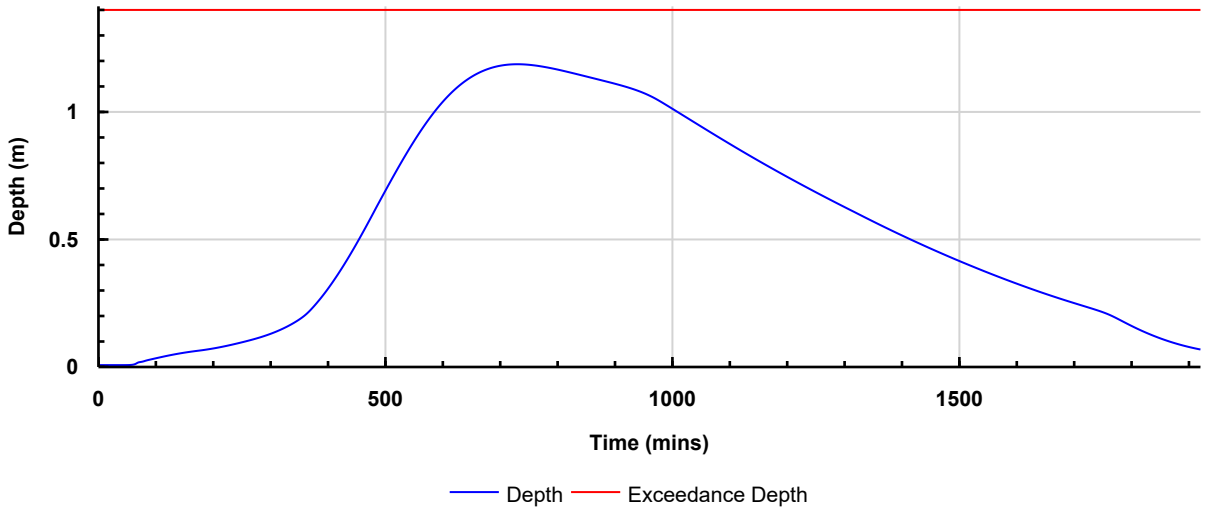




COONEYS LANE DEVELOPMENT:	Date: 29/08/2024		
	Designed by: KL	Checked by: KC	Approved By: NF
Report Details: Type: Junction Results Storm Phase: Phase	Company Address:		

Horganlynch

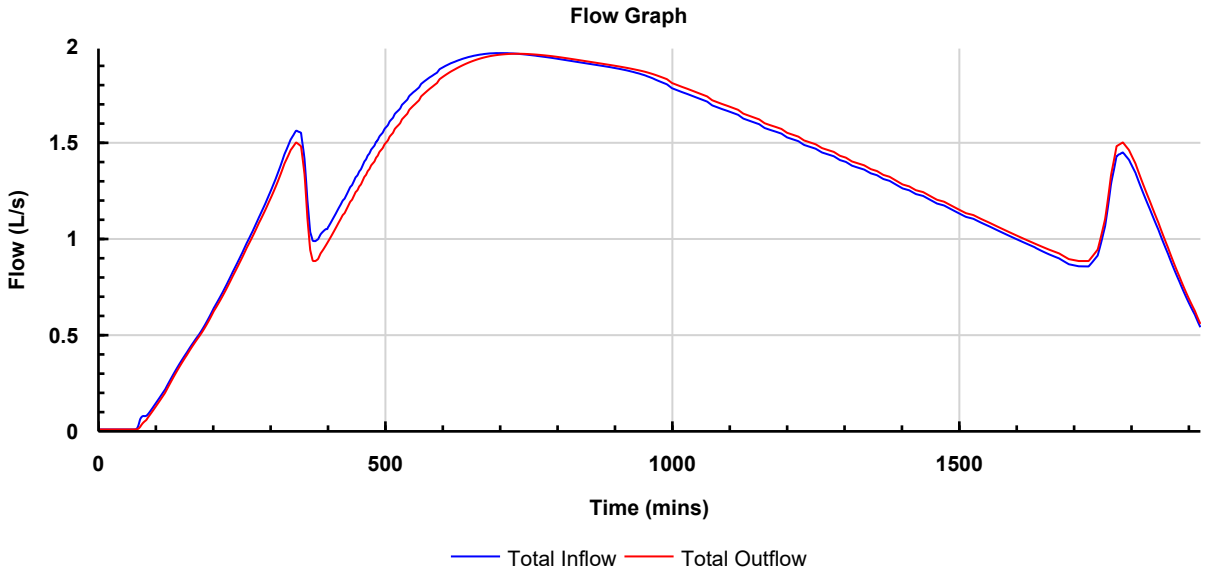
Depth Graph

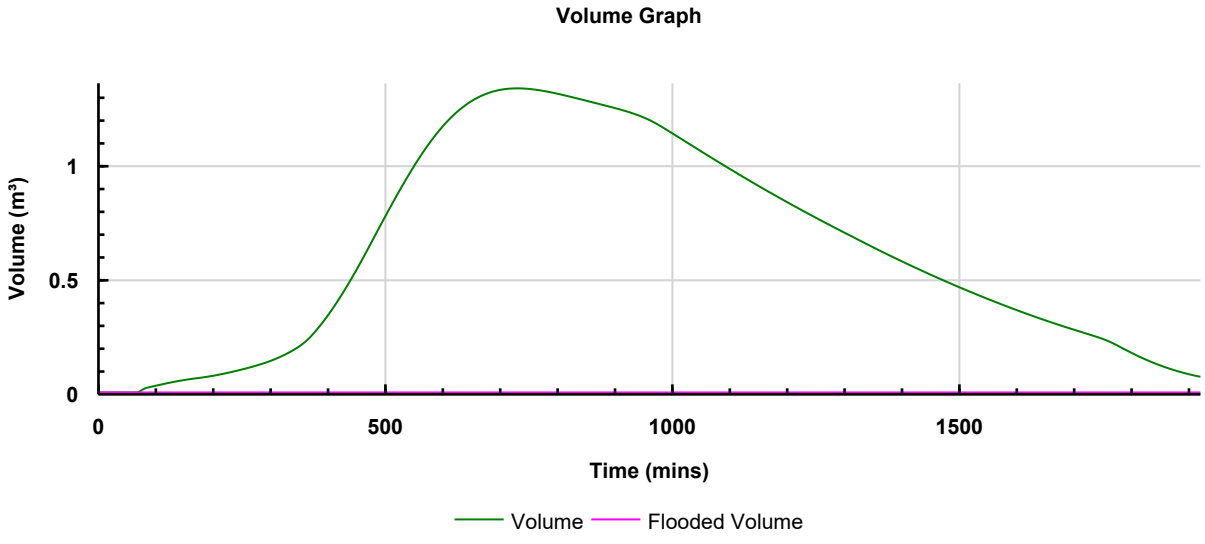


MH6 Type : Manhole

Critical Storm: FSR: 100 years: Increase Rainfall (%): +20: 960 mins: Winter

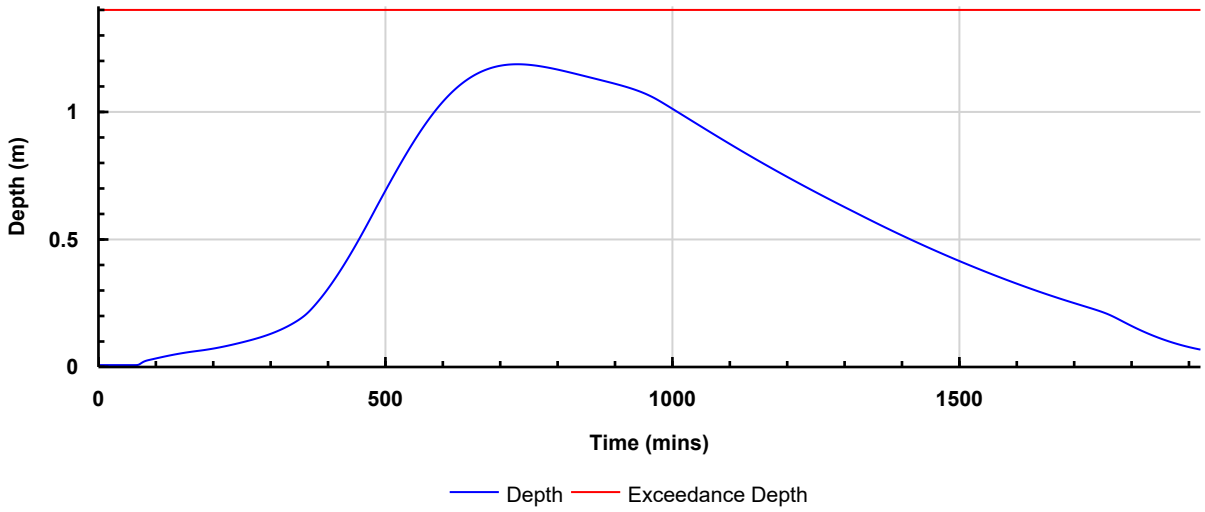
Graphs





COONEYS LANE DEVELOPMENT:	Date: 29/08/2024			Horganlynch
	Designed by: KL	Checked by: KC	Approved By: NF	
Report Details: Type: Junction Results Storm Phase: Phase	Company Address:			

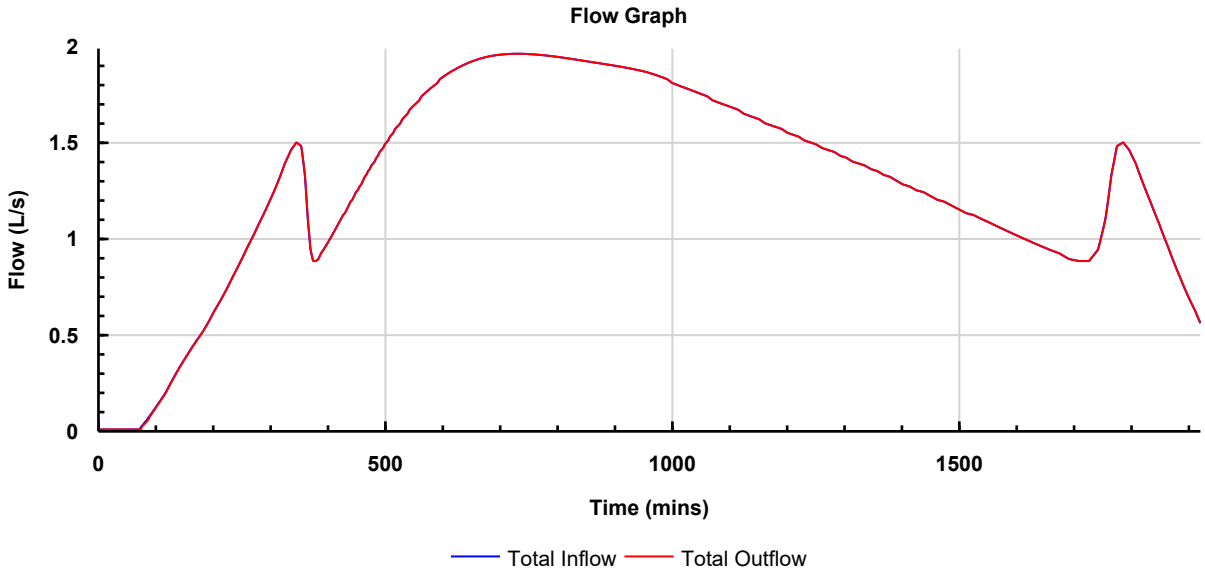
Depth Graph

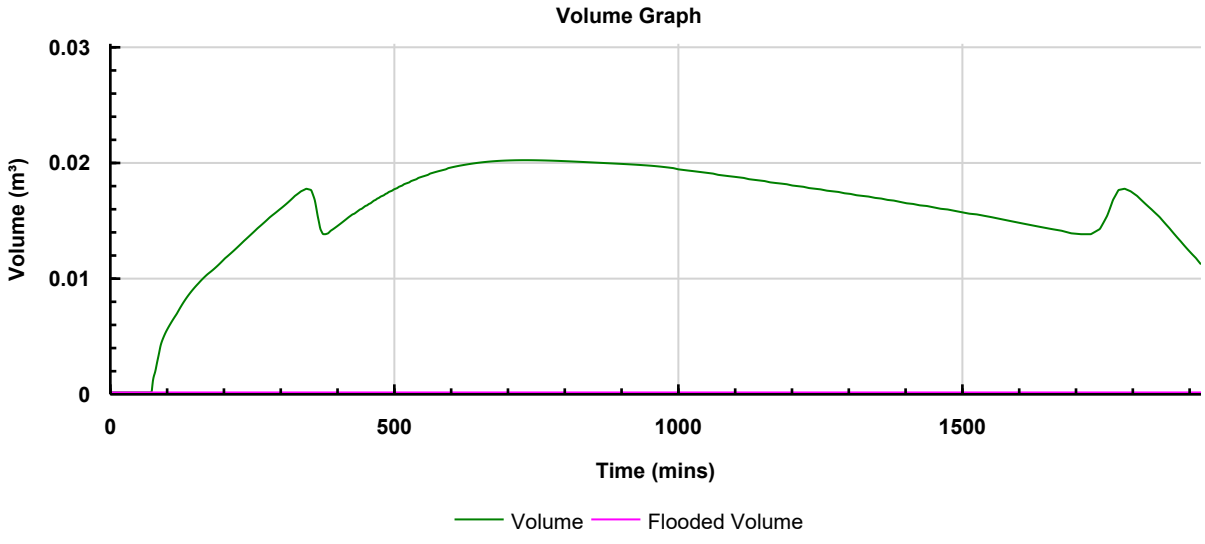


MH7 Type : Manhole

Critical Storm: FSR: 100 years: Increase Rainfall (%): +20: 960 mins: Winter

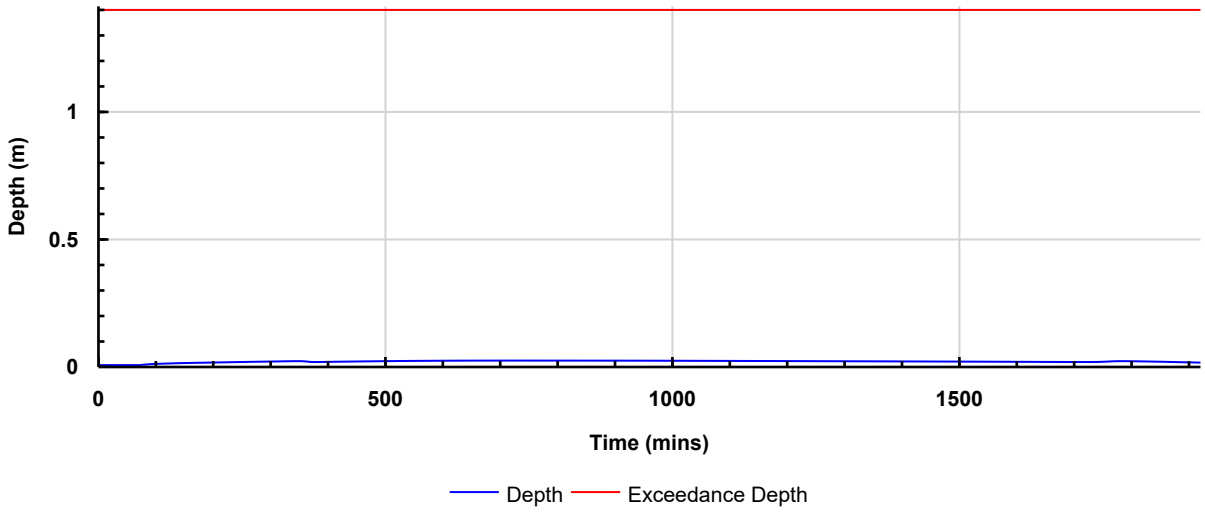
Graphs





COONEYS LANE DEVELOPMENT:	Date: 29/08/2024			Horganlynch
	Designed by: KL	Checked by: KC	Approved By: NF	
Report Details: Type: Junction Results Storm Phase: Phase	Company Address:			

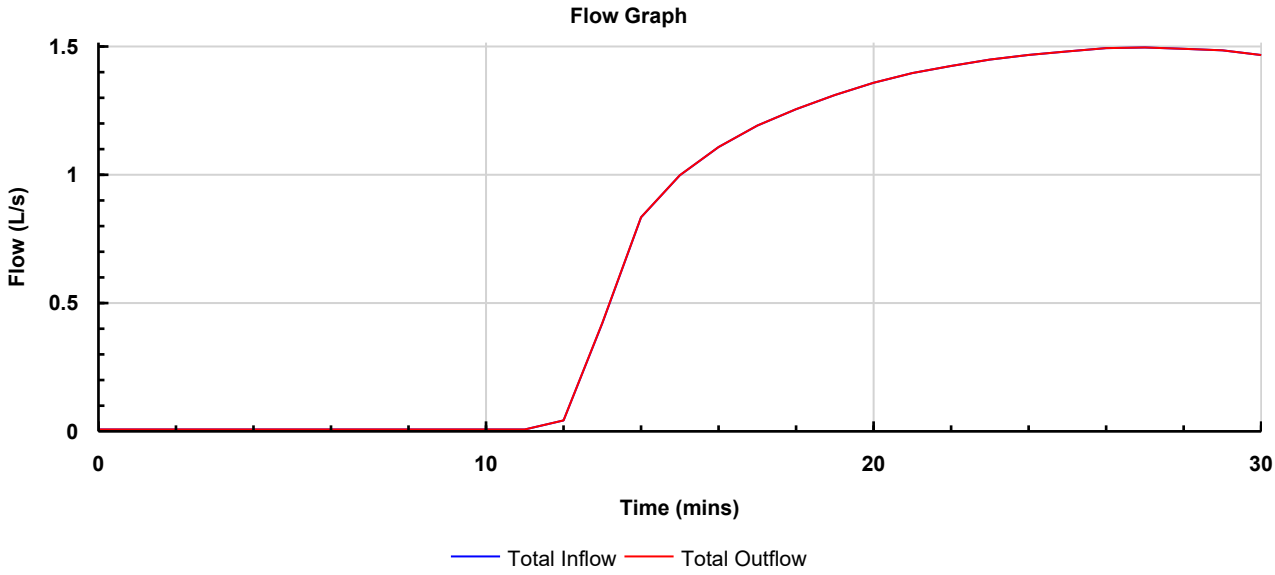
Depth Graph

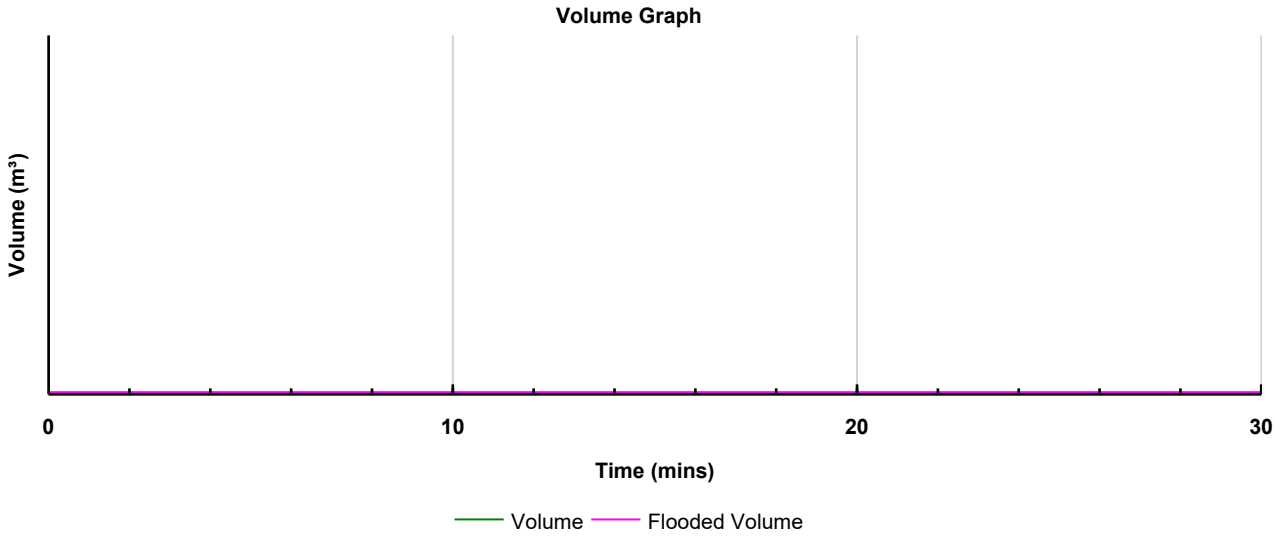


MH8 Type : Manhole

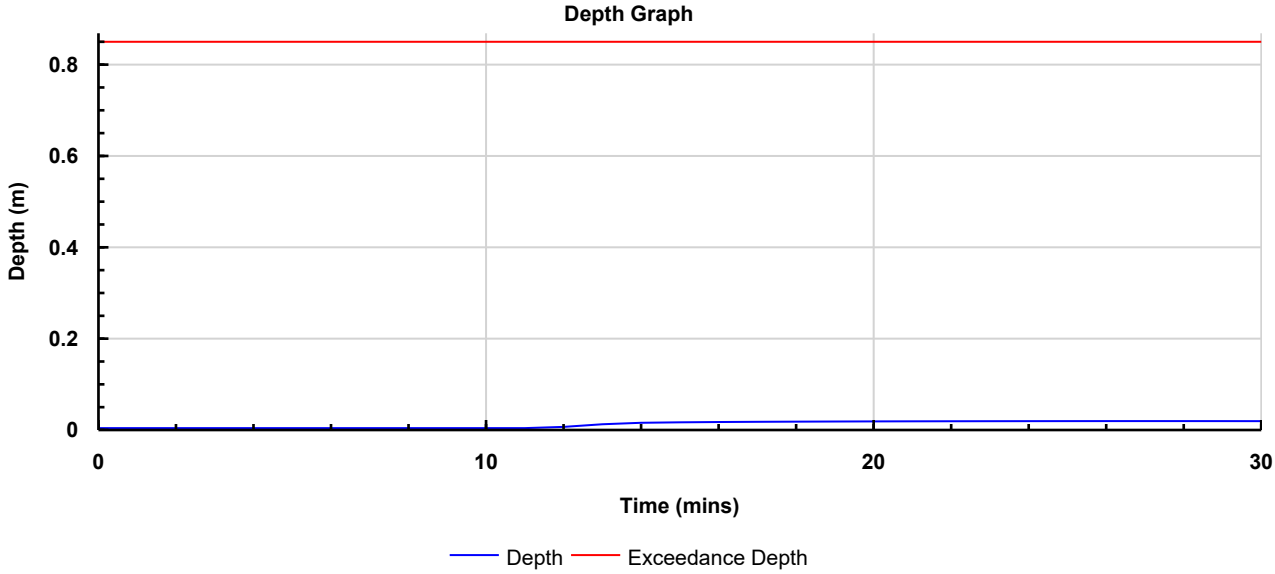
Critical Storm: FSR: 100 years: Increase Rainfall (%): +20: 15 mins: Summer

Graphs





COONEYS LANE DEVELOPMENT:	Date: 29/08/2024			Horganlynch
	Designed by: KL	Checked by: KC	Approved By: NF	
Report Details: Type: Junction Results Storm Phase: Phase	Company Address:			

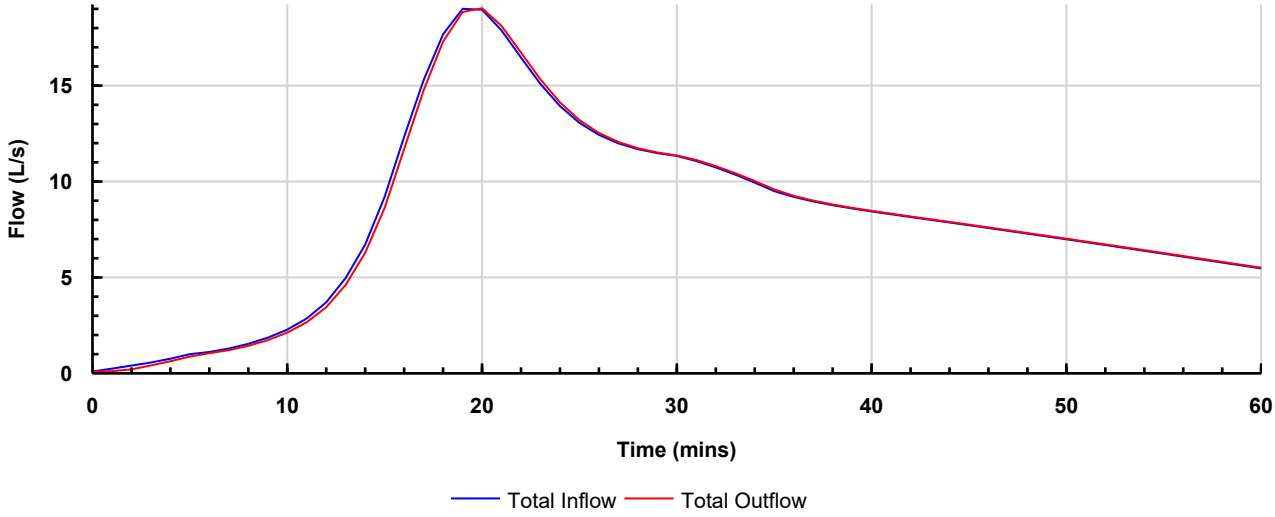


MH10 Type : Manhole

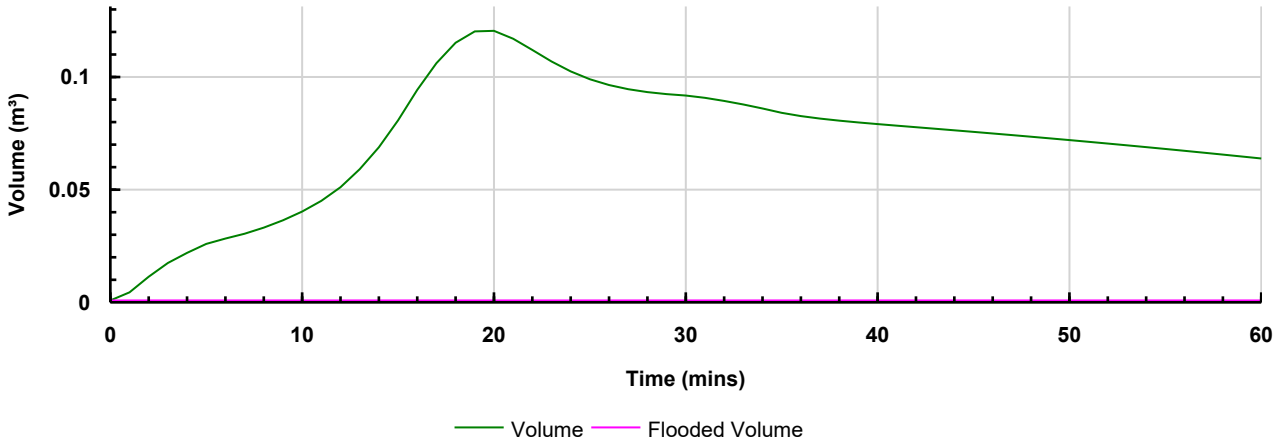
Critical Storm: FSR: 100 years: Increase Rainfall (%): +20: 30 mins: Summer

Graphs

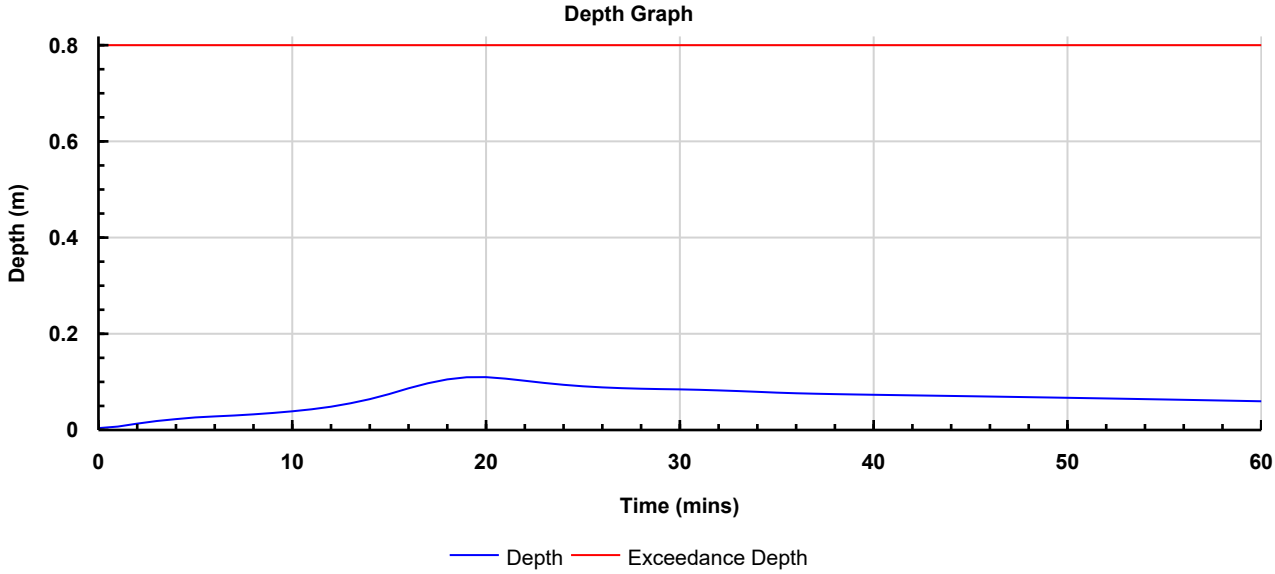
Flow Graph



Volume Graph



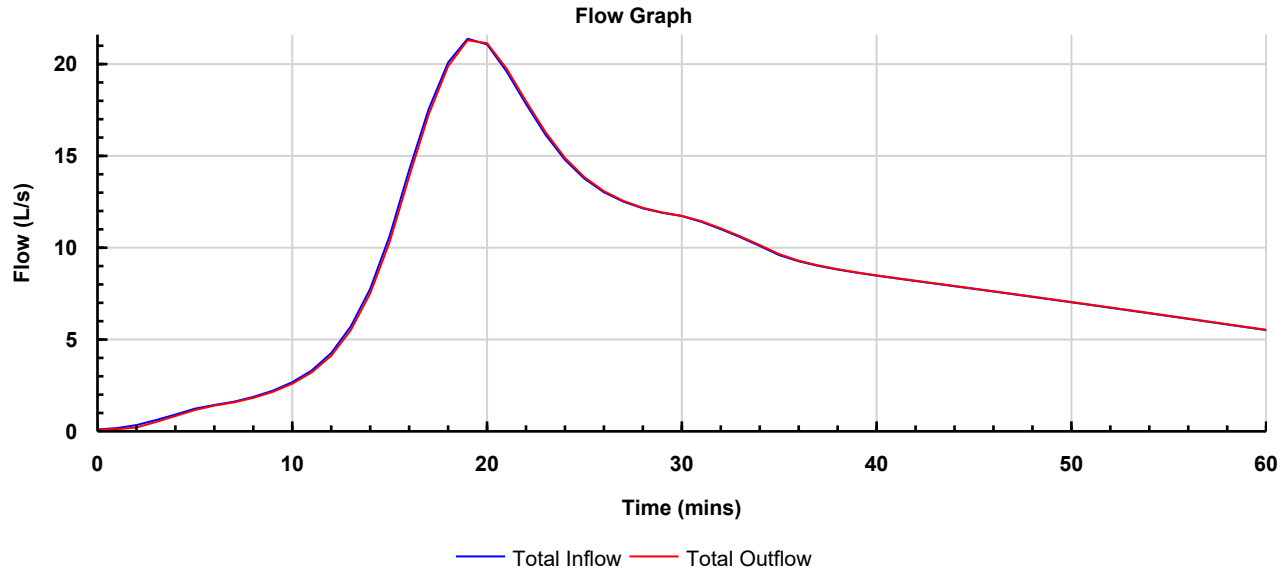
COONEYS LANE DEVELOPMENT:	Date: 29/08/2024		
	Designed by: KL	Checked by: KC	Approved By: NF
Report Details: Type: Junction Results Storm Phase: Phase	Company Address:		

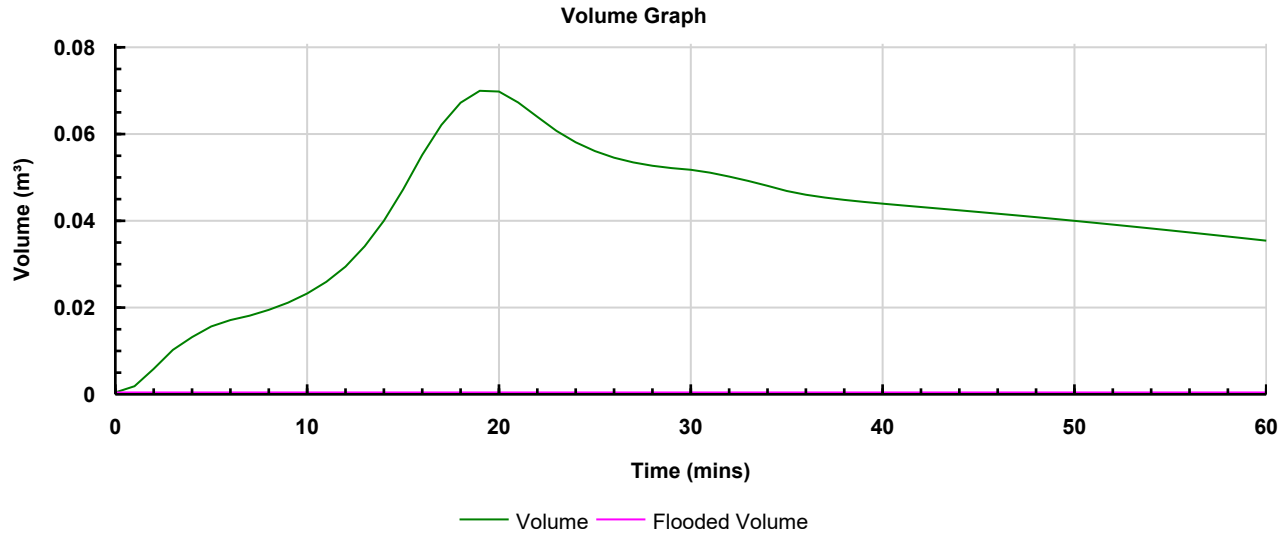


MH11 Type : Manhole

Critical Storm: FSR: 100 years: Increase Rainfall (%): +20: 30 mins: Summer

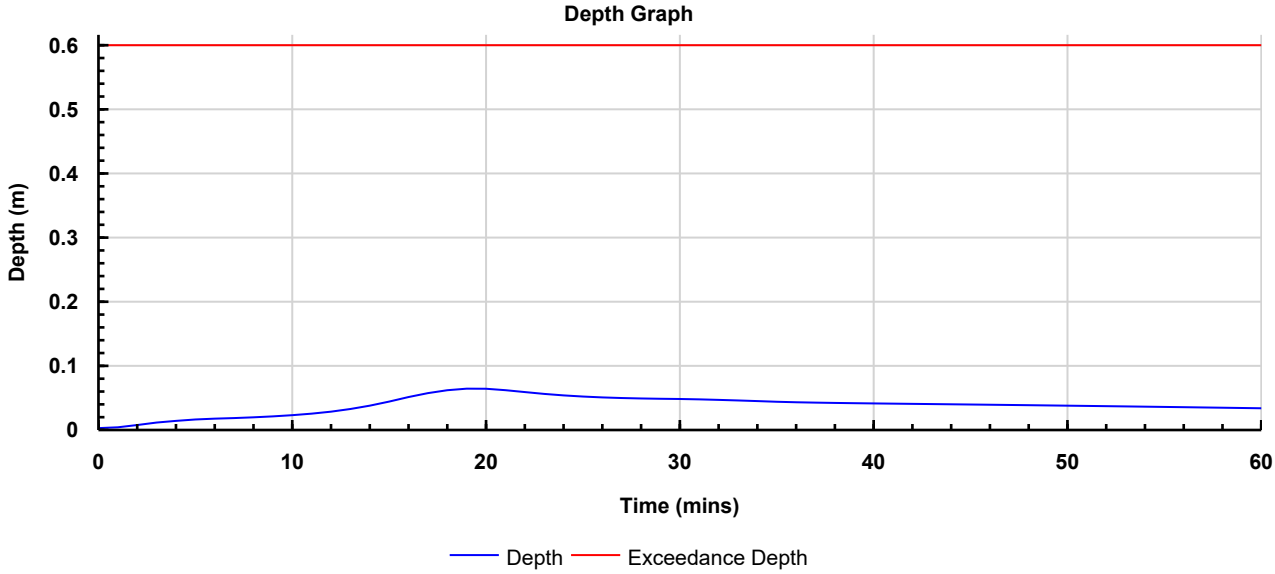
Graphs





COONEYS LANE DEVELOPMENT:	Date: 29/08/2024		
	Designed by: KL	Checked by: KC	Approved By: NF
Report Details: Type: Junction Results Storm Phase: Phase	Company Address:		

Horganlynch

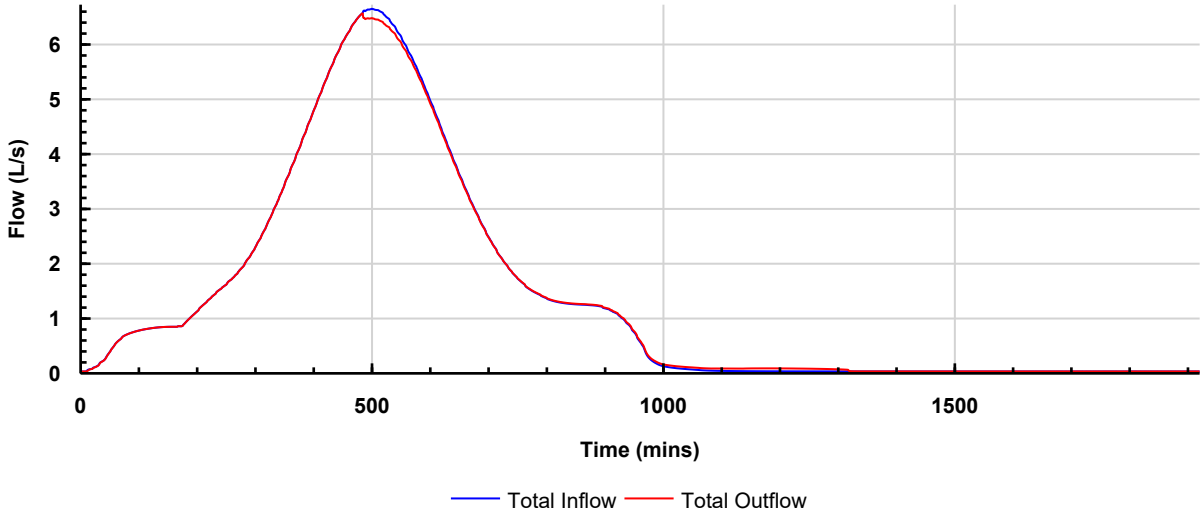


MH13 Type : Manhole

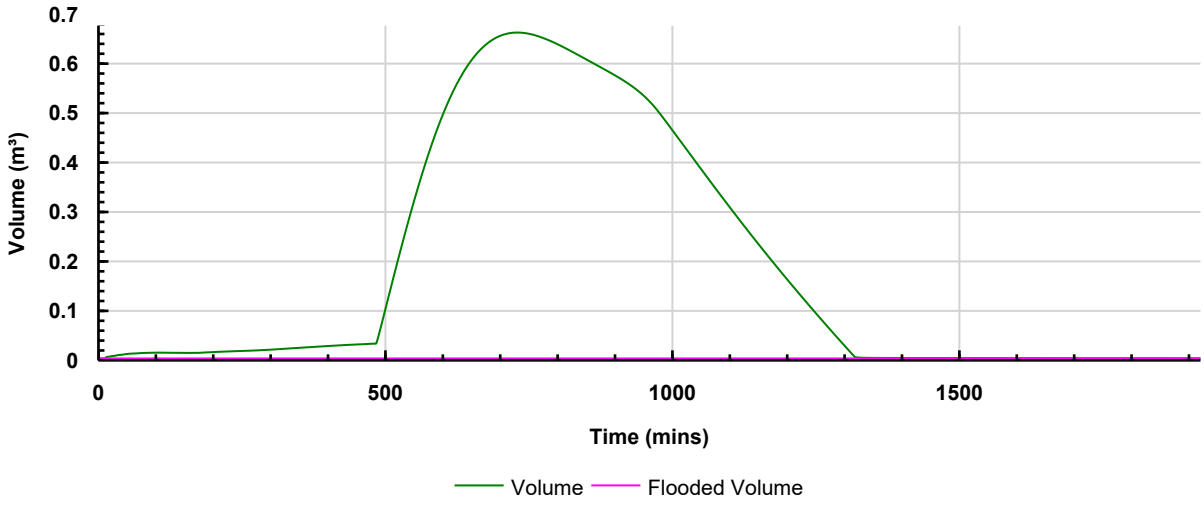
Critical Storm: FSR: 100 years: Increase Rainfall (%): +20: 960 mins: Winter

Graphs

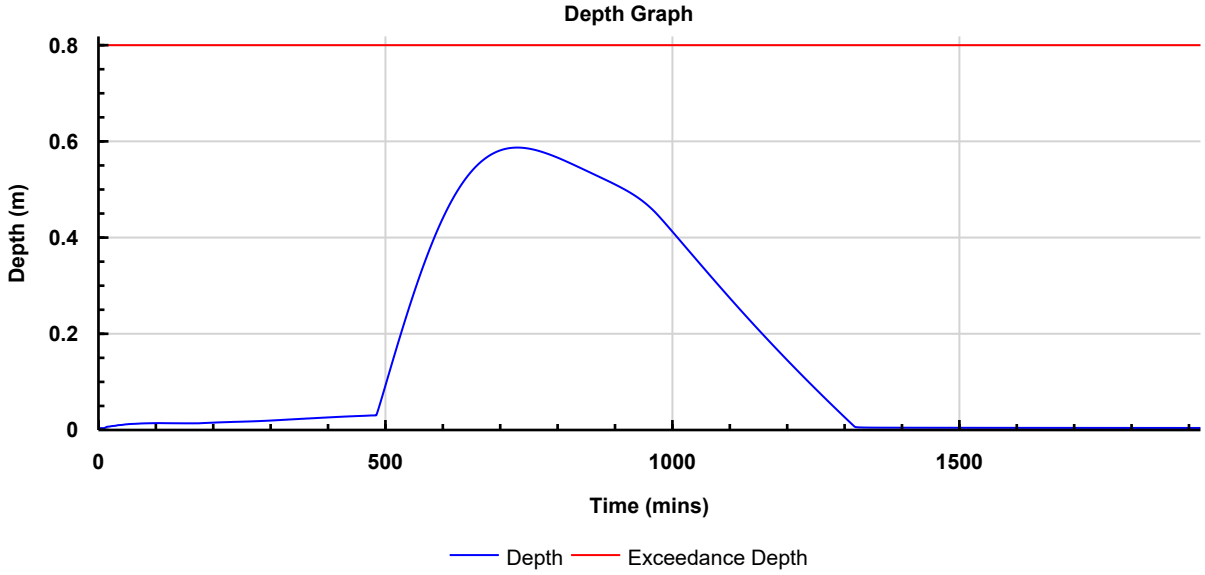
Flow Graph



Volume Graph



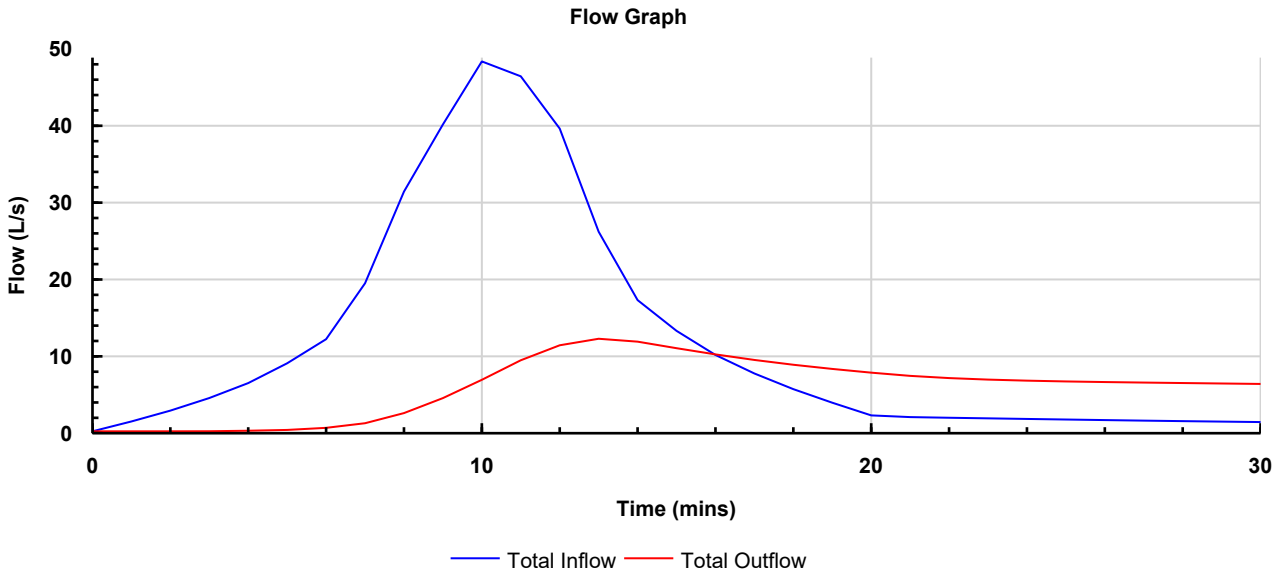
COONEYS LANE DEVELOPMENT:	Date: 29/08/2024			Horganlynch
	Designed by: KL	Checked by: KC	Approved By: NF	
Report Details: Type: Junction Results Storm Phase: Phase	Company Address:			

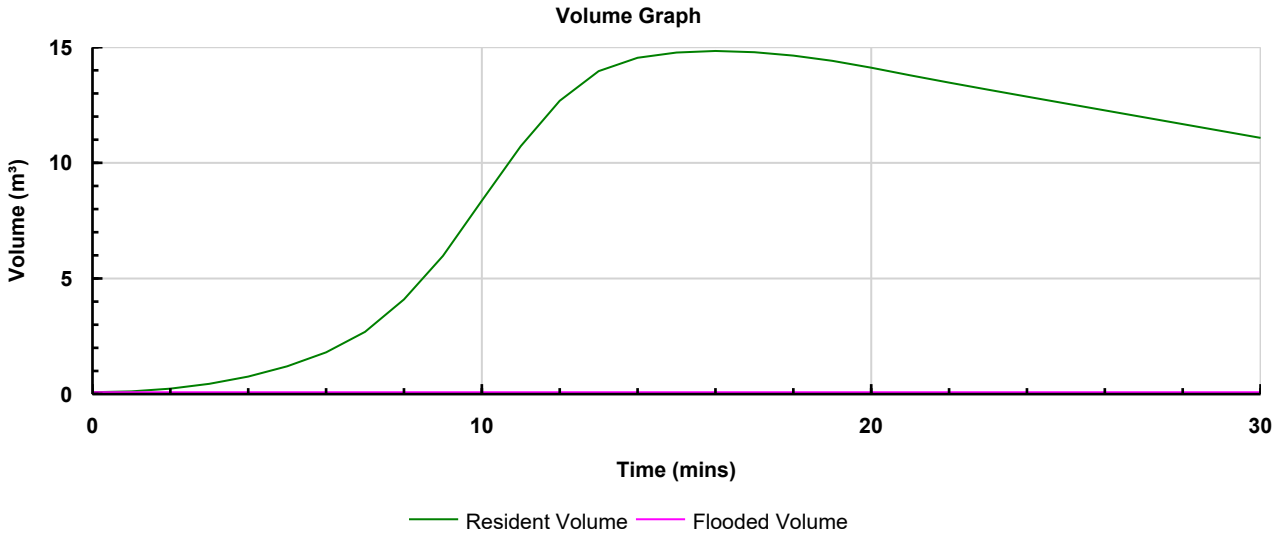


Porous Paving
Critical Storm: FSR: 100 years: Increase Rainfall (%): +20: 15 mins: Summer

Type : Porous Paving

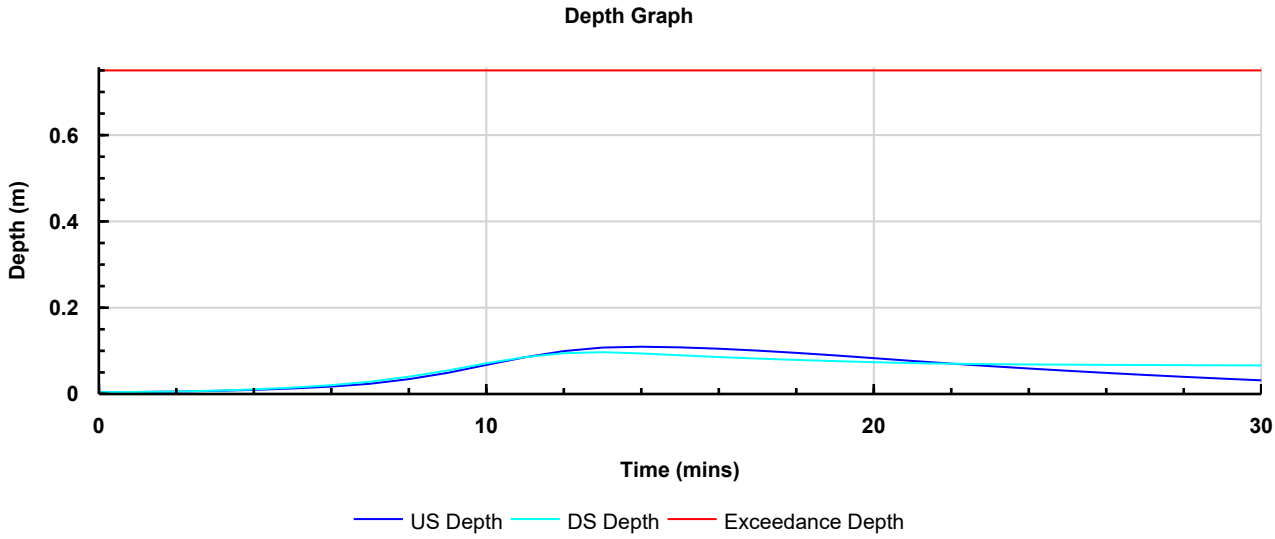
Graphs





COONEYS LANE DEVELOPMENT:	Date: 29/08/2024		
	Designed by: KL	Checked by: KC	Approved By: NF
Report Details: Type: Stormwater Control Results Storm Phase: Phase	Company Address:		

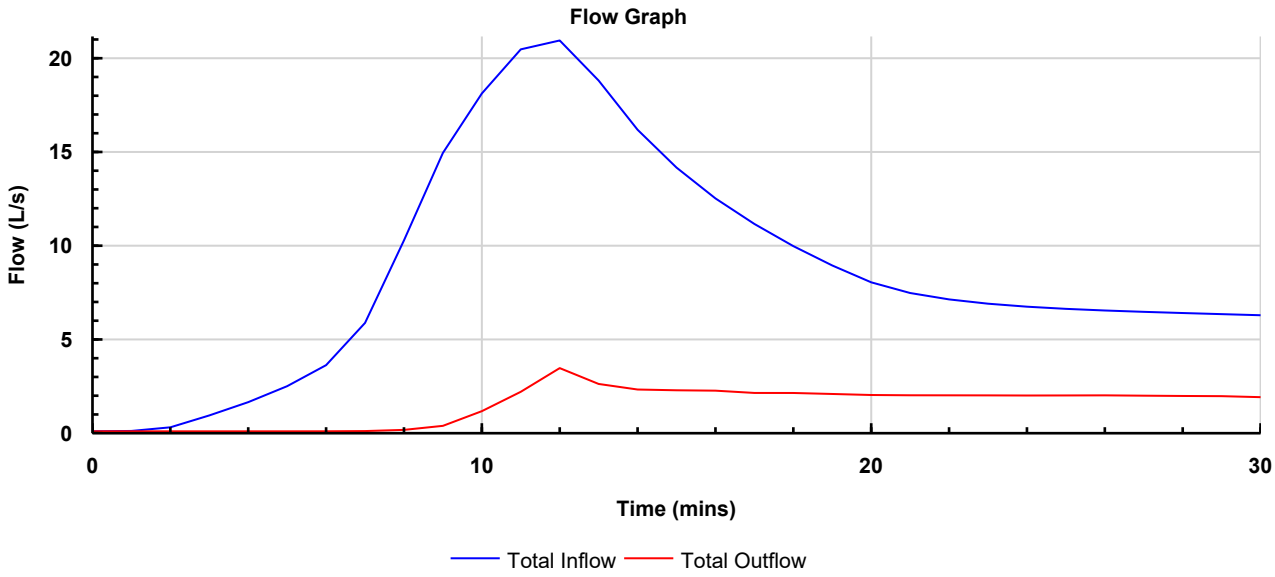
Horganlynch

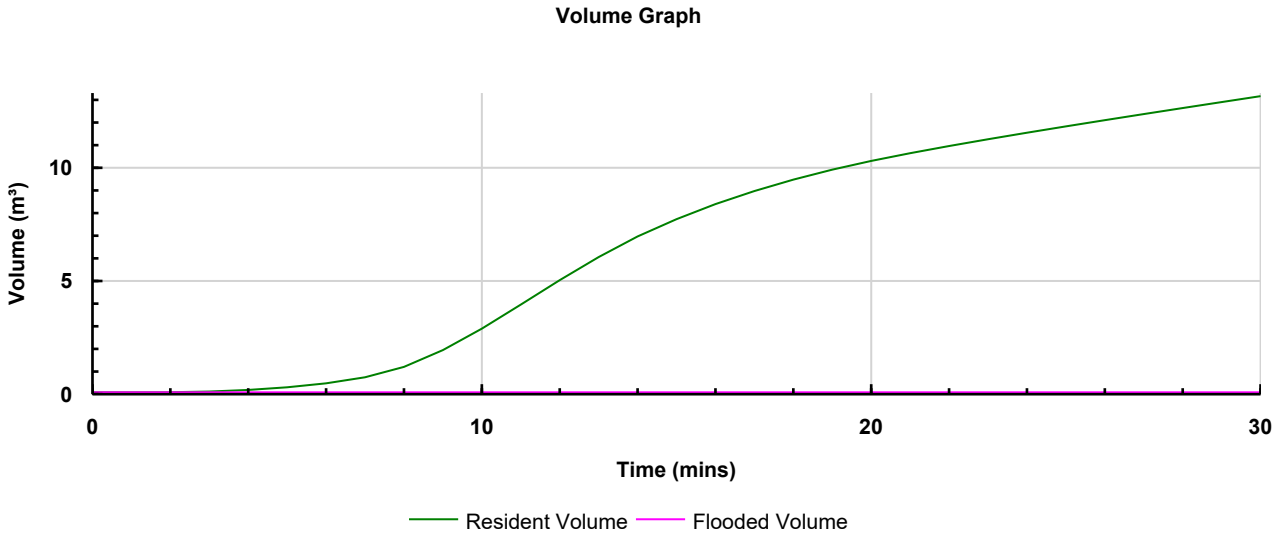


Tank
Critical Storm: FSR: 100 years: Increase Rainfall (%): +20: 15 mins: Summer

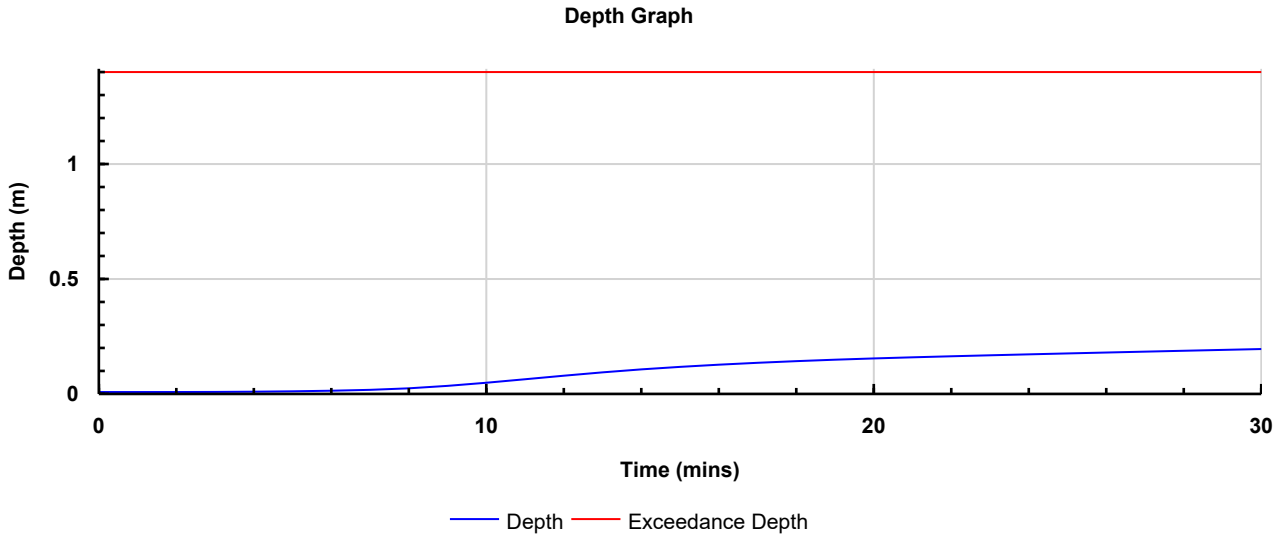
Type : Tank

Graphs





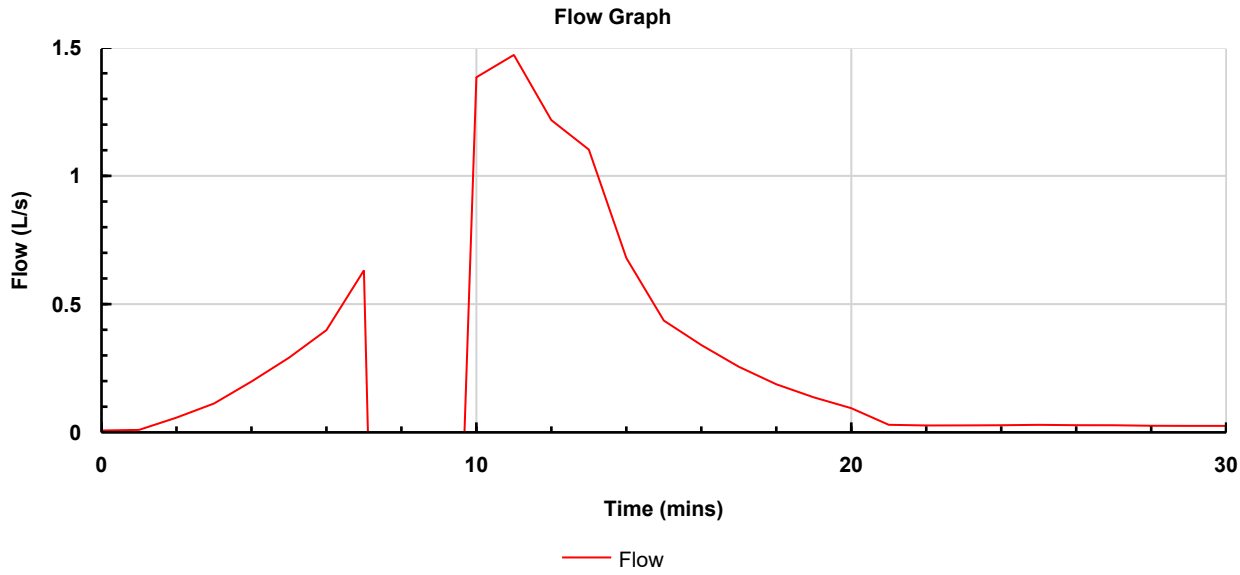
COONEYS LANE DEVELOPMENT:	Date: 29/08/2024			Horganlynch
	Designed by: KL	Checked by: KC	Approved By: NF	
Report Details: Type: Stormwater Control Results Storm Phase: Phase	Company Address:			



P1 Type : Pipe

Critical Storm: FSR: 100 years: Increase Rainfall (%): +20: 15 mins: Summer

Graphs

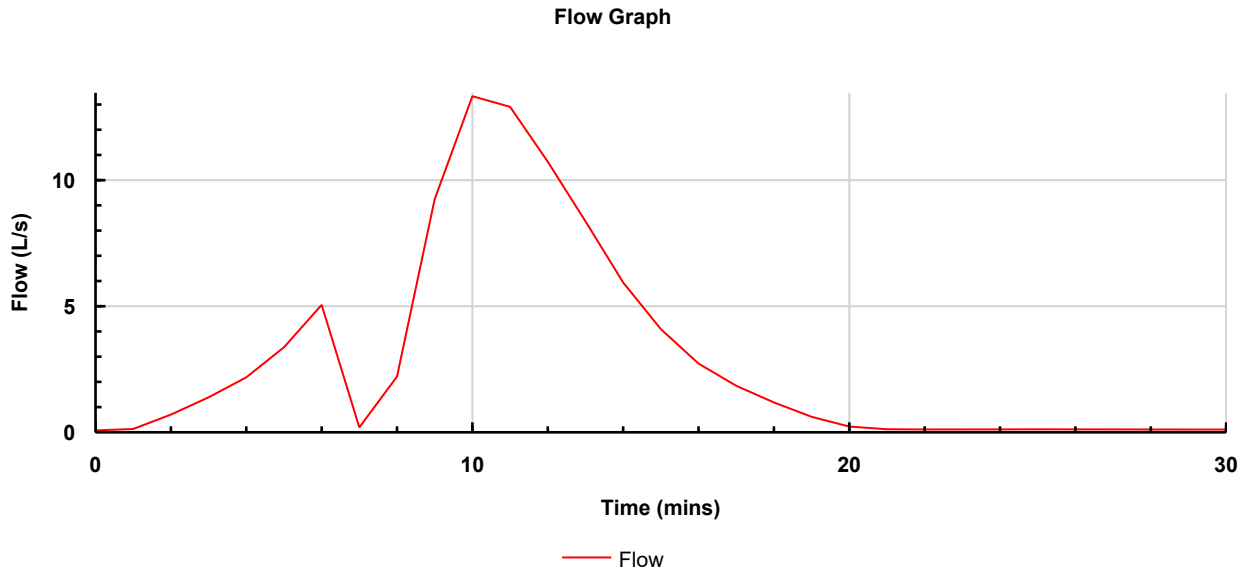


P2

Type : Pipe

Critical Storm: FSR: 100 years: Increase Rainfall (%): +20: 15 mins: Winter

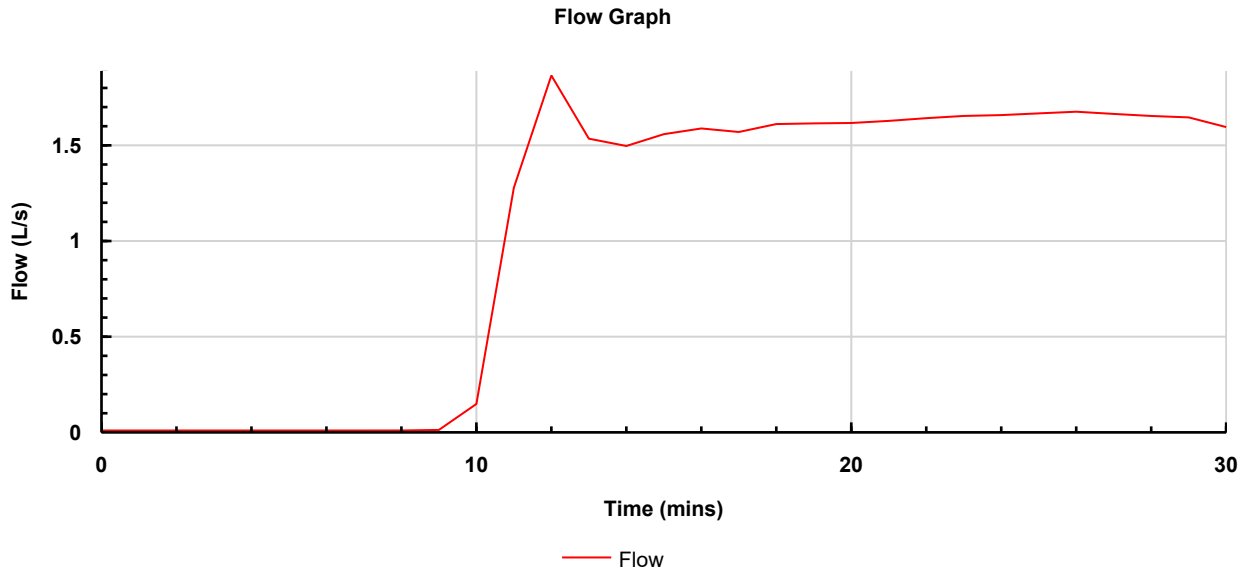
Graphs



P5 Type : Pipe

Critical Storm: FSR: 100 years: Increase Rainfall (%): +20: 15 mins: Summer

Graphs

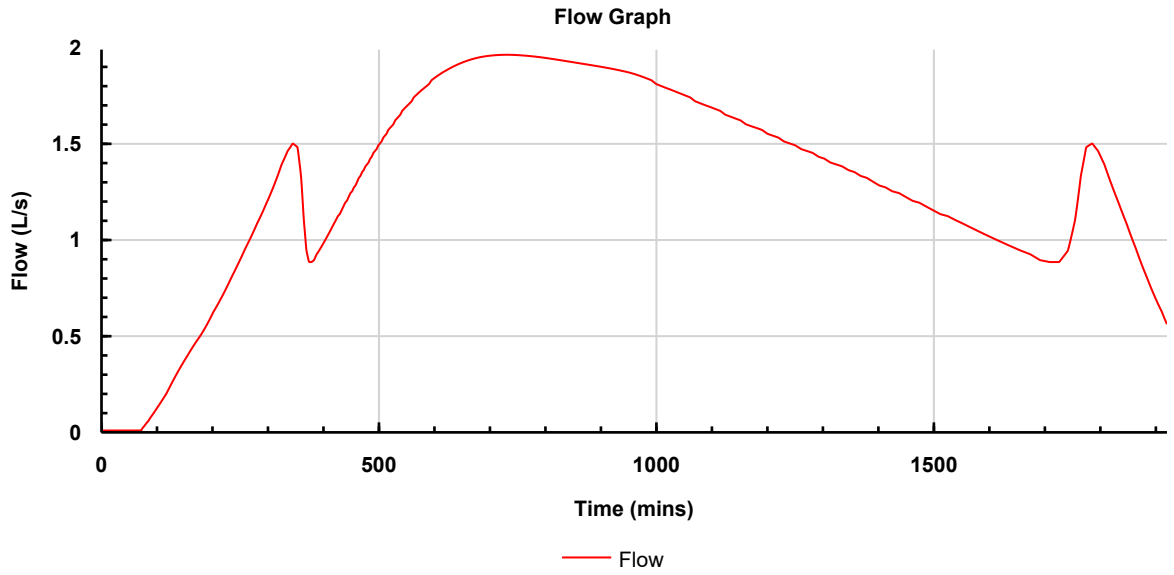


P6

Type : Pipe

Critical Storm: FSR: 100 years: Increase Rainfall (%): +20: 960 mins: Winter

Graphs

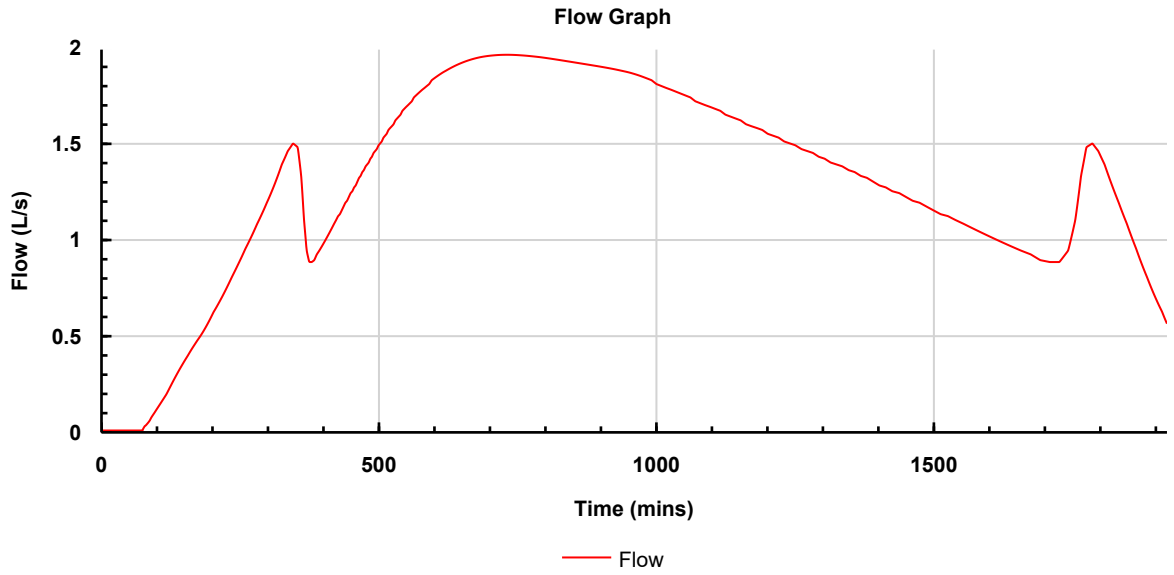


P7

Type : Pipe

Critical Storm: FSR: 100 years: Increase Rainfall (%): +20: 960 mins: Winter

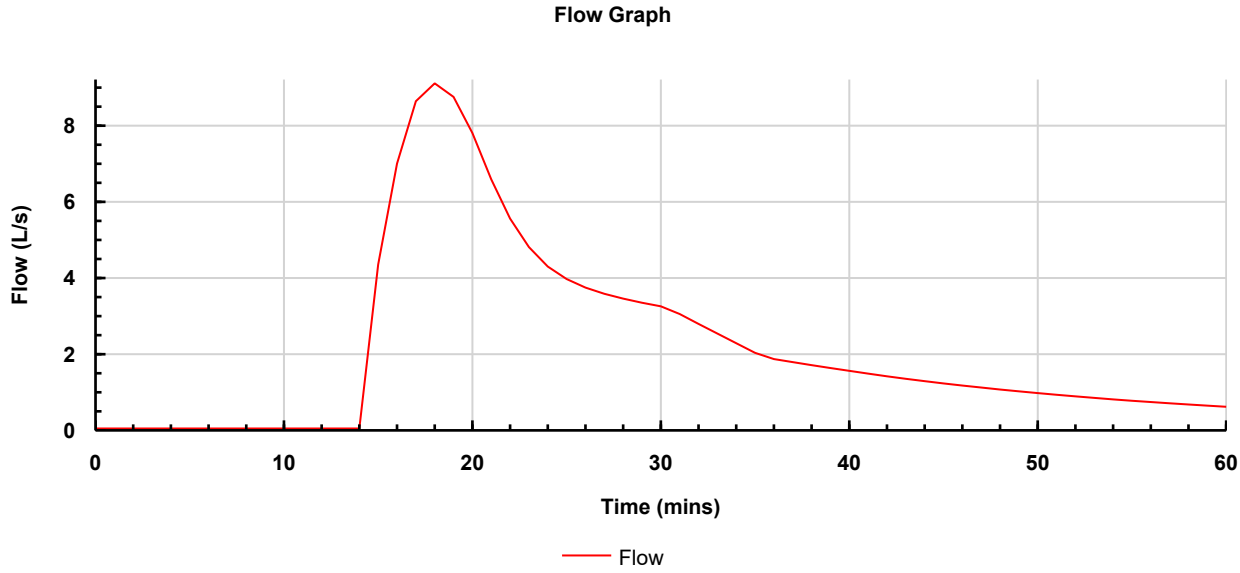
Graphs



P3 Type : Pipe

Critical Storm: FSR: 100 years: Increase Rainfall (%): +20: 30 mins: Summer

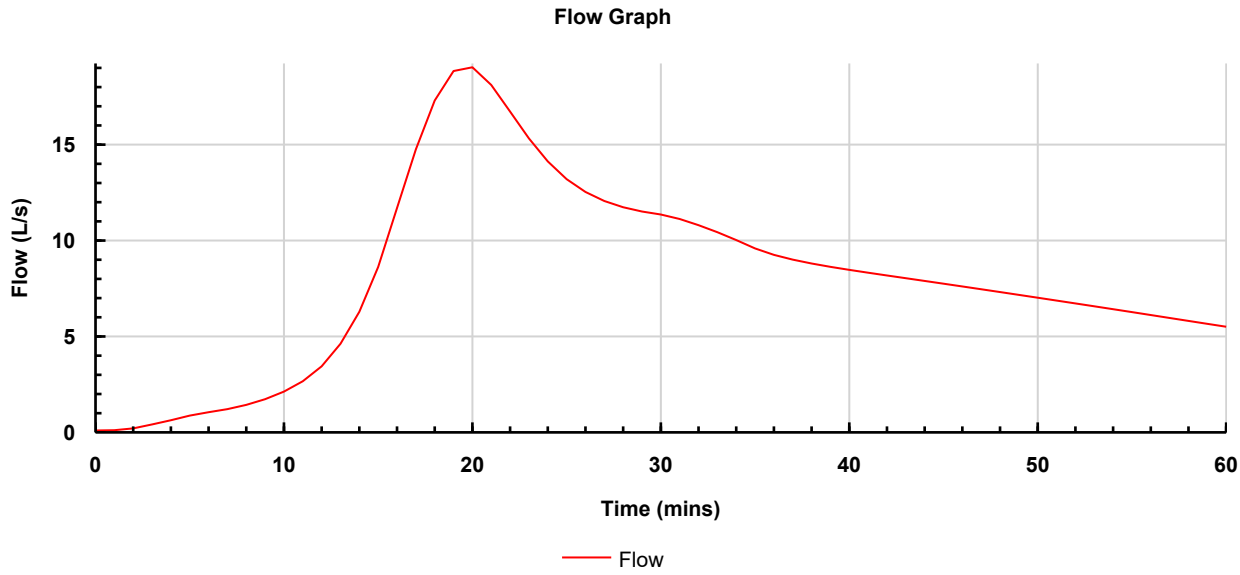
Graphs



P10
Critical Storm: FSR: 100 years: Increase Rainfall (%): +20: 30 mins: Summer

Type : Pipe

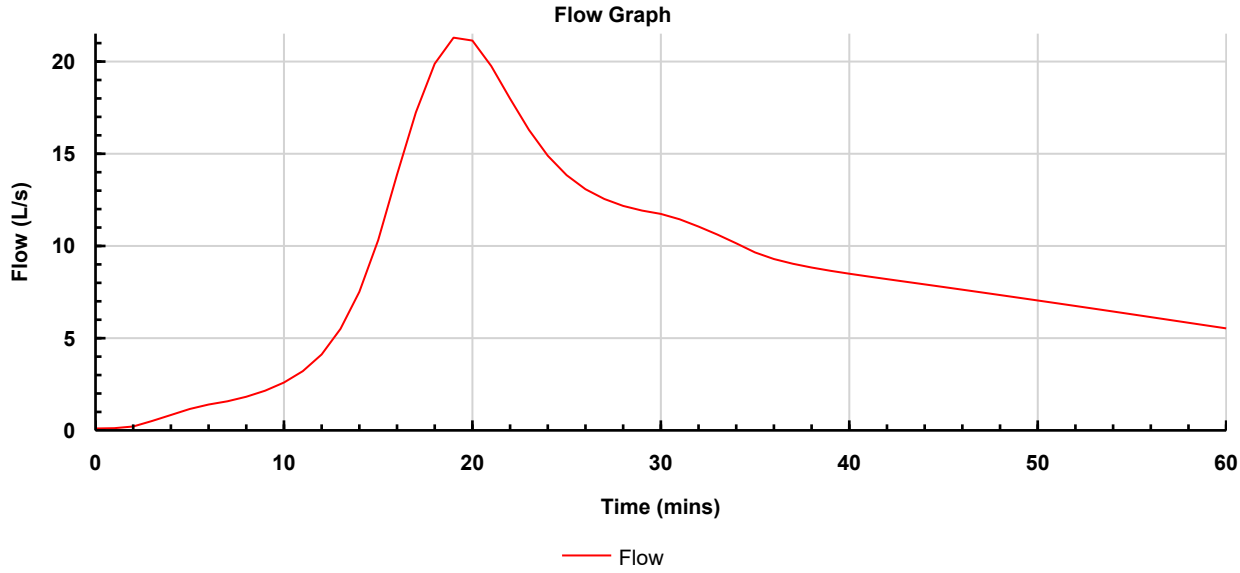
Graphs



P11 Type : Pipe

Critical Storm: FSR: 100 years: Increase Rainfall (%): +20: 30 mins: Summer

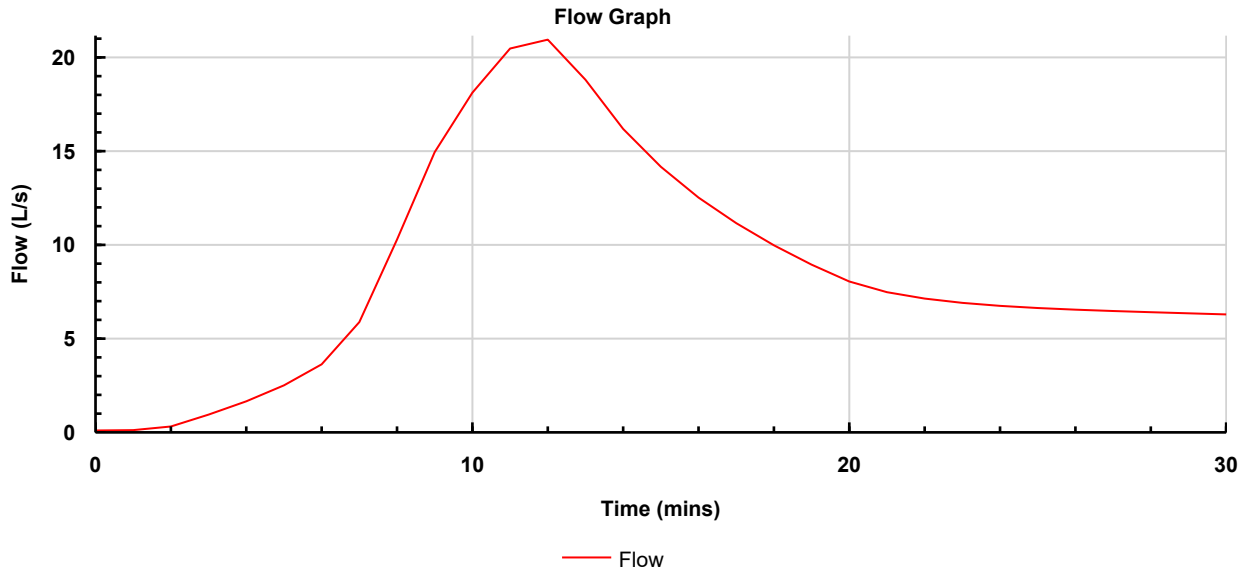
Graphs



P12 Type : Pipe

Critical Storm: FSR: 100 years: Increase Rainfall (%): +20: 15 mins: Summer

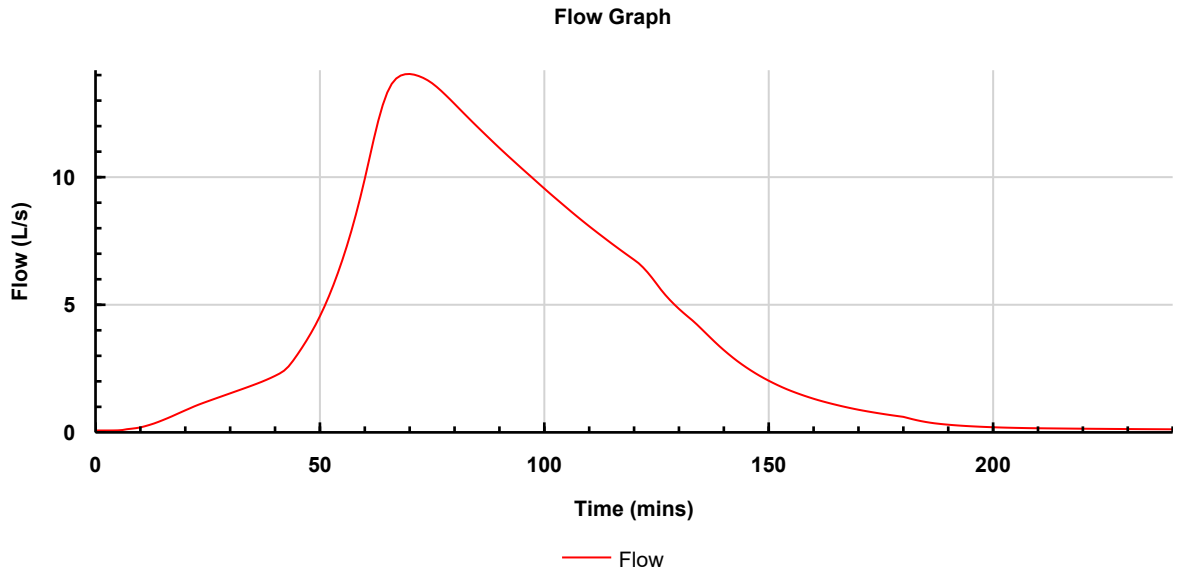
Graphs



P13 Type : Pipe

Critical Storm: FSR: 100 years: Increase Rainfall (%): +20: 120 mins: Summer

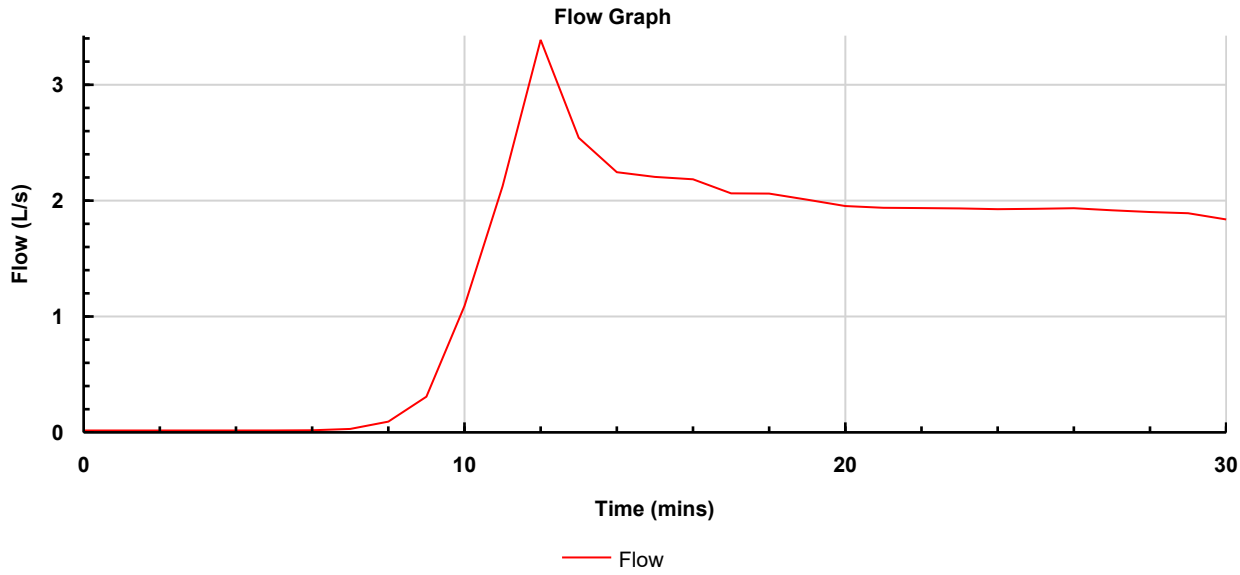
Graphs



P14 Type : Pipe

Critical Storm: FSR: 100 years: Increase Rainfall (%): +20: 15 mins: Summer

Graphs



Appendix D – Confirmation of Feasibility from Uisce Éireann

CONFIRMATION OF FEASIBILITY

Uisce Éireann
Bosca OP 448
Oifig Sheachadta na
Cathrach Theas
Cathair Chorcaí

Uisce Éireann
PO Box 448
South City
Delivery Office
Cork City

www.water.ie

Niall Fitzgerald

Tellengana
Blackrock Road
Cork
Co. Cork
T12 HP7R

19 November 2024

Our Ref: CDS24005250 Pre-Connection Enquiry
Cooneys Lane, Grange, Cork, Co. Cork

Dear Applicant/Agent,

We have completed the review of the Pre-Connection Enquiry.

Uisce Éireann has reviewed the pre-connection enquiry in relation to a Water connection for a Housing Development of 20 unit(s) at Cooneys Lane, Grange, Cork, Co. Cork **(the Development)**.

Based upon the details provided we can advise the following regarding connecting to the networks;

- **Water Connection** - Feasible without infrastructure upgrade by Uisce Éireann

This letter does not constitute an offer, in whole or in part, to provide a connection to any Uisce Éireann infrastructure. Before the Development can be connected to our network(s) you must submit a connection application and be granted and sign a connection agreement with Uisce Éireann.

As the network capacity changes constantly, this review is only valid at the time of its completion. As soon as planning permission has been granted for the Development, a completed connection application should be submitted. The connection application is available at www.water.ie/connections/get-connected/

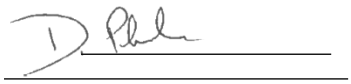
Where can you find more information?

- **Section A -** What is important to know?

This letter is issued to provide information about the current feasibility of the proposed connection(s) to Uisce Éireann's network(s). This is not a connection offer and capacity in Uisce Éireann's network(s) may only be secured by entering into a connection agreement with Uisce Éireann.

For any further information, visit **www.water.ie/connections, email newconnections@water.ie** or contact 1800 278 278**.**

Yours sincerely,



Dermot Phelan
Connections Delivery Manager

Section A - What is important to know?

What is important to know?	Why is this important?
Do you need a contract to connect?	• Yes, a contract is required to connect. This letter does not constitute a contract or an offer in whole or in part to provide a connection to Uisce Éireann's network(s). • Before the Development can connect to Uisce Éireann's network(s), you must submit a connection application and be granted and sign a connection agreement with Uisce Éireann.
When should I submit a Connection Application?	• A connection application should only be submitted after planning permission has been granted.
Where can I find information on connection charges?	• Uisce Éireann connection charges can be found at: https://www.water.ie/connections/information/charges/
Who will carry out the connection work?	• All works to Uisce Éireann's network(s), including works in the public space, must be carried out by Uisce Éireann*. *Where a Developer has been granted specific permission and has been issued a connection offer for Self-Lay in the Public Road/Area, they may complete the relevant connection works
Fire flow Requirements	• The Confirmation of Feasibility does not extend to fire flow requirements for the Development. Fire flow requirements are a matter for the Developer to determine. • **What to do?** - Contact the relevant Local Fire Authority
Plan for disposal of storm water	• The Confirmation of Feasibility does not extend to the management or disposal of storm water or ground waters. • **What to do?** - Contact the relevant Local Authority to discuss the management or disposal of proposed storm water or ground water discharges.
Where do I find details of Uisce Éireann's network(s)?	• Requests for maps showing Uisce Éireann's network(s) can be submitted to: datarequests@water.ie

What are the design requirements for the connection(s)?	• The design and construction of the Water pipes and related infrastructure to be installed in this Development shall comply with ***the Uisce Éireann Connections and Developer Services Standard Details and Codes of Practice,*** available at www.water.ie/connections
Trade Effluent Licensing	• Any person discharging trade effluent** to a sewer, must have a Trade Effluent Licence issued pursuant to section 16 of the Local Government (Water Pollution) Act, 1977 (as amended). • More information and an application form for a Trade Effluent License can be found at the following link: https://www.water.ie/business/trade-effluent/about/ **trade effluent is defined in the Local Government (Water Pollution) Act, 1977 (as amended)

CONFIRMATION OF FEASIBILITY

Uisce Éireann
Bosca OP 448
Oifig Sheachadta na
Cathrach Theas
Cathair Chorcaí

Uisce Éireann
PO Box 448
South City
Delivery Office
Cork City

www.water.ie

Niall Fitzgerald

Tellengana
Blackrock Road
Cork
Co. Cork
T12 HP7R

19 November 2024

Our Ref: CDS24007506 Pre-Connection Enquiry
Cooneys Lane, Grange, Cork, Co. Cork

Dear Applicant/Agent,

We have completed the review of the Pre-Connection Enquiry.

Uisce Éireann has reviewed the pre-connection enquiry in relation to a Wastewater connection for a Housing Development of 20 unit(s) at Cooneys Lane, Grange, Cork, Co. Cork **(the Development)**.

Based upon the details provided we can advise the following regarding connecting to the networks;

- **Wastewater Connection** - Feasible without infrastructure upgrade by Uisce Éireann

This letter does not constitute an offer, in whole or in part, to provide a connection to any Uisce Éireann infrastructure. Before the Development can be connected to our network(s) you must submit a connection application and be granted and sign a connection agreement with Uisce Éireann.

As the network capacity changes constantly, this review is only valid at the time of its completion. As soon as planning permission has been granted for the Development, a completed connection application should be submitted. The connection application is available at www.water.ie/connections/get-connected/

Where can you find more information?

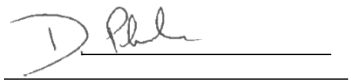
- **Section A -** What is important to know?

This letter is issued to provide information about the current feasibility of the proposed connection(s) to Uisce Éireann's network(s). This is not

a connection offer and capacity in Uisce Éireann's network(s) may only be secured by entering into a connection agreement with Uisce Éireann.

For any further information, visit **www.water.ie/connections**, **email newconnections@water.ie** or contact 1800 278 278**.**

Yours sincerely,



Dermot Phelan
Connections Delivery Manager

Section A - What is important to know?

What is important to know?	Why is this important?
Do you need a contract to connect?	• Yes, a contract is required to connect. This letter does not constitute a contract or an offer in whole or in part to provide a connection to Uisce Éireann's network(s). • Before the Development can connect to Uisce Éireann's network(s), you must submit a connection application and be granted and sign a connection agreement with Uisce Éireann.
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Where can I find information on connection charges?	• Uisce Éireann connection charges can be found at: https://www.water.ie/connections/information/charges/
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Plan for disposal of storm water	• The Confirmation of Feasibility does not extend to the management or disposal of storm water or ground waters. • **What to do?** - Contact the relevant Local Authority to discuss the management or disposal of proposed storm water or ground water discharges.
Where do I find details of Uisce Éireann's network(s)?	• Requests for maps showing Uisce Éireann's network(s) can be submitted to: datarequests@water.ie

What are the design requirements for the connection(s)?	• The design and construction of the Wastewater pipes and related infrastructure to be installed in this Development shall comply with ***the Uisce Éireann Connections and Developer Services Standard Details and Codes of Practice,*** available at www.water.ie/connections
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