ENVELOPE

STORMWATER MANAGEMENT PLAN

Mt Welcome

DOCUMENT CONTROL RECORD

CLIENT	Pukerua Property Group LP
PROJECT	Mt Welcome
PROJECT NO.	1753-02
DOCUMENT TYPE	R003v2-1753-02 Stormwater Management Plan
DATE ISSUED	11 March 2026
ADDRESS FOR SERVICE	Envelope Engineering Limited Level 1, 65 Cuba Street, Te Aro, Wellington
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ISSUE AND REVISION RECORD

DATE OF ISSUE	11 March 2026
STATUS	Final
ORIGINATOR	Kyle Dirse – Director / Senior Civil Engineer
REVIEWED	Andrew Jackson – Director, Civil
APPROVED FOR ISSUE	Kyle Dirse – Director / Senior Civil Engineer

1.0 EXECUTIVE SUMMARY

Envelope Engineering Ltd has been engaged to prepare this Stormwater Management Plan (SMP) to support the proposed Mt Welcome residential development, located south of Pukerua Bay within the Porirua Northern Growth Area (NGA).

This SMP has been prepared in accordance with the objectives and policies of the Proposed Porirua District Plan, the Wellington Water Regional Standard for Water Services (RSWS v3.1), and Greater Wellington Regional Council (GWRC) Plan Change 1.

The purpose of this SMP is to provide an integrated framework for the design, implementation, and long-term management of stormwater infrastructure within the site. It addresses the potential hydrological and water-quality effects associated with the proposed development and demonstrates how the proposed stormwater system achieves compliance with regional and local requirements. The SMP confirms that the proposed stormwater management approach:

- Maintains hydraulic neutrality, ensuring post-development peak flows do not exceed pre-development levels for all storm events up to and including the 1 % AEP event
- Provides stormwater treatment achieving at least 85% of the Mean Annual Runoff Volume (MARV)
- Reduces contaminants such as suspended solids, copper, and zinc through a treatment-train approach incorporating water-sensitive urban design
- Protects downstream watercourses and flood capacity, ensuring no increase in flood risk or erosion potential
- Confirms that the 1% AEP event can be safely conveyed via defined overland flow paths through the road network and stormwater management system, with no increase in flood risk to proposed lots, downstream properties, or infrastructure.
- Integrates stormwater design with the site's landform and ecological corridors, supporting environmental enhancement and long-term sustainability.

Stormwater Management Approach

- The proposed system adopts a treatment-train and water-sensitive design philosophy,
- Centralised raingardens treating road and allotment runoff
- Retention wetlands and attenuation ponds providing flow detention and controlled discharge to pre-development rates
- Primary and secondary conveyance networks designed for the 10 % AEP and 1 % AEP events (including climate-change allowances)
- Erosion and scour protection at all outlet structures
- Developer-maintained devices during staging to protect operational wetlands and raingardens until vesting to Porirua City Council / Wellington Water

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2.0 INTRODUCTION

2.1 GENERAL

The proposed Mt Welcome Development is located south of Pukerua Bay, within the Porirua Northern Growth Area (NGA). The site comprises currently undeveloped land identified for residential development.

This Stormwater Management Plan (SMP) provides the framework for the design and implementation of stormwater management measures required to support the development. It outlines the hydrological, hydraulic, and water-quality strategies necessary to achieve compliance with Wellington Water's Regional Standard for Water Services and the Greater Wellington Regional Council Plan Change 1 requirements.

This SMP also includes a Stormwater Impact Assessment required under Schedule 29 of PC1, addressing all relevant matters including hydrology, water quality, flooding, erosion, ecological, and cultural considerations.

2.2 SITE DESCRIPTION

The site is located at 422 State Highway 59, Pukerua Bay, and encompasses a total area of 205.60 hectares. It formally comprises the following land parcels:

- Part Lot 1 DP 89102 (4.38 ha)
- Lot 2 DP 891020 (5.64 ha)
- Lot 1 DP 534864 (55.33 ha)
- Lot 2 DP 534864 (140.25 ha)
- Lot 1 DP 608433, Lot 1000 DP 608433 (34 Muri Road)
- Road Reserve (SH59 Corridor)

References to "the site" within this report refer collectively to all seven allotments, unless stated otherwise.

The site is situated in a rural area south of Pukerua Bay and north of Plimmerton, within the Porirua City boundaries in the Wellington region. It is bounded by State Highway 59 to the west and three adjoining land blocks to the north, east, and south.

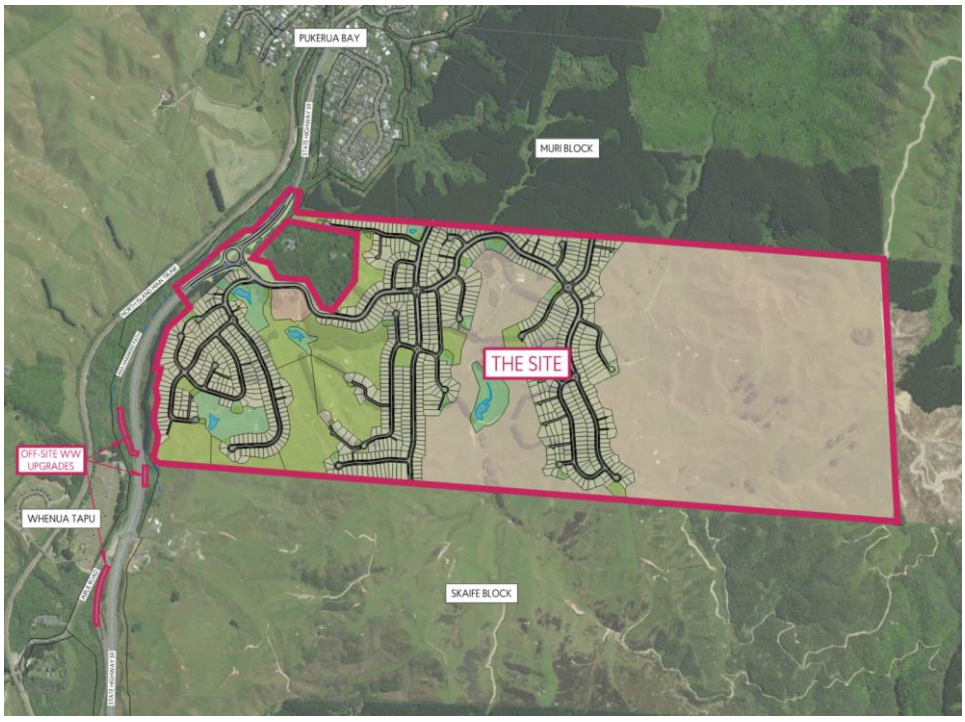


Figure 1. Site Extents Plan – Entire Site.

2.3 RELATIONSHIP TO OTHER PLANS

This report should be read in conjunction with the following plans and reports:

- Envelope Engineering Infrastructure Report.
- Envelope Engineering Draft ECMP
- Envelope Engineering Flood Assessment
- BlueGreen Ecology Assessment.
- Engeo Geotechnical Engineering Report.
- PDP Hydrological Assessment
- PDP Water Quality Assessment
- PDP Preliminary Site Investigation

3.0 SITE EVALUATION

3.1 SITE HISTORY

The site is currently used as a deer farm, comprising predominantly pastoral grassland with several existing homesteads, farm sheds, and associated agricultural infrastructure.

Historical aerial imagery dating back to 1942 shows the land as open pasture, and it has remained pasture since that time, with no significant changes in land use or built development.

3.2 DATA SOURCES & INVESTIGATIONS

The below table is a summary of the data sources and investigations that have informed this SMP.

Table 1. Data Sources

Existing Site Data	Source of Data
Topography	Porirua LiDAR 2023 Envelope topographical survey around site features
Geotechnical	ENGEO Geotechnical Investigation – Mt Welcome Development - Project Number 19796.000.002
Existing Stormwater Network	PCC GIS Maps Envelope site investigations
Streams	BlueGreen Ecological Assessment
Flood Hazards	PCC GIS Maps
Ecological	BlueGreen Ecological Assessment
Hydrological	PDP Hydrological Assessment
Contaminated Land	PDP Preliminary Site Investigation

3.3 SITE TOPOGRAPHY

The topography is varied and includes some land that is moderately steep and undulating, with elevations ranging from approximately RL 50 m near the western boundary (adjacent to SH59) to RL 300 m at the eastern extent of the site. The landform includes three prominent high points separated by two gullies. The western portion of the site comprises of rolling hills and shallow gullies, while the central and eastern areas are steeper, with slopes typically between 26° and 45°, and locally exceeding 45° in areas.

3.4 ECOLOGY AND ENVIRONMENTAL

BlueGreen Ecology have prepared the ecological assessment for the site. Their investigations identified that the existing streams, wetlands, and terrestrial habitats are of low ecological value, being largely exotic and modified by historic farming activities.

Overall, BlueGreen Ecology assess that the development will achieve a net ecological gain through riparian enhancement, stormwater quality treatment, and the removal of farming practices that currently degrade ecological values.

3.5 GEOTECHNICAL

ENGEO have completed a geotechnical report for the Mt Welcome development, which should be read in conjunction with this report. The key points relevant to the proposed civil works are summarised below:

- The site is located approximately 500 m from the mapped trace of the Pukerua Fault, within a seismically active area that also includes the Ohariu and Wellington Faults. While the site is not directly traversed by a known fault, ground rupture and regional subsidence could occur during a major seismic event on nearby or unmapped faults.
- Liquefaction risk is considered low within the developable areas but may occur locally in low-lying gullies and valley floors.
- Groundwater was recorded between approximately 0.4 m and 3.8 m below ground level, varying seasonally and by location. Continued groundwater monitoring is recommended to inform the detailed design of earthworks, stormwater ponds, and slope stability assessments.
- Soakage had not been deemed a suitable method of discharge, and no tests have been completed.
- Slopes steeper than 25 degrees require specific engineering assessment and mitigation where development is proposed above or below them. Specifically Engineered Design (SED) zones should be applied in these areas.
- Most surficial soils and Greywacke rock are suitable for reuse as engineered fill, subject to verification and field compaction testing.
- Detailed design of the proposed stormwater retention ponds and adjacent embankments is required by a chartered professional engineer.
- Installation of piezometers for ongoing groundwater monitoring for a minimum of four months prior to major earthworks is recommended to support final design and construction staging.

3.6 CONTAMINATION ASSESSMENT

Pattle Delamore Partners (PDP) have been engaged to carry out a Preliminary Site Investigation (PSI) to assess the risk of any previous land activities on the health of future residents. The investigation identified potential contamination sources from historical sheep dip/spray race operations and from older buildings that may have contributed asbestos and lead residues to surrounding soils.

PDP recommend that areas associated with these potential HAIL activities are subject to a Detailed Site Investigation (DSI) to confirm the extent of contamination and whether the National Environmental Standard for Assessing and Managing Contaminants in Soil (NESCS) will be triggered.

3.7 EXISTING HYDROLOGY

The Mt Welcome development lies within the Porirua Harbour Freshwater Management Area (FMA). The site discharges into four main catchments:

- Taupō Stream (T1, T2, T3, T)
- Kakaho Stream West
- Kakaho Stream East (K)
- Waimapihi Stream (Muri) (M)



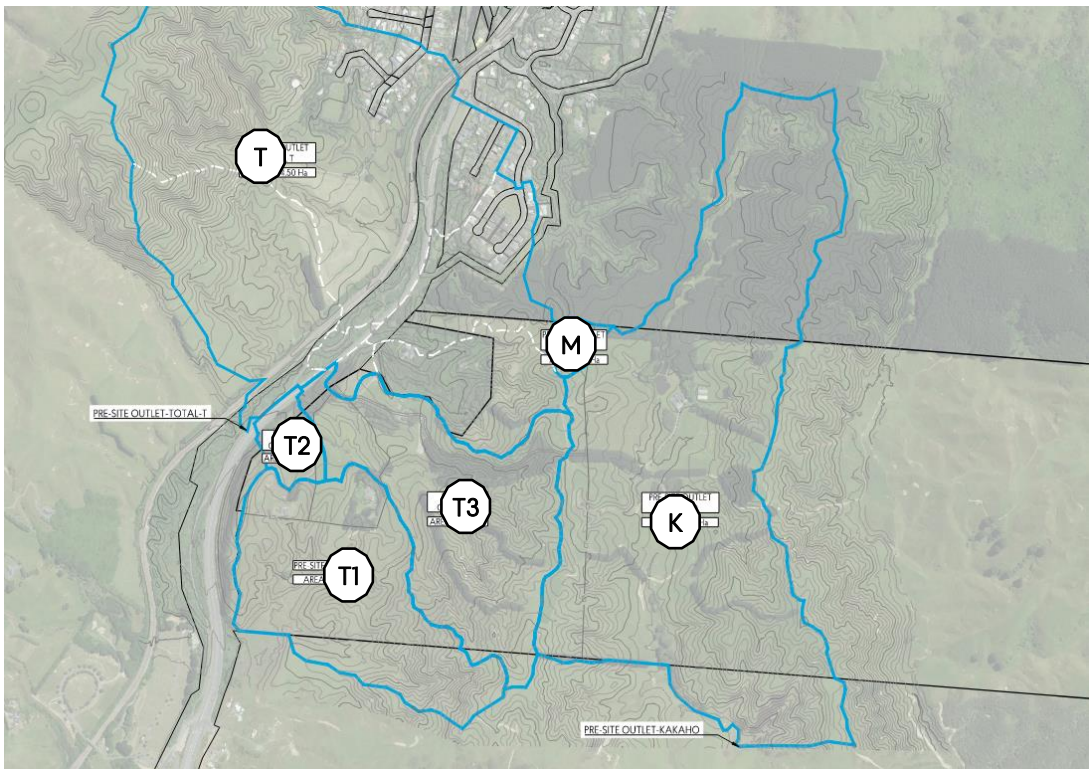


Figure 2. Existing Catchments

The pre-development catchments and their associated discharge points used in this assessment are shown in Figure 2. Further hydrological detail for each catchment is available in the PDP Hydrology Report. Catchment plans are provided on Sheet 4600 of the Civil Engineering drawings in Appendix 1.

3.7.1 TAUPŌ STREAM

The Taupō Stream catchment discharges west and south contributing to the headwaters of the Taupō Stream and Taupō Swamp. The catchment is divided into three sub-catchments all of which flow toward the Taupō Swamp complex, a regionally significant lowland wetland. The wetland is recognised for its high ecological and hydrological value and is a key receiving environment for stormwater generated from the site.

We have labelled the primary control catchments as **T1, T2, and T3**, representing the development discharge points immediately upstream of the receiving stream. **T** (the total catchment) represents the combined control point located slightly downstream of all discharge outlets and includes flows from the SH59 intersection and the upstream catchment. These control points are referenced throughout the report to compare pre- and post-development conditions.

3.7.2 KAKAHO STREAM CATCHMENTS (WEST AND EAST)

The Kakaho Stream West and Kakaho Stream East catchments discharge south toward the Kakaho Stream, which in turn flows into the Pāuatahanui Arm of Te Awarua-o-Porirua Harbour approximately 4.6 km downstream. This harbour is a sensitive estuarine environment, with elevated sedimentation and contaminant sensitivity identified in regional studies.

Upstream of the site, the Muri Road catchment remains largely rural, comprising commercial pine forestry and Significant Natural Areas (SNAs). Active pine harvesting is currently underway. Within the site, future development will follow a similar approach to the adjoining Mt Welcome area, with runoff conveyed through Kakaho stream catchments.

This catchment has been labelled **K**. For the civil engineering design, only the western portion has been assessed, as this area is attenuated within the proposed retention wetlands.

3.7.3 WAIMAPIHI STREAM CATCHMENT

A small portion of the northern site drains into the upper Waimapihi Stream catchment, flowing northwards through the Muri Road block before ultimately discharging to the coast at Pukerua Bay.

This catchment has been labelled **M** for reference.

3.8 MONITORING

Baseline water-quality and hydrological monitoring is being undertaken by PDP to characterise existing conditions within the receiving environments.

Existing water-quality data from the Taupō Swamp catchment, collected between July 2020 and August 2025, has been used to establish baseline conditions for the Taupō Stream and Swamp complex. Results and interpretation are provided in the PDP Hydrology and Water Quality Assessment.

At present, no long-term monitoring data is available within the Kakaho Stream catchments.

To understand the existing hydrological conditions at the site, PDP has installed water quality baseline monitoring stations within the wetlands and streams discharging from the site. The monitoring sites of relevance to this report are three surface water monitoring locations SW01, SW02 and SW03, which continuously measure turbidity in the streams at the boundary extent of the site. These key areas can be seen in figure 2 below.



Figure 3. PDP Key Surface Monitoring Locations

3.9 EXISTING RETICULATION NETWORK

There is no existing vested, piped stormwater infrastructure at the site. However, there are 20 existing culverts within area. The majority are related to existing agriculture activities and enable farm tracks through the low-lying areas. These have minimal effect or use on the proposed development and will generally be remove and replaced where not supporting hydrological, ecological functions or ongoing agricultural access. Existing culvert plans can be found within the Civil Design plans in Appendix 1 and are showed in Figure 4 below.

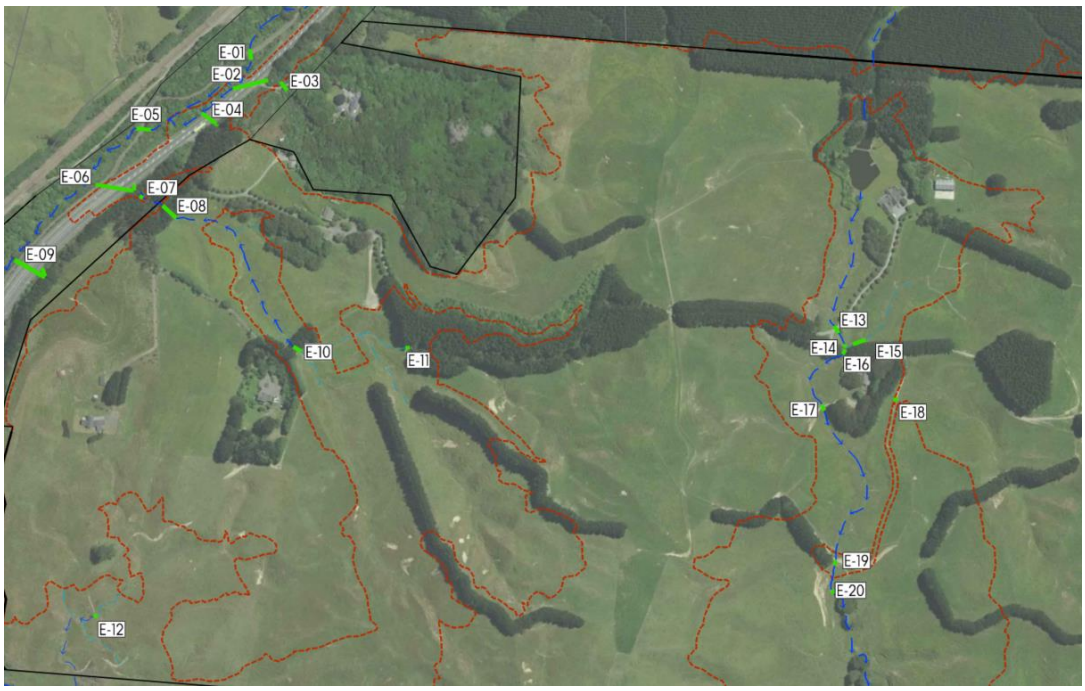


Figure 4. Site Wide Existing Culvert Locations

There are 8 culverts of varying sizes directly adjacent to the site along SH59 The culverts and narrow channels create constrictions which creates a flood risk on site. These culverts convey all stormwater towards the Taupo Swamp downstream. These culverts are further detailed within the Envelope Infrastructure Report and are shown in Figure 5 below.

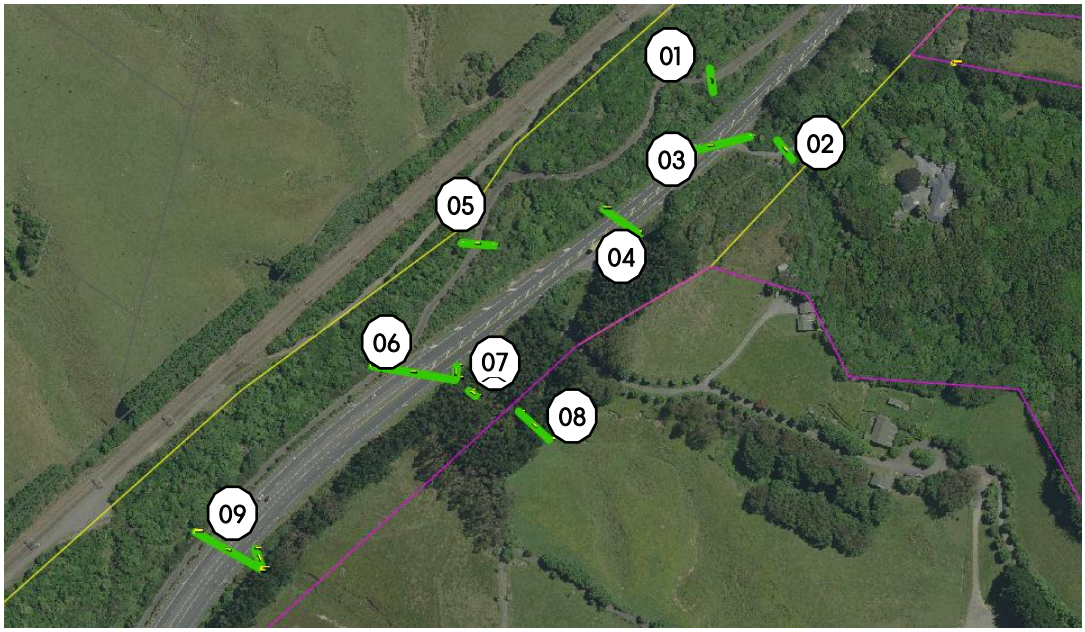


Figure 5. SH59 Existing Culvert Locations

Table 2 summarises the existing culvert dimensions, including size, length, and grade, based on field investigations and topographical survey data where access was available.

Table 2. Existing Culverts

Culvert ID	Diameter	Length	Grade	Note
E-01	900mm	14.5m	1.20%	No Change
E-02	375mm	48m	1.30%	To Be Removed
E-03	375mm	15m	4.70%	No Change
E-04	300mm	25m	---	To Be Removed
E-05	900mm	20m	1.30%	No Change
E-06	600mm	52m	3.60%	To Be Extended East
E-07	900mm	6m	4.00%	To Be Removed
E-08	675mm	25m	2.10%	No Change
E-09	450mm	45m	0.40%	No Change
E-10	525mm	12m	---	No Change
E-11	300mm	6m	3.60%	No Change
E-12	525mm	6m	5.00%	No Change
E-13	900mm	12m	1.80%	No Change
E-14	675mm	4.5m	0.00%	No Change
E-15	450mm	18.5m	4.00%	No Change
E-16	750mm	7m	5.50%	No Change
E-17	675mm	9m	1.60%	No Change
E-18	375mm	9m	3.90%	No Change
E-19	750mm	6.2m	1.80%	To Be Removed
E-20	750mm	6.2m	12.60%	No Change

3.10 EXISTING STREAMS

Stream corridors are mapped within the Proposed Porirua District Plan (PDP) and Wellington Water hydrology layers, which identify several defined stream environments across the Mt Welcome site.

These mapped features represent modelled drainage lines derived from LiDAR topography and catchment analysis and indicate where permanent or intermittent streams may occur.

Field assessments undertaken by PDP and BlueGreen Ecology have refined this mapping to confirm the actual extent, alignment, and flow permanence of the on-site streams.

The verified stream mapping and classifications have been used to define hydrological sub-catchments and inform the stormwater management design, ensuring that discharge locations correspond with existing flow paths and that downstream hydrology is maintained.



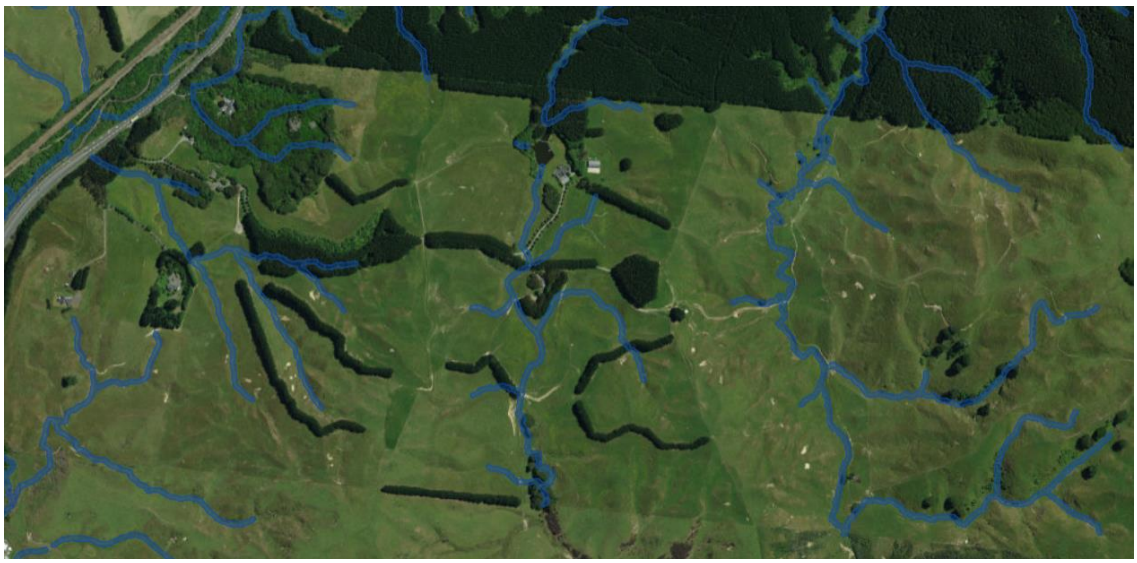


Figure 6. Porirua Proposed District Plan Stream Corridors

3.11 EXISTING WETLANDS

Existing wetlands within the site have been mapped by BlueGreen Ecology. Several natural and modified wetland features occur within and downstream of the Mt Welcome site, primarily associated with the Taupō Swamp complex and the headwaters of the Kākaho Stream.

These wetlands form part of the wider Porirua Harbour catchment network and are recognised as being of high ecological value. Further detail on wetland classification, extent, and hydrological monitoring is provided by PDP and BlueGreen Ecology.

3.12 EXISTING OVERLAND FLOW PATHS

The western side of the block discharges into the Taupo swamp downstream. This western catchment is conveyed through a series of stormwater culverts that have been installed under SH59. These culverts are generally undersized and would contribute to the localised flooding seen in Figure 7.

Flood modelling undertaken as part of the project flood risk assessment confirms that overland flow paths are generally confined to the natural valley systems and drainage corridors within the site. Existing overland flow paths are therefore not a dominant feature across the developable areas.

3.13 EXISTING FLOOD HAZARDS

Flood hazard areas are identified in both the Proposed Porirua District Plan and the Wellington Water “Rainfall Risks in Porirua” GIS database. The mapped flood extents generally align with the Flood Management Area (FMA) boundaries shown in the District Plan.

Minor flood hazards have been identified within low-lying gullies near SH59, as shown on the Wellington Water 1% AEP flood maps (refer to Figure 6). The flood risk is limited in extent and does not materially affect the proposed development or create downstream impacts. Some localised ponding occurs along the State Highway 59 corridor, where culverts are undersized and partially blocked by sediment, restricting hydraulic capacity. These areas will be retained as stormwater reserves, with no residential development proposed within them.

Additionally, some localised flooding occurs along the existing SH59 corridor and adjacent stream channels.



Figure 7. Wellington Water Flood Map

Updated draft flood maps are being prepared by Wellington Water and Porirua City Council for the Mana and Pukerua Bay catchments, incorporating overland flow paths for the Mt Welcome area. Preliminary review indicates that the draft mapping may over-represent flood ponding in the upper site where topography does not support such accumulation. The maps remain in draft form and are expected to be refined prior to being made operative under the District Plan.

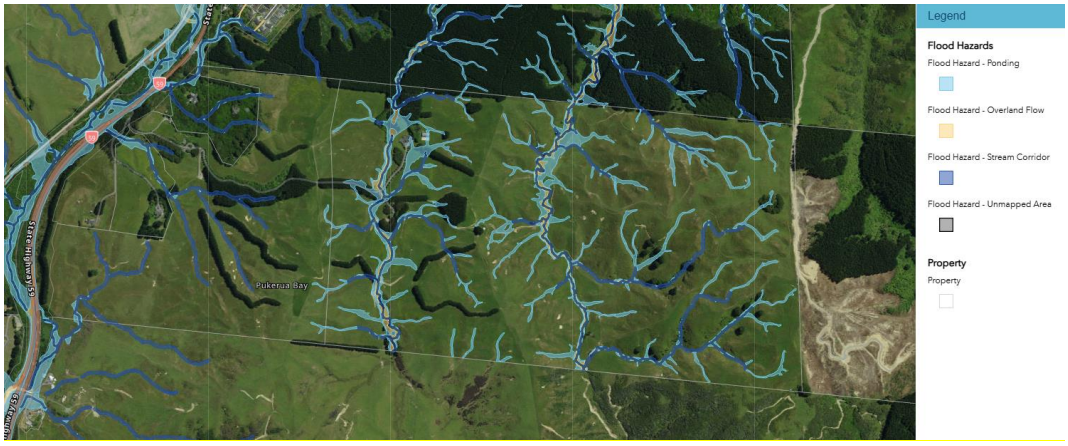


Figure 8. Porirua City Flood Maps (Draft)

Due to the site's elevated topography, flooding is not expected to pose a risk to the development area. Some localised flooding occurs along SH59 and will be addressed in coordination with NZTA during detailed design to confirm suitable mitigation measures and acceptable flood depths.

The Taupō Stream catchment ICM model provided by WWL was used as the basis for the Envelope flood risk assessment. The pre-development scenario results are presented in the report included in Appendix 5.

4.0 MANA WHENUA VALUES

4.1.1 GENERAL

This Stormwater Management Plan has been prepared to manage freshwater values in a manner consistent with Te Mana o te Wai and the principles of the National Policy Statement for Freshwater Management.

It aligns with the Te Awarua-o-Porirua Whaitua Implementation Programme and the freshwater objectives and policies of the Wellington Regional Natural Resources Plan.

The stormwater management approach recognises and provides for mana whenua values as expressed by Ngāti Toa Rangatira, the iwi with mana whenua status over the Porirua catchment. The

use of water-sensitive design, together with stream and wetland enhancement measures, is intended to sustain and enhance mauri and support the long-term health of receiving environments.

The proposed management approach seeks to uphold kaitiakitanga through protection of water quality, restoration of hydrological function, and enhancement of ecological and cultural values associated with downstream environments such as Taupō Swamp and Te Awarua-o-Porirua Harbour.

4.1.2 CONSULTATION

Engagement with Ngāti Toa Rangatira has been ongoing throughout the design and development process, ensuring iwi values and cultural considerations are incorporated into the design and implementation of the project. A summary of engagement is outlined below:

- 10 June 2025 – Initial meeting: Project overview, timeframes, process, and discussion of key issues to work through.
- 19 June 2025 – Site visit: Initial site orientation and walkover of the Lower Terrace to familiarise iwi representatives with the project area.
- 25 September 2025 – Hui: Progress update in response to further information sought on Structure Plan compliance, stormwater management, ecology, and works in waterways.
- 13 October 2025 – Site visit: Follow-up visit to discuss key areas of interest including the design of the roundabout, approach to ecology and archaeology, attended by the applicant's planning, ecology, archaeology, and engineering experts.
- 05 November 2025 – CVA: A Cultural Values Assessment was received and reviewed by the project team, which provided several comments on the development proposal and highlighted a number of matters. A follow-up meeting was subsequently scheduled, and these matters will be addressed through the AEE.

4.1.3 WHAITUA

The site lies within the Te Awarua-o-Porirua Whaitua, which encompasses the catchments draining to Porirua Harbour.

The Te Awarua-o-Porirua Whaitua Implementation Programme (2019) establishes outcomes and recommendations focused on improving water quality, managing sedimentation, and restoring ecological integrity within the harbour and its tributaries.

This Stormwater Management Plan supports those objectives by:

- Managing flows to achieve hydraulic neutrality and minimise erosion;
- Providing water-quality treatment for road and lot runoff through raingardens and retention wetlands
- Incorporating biodiversity and riparian planting to enhance ecological resilience and habitat connectivity.

The proposed design approach is therefore consistent with the Whaitua's objectives to protect the mauri of Te Awarua-o-Porirua Harbour and support sustainable water management across the wider catchment.

5.0 DEVELOPMENT OVERVIEW

5.1 DEVELOPMENT

The proposed development comprises approximately 950 residential allotments ranging in size from 316m² to 2,386m², enabling the construction of 950 future dwellings with an average lot size of around 523m². The development also includes a commercial centre to serve the new local community, together with associated three-waters infrastructure (wastewater, including storage facilities; stormwater management systems; and water reticulation), roading, and a connected network of pedestrian and cycling trails.

Earthworks will be undertaken to establish suitable finished surface levels for building platforms, roads, parks, and drainage systems. The proposal will also incorporate extensive landscaping and public open spaces, including recreation and drainage reserves for stormwater attenuation and conveyance. A new intersection with State Highway 59 will provide primary access to the site and integrate the development with the wider transport network.

5.2 STAGING

Development will occur in staged phases, allowing a progressive and coordinated delivery of housing and infrastructure. Indicative staging is shown on the drawings provided in Appendix 1. Staging will be managed to ensure that appropriate infrastructure (stormwater, wastewater, water supply, and access) is available for each stage prior to release. Additional staging details are provided in the accompanying Envelope Infrastructure Report.

5.3 IMPERVIOUSNESS ASSUMPTIONS

For stormwater modelling purposes, the site has been represented as 0 % impervious under pre-development conditions, reflecting its current pastoral state apart from minor structures. Two small external catchments from SH59 (assumed 90 % impervious) drain into the main gully before entering existing highway culverts. These have been included in the hydrological model to assess existing culvert capacity and downstream performance.

The proposed development will primarily comprise detached residential dwellings. The principal sources of impervious area within the residential lots will be building roofs, driveways, and paved outdoor areas.

In accordance with the Porirua Medium Density Residential Zone (MRZ) provisions, a maximum site coverage of 50 % applies to residential lots, providing sufficient allowance for dwellings and driveways while maintaining compliance with permeability standards. The District Plan also requires a minimum proportion of permeable surface to be retained within each lot to support infiltration and landscaping.

Roading will contribute additional impervious surfaces through sealed carriageways, kerbs, and footpaths. This has been allowed for based on the proposed road cross sections and layout.

For design purposes, the following imperviousness assumptions have been adopted:

Table 3: Post Developed Impervious

Catchment	Impervious %
Residential Lots	75%
Roads	85%
Commercial Area	90%
Recreational Reserves	0%

Imperviousness is expected to remain consistent across all stages of development and has been used to inform the hydrological modelling and stormwater management design.

6.0 STORMWATER MANAGEMENT

6.1 PRINCIPLES OF STORMWATER MANAGEMENT

The stormwater management approach for the Mt Welcome development has been guided by the principles of integrated catchment management, water-sensitive urban design, and hydraulic neutrality, consistent with the Wellington Water RSWS v3.1 and GWRC Plan Change 1. These principles ensure that stormwater is managed in a way that protects downstream environments, enhances ecological and cultural values, and supports long-term asset resilience and maintainability.

Key principles applied to this development include:

- Stormwater treatment and attenuation are centralised, minimising the use of on-lot devices and reducing operation and maintenance costs.
- Post-development catchments are aligned with pre-development catchments to maintain existing discharges and downstream receiving environments
- Apply Safety in Design principles and identify project specific risks
- Support of development staging to ensure the network can be constructed and commission progressively
- Recognise and protect the natural environment with low impact and water sensitive design
- Incorporate cultural values through engagement with mana whenua

6.2 DESIGN APPROACH

The development will increase the extent of impervious surfaces, which has the potential to elevate stormwater runoff to downstream environments if not appropriately mitigated. Mitigation measures have been incorporated into the civil design and verified through detailed stormwater modelling.

Table 4 summarises the design parameters used for stormwater conveyance, peak-flow attenuation, and flood-risk management.

Table 4. Hydrology & Flooding Design Criteria.

Design Criteria	Parameter	Reference
Primary Network	10% AEP + CC	Wellington Water Regional Standard for Water Services (RSWS), Version 3.0.
Secondary Network	1% AEP + CC	WWL RSWS v3.0
Freeboard	Residential Buildings – 0.3m	WWL RSWS v3.0
Attenuation	Hydraulic Neutrality of peak flows up to 1% AEP event	WWL RSWS v3.0
Rainfall	HIRDS RCP 6.0 2081 – 2100	NIWA HIRDS
Retention (Target)	85% Mean Annual Runoff Volume (MARV)	GWRC Plan Change 1 – Schedule 29
Water Sensitive Design	To meet WSD objectives	WWL Design for Stormwater: Treatment Device Design Guide (2021)

Detailed Hydrology and Hydraulic Modelling results are presented in Section 7 of this report.

6.3 PERFORMANCE CRITERIA

The Porirua District Plan, Wellington Water RSWS v3.1, and GWRC Plan Change 1 (Schedule 29) outline key requirements for stormwater management in subdivision and land-development projects. The design achieves compliance with these requirements through the following measures:

- A site-specific hydrologic and hydraulic assessment showing how stormwater will be collected, conveyed, treated, attenuated, and discharged in accordance with RSWS and PC1 hydrological control standards.
- Design all internal stormwater networks, overland flow paths, treatment, and attenuation facilities to integrate with the existing public network and comply with RSWS
- Provide stormwater treatment in accordance with GWRC Plan Change 1 and the Wellington Water Design for Stormwater: Treatment Device Design Guide, achieving at least 85% MARV treatment and target contaminant-load reductions.
- Implement erosion and sediment controls consistent with GWRC Erosion and Sediment Control Guidelines to protect treatment devices and downstream environments during construction.



- Ensure building platforms enable dwelling construction with a minimum 200mm freeboard above the 1 % AEP flood level
- Maintain on-site attenuation and hydraulic neutrality to ensure no increase in downstream flood risk.
- Recognise and provide for ecological and cultural values of the receiving environment and define long-term maintenance responsibilities consistent with Wellington Water's operation and maintenance expectations.

6.4 TREATMENT TRAIN APPROACH

The design of the stormwater piped network, including sizing and hydraulic calculations, is provided in the Envelope Infrastructure Report. The proposed stormwater management system is summarised as follows:

1. Lot Runoff (10% AEP): Stormwater from residential lots is collected via downpipes and lateral connections and discharged into the underground piped network.
2. Road Runoff (10% AEP): Stormwater from roads is captured through catchpits and conveyed into the same piped network.
3. Major Flow (1% AEP): During larger events, overland flow will be conveyed safely along road corridors and directed to downstream attenuation devices.
4. Primary Treatment: The piped network discharges to centralised bioretention basins (raingardens) sized to treat 85% MARV of the contributing impervious catchment. Larger events bypass the raingarden via an orifice and dedicated bypass pipe.
5. Secondary Treatment / Conveyance: Treated flows and bypass flows are conveyed to wetland retention ponds, while some smaller sub-catchments discharge directly to gullies where maintaining existing flow is required.
6. Attenuation and Storage: The wetland retention ponds provide both water-quality and quantity control—retaining and detaining runoff from frequent, low-intensity events and storing flows up to the 1% AEP storm.
7. Discharge: The ponds release flows back to existing watercourses at pre-development discharge rates, maintaining hydraulic neutrality and improving downstream water quality.



6.5 PRIMARY NETWORK

Stormwater runoff from events up to 10% AEP (with climate-change allowance) will be conveyed through the primary piped network and discharged to the retention wetlands located at 4 different locations within the development area. Due to the steep topography of the site, the proposed network has additional capacity to service greater events then the 10% AEP.

Catchpits are positioned at low points and regular intervals along the road corridors to capture runoff efficiently. Each residential lot will be provided with a lateral connection to the public piped stormwater network. The proposed network layout is shown on the 4000-series design drawings (Appendix 1).

The primary network discharges to centralised bioretention devices (raingardens), which have been designed with low-flow and high-flow outlets:

- Low-flow outlets convey runoff to the raingardens, sized for the water-quality flow event as defined in Wellington Water's Design for Stormwater: Treatment Device Design Guide. The water-quality flow has been calculated as 10 mm of rainfall over the contributing calculated water quality area.

- High-flow bypasses divert flows exceeding the water-quality event directly to the downstream outlet, ensuring bypass flows are conveyed without compromising treatment performance.

The raingarden outlets and associated high-flow bypasses combine and discharge at multiple outlet locations across the site. These discharge points have been strategically positioned along existing flow paths to maintain the site's pre-development hydrological flows. These outlet locations have been confirmed in consultation with PDP and BlueGreen Ecology to align with existing catchment hydrology and ecological values.

As the proposed development areas are typically situated on the upper terraces, with stormwater management devices located within the lower gullies, flows must be conveyed safely down steep embankments without compromising slope stability or causing erosion. In some locations, piped conveyance systems will be installed along the embankments, while in others, flow will discharge at the upper slope.

All stormwater outlets will incorporate energy-dissipation measures and scour protection to control flow velocity, prevent erosion, and protect the receiving environments. Further details are provided in Section 6.12.

6.6 SECONDARY NETWORK

The 1% AEP event will be conveyed as overland flow toward the retention wetlands via the road corridors. Due to the site's topography, all roads have been designed with defined secondary flow paths that discharge either directly to the retention wetlands or via raingardens that ultimately connect to the same system. No low points or areas of on-road ponding have been designed or are required, and there are no anticipated constraints in directing overland flows to suitable outlet locations. The site does not contain any flood-prone areas requiring minimum floor level or freeboard controls.

Overland flows descending the steeper embankments toward the ponds will generally follow the alignment of the primary network conveyance system. Appropriate erosion and scour protection—such as rock armouring, revegetation, or energy-dissipation structures, will be incorporated to ensure slope stability and protect receiving environments. Further details are provided in Section 6.12 – Scour and Erosion Control.

A flood assessment has been prepared by Envelope Engineering to assess flood risk and overland flow management across the site and is attached within Appendix 5. The modelling confirms that the proposed road corridors and retention wetlands provide effective conveyance and attenuation of the 1% AEP event, with flood effects generally limited to shallow flows within roads and stormwater management areas. No flood hazards are within proposed residential lots, and no material increase in flood risk to surrounding land or infrastructure.

6.7 HYDRAULIC NEUTRALITY & ATTENUATION

The proposed stormwater management system has been designed to achieve hydraulic neutrality, ensuring that post-development peak discharges do not exceed pre-development levels for all design events up to and including the 1% AEP storm.

To achieve this, the civil design incorporates four primary retention wetlands (A, B, C, and E) strategically located within the site's main gully systems. Each wetland provides both attenuation and retention functions, temporarily detaining runoff from its contributing sub-catchment before releasing flows to the receiving environment via controlled outlets.

An additional, smaller retention wetland (D) is located at the northern extent of the site and discharges to the Muri Road catchment. This wetland will maintain a permanent water level but will likely require lining due to limited infiltration capacity. Its function is primarily for peak-flow attenuation rather than retention. The retention functions of these wetlands and detailed further into this report. These locations are shown in Figure A below



Table 5. Retention Wetland Storage Summary

Retention Wetland ID	Function	Catchment
A	Attenuation / Retention	T1
B	Attenuation / Retention	T3
C	Attenuation / Retention	T3
D	Attenuation	Muri
E	Attenuation / Retention	K1 / K2

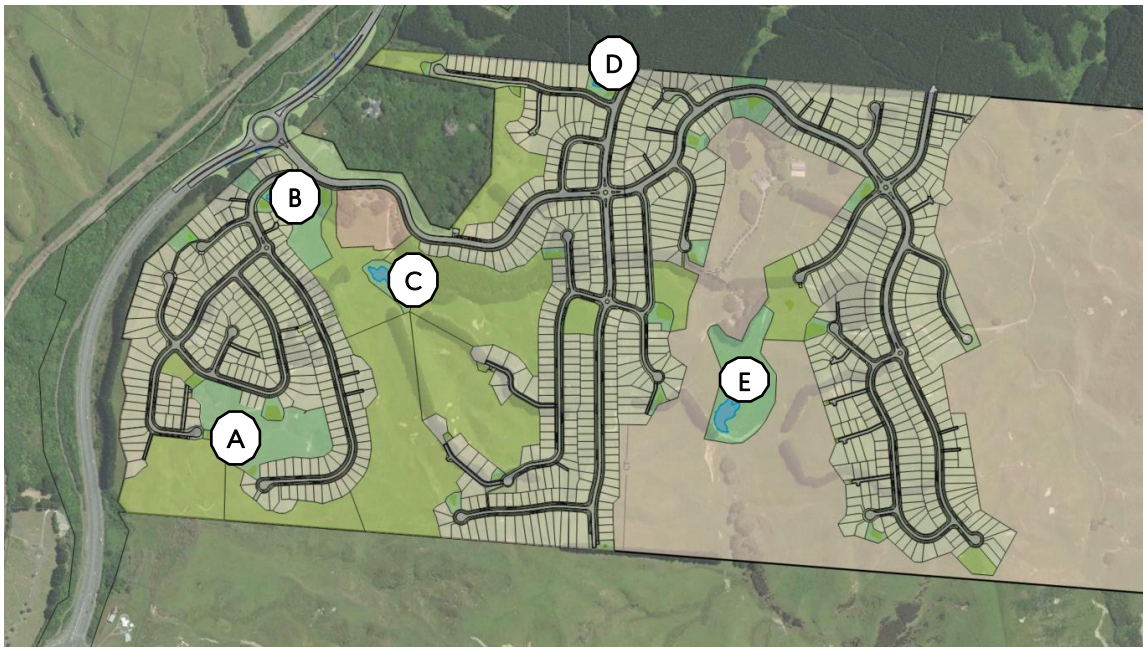


Figure 9. Attenuation & Retention Areas

The function and storage capacity of each wetland summarised in Table 6. This details the different water levels and stages of storage provided within each retention wetland.

Each wetland incorporates multi-stage outlet structures designed to regulate flow, maintain extended detention during frequent storm events, and dissipate energy to minimise downstream scour and erosion. The detailed design phase will confirm final outlet dimensions, including orifice sizes, weir levels, and specific energy-dissipation treatments.

This details on pre- and post-development discharge rates for all return periods (2-, 5-, 10-, and 100-year AEP) are provided in Section 7 of this report. The results demonstrate that the proposed system effectively attenuates runoff, maintains pre-development discharge rates, and provides improved hydrological control across all design events. PDP has undertaken independent hydrological modelling to verify post-development performance at each catchment outlet and can be found in the PDP Hydrological Assessment.

Table 6. Retention Wetland Design Summary

Outlet	Water Level (m RL)	Water Area (m²)	Water volume (m³)
Retention Wetland A			
Permanent	41.00	1,020	770
10% AEP	42.25	2,140	2,480
1% AEP	42.75	2,340	3,680

Outlet	Water Level (m RL)	Water Area (m²)	Water volume (m³)
Spillway	43.50	3,300	5,700
Retention Wetland B			
Permanent	54.30	1,050	480
10% AEP	55.90	2,270	3,020
1% AEP	56.65	3,110	4,980
Spillway	58.17	4,900	10,700
Retention Wetland C			
Permanent	64.50	880	720
10% AEP	65.73	1,940	2,350
1% AEP	66.50	2,600	4,050
Spillway	67.50	3,550	6,950
Retention Wetland D			
Permanent	108.80	200	50
10% AEP	109.17	270	130
1% AEP	109.36	310	180
Spillway	109.70	395	261
Retention Wetland E			
Permanent	91.40	1,840	1,090
10% AEP	92.74	5,350	5,820
1% AEP	93.21	6,690	8,150
Spillway	93.70	8,470	11,650

Together, these wetlands provide distributed flow control across the site, ensuring that downstream receiving environments are protected from increased peak flows, scour, and erosion, and that overall catchment behaviour remains hydraulically neutral post-development.

6.8 RETENTION FUNCTION

Retention wetlands are proposed within the site's existing gullies to provide the final stage of stormwater attenuation and hydrological control. As outlined in Section 6.7 of this report, these wetlands serve a dual purpose—attenuating peak flows and providing stormwater retention.

Each wetland integrates extended detention and permanent storage to manage frequent rainfall events, attenuate flows up to the 1% AEP storm, and retain 85% of the Mean Annual Runoff Volume (MARV). Key features include:

- Siting within natural gullies to maximise storage efficiency and minimise geotechnical and earthworks risks.
- Detention and retention volumes sized to achieve hydraulic neutrality and reduce peak flood flows.
- Controlled outlet structures designed to limit discharges to pre-development rates up to the 1% AEP event.
- Permanent pools that provide baseflow storage and promote sediment settlement.



- Bunds and access tracks to enable inspection, operation, and long-term maintenance.

Further details on pre- and post-development hydrological effects for each catchment are provided in the PDP hydrology report.

6.9 STORMWATER TREATMENT

The treatment objectives for this site are to limit the amount of runoff from the site and to limit the amount of contaminant laden stormwater (e.g. gross pollutants, contaminants etc.) that are discharged from the site.

Raingardens have been designed to provide water-quality treatment in accordance with GWRC Plan Change 1 (Schedule 28) and the Wellington Water Design for Stormwater: Treatment Device Design Guide.

For each sub-catchment (RG-01 to RG-30), the total impervious and water-quality contributing areas were calculated from the civil design model. The required bioretention area was then calculated from the Water Quality Flow (WQF) produced to determine to size the raingardens. Key design parameters use for the raingardens are summarized below.

Table 7. Raingarden Design Summary

Parameter	Design Value	Basis / Reference
Media infiltration rate	175 mm/hr	Bioretention media ensuring <24 hr drawdown
Ponding depth	300mm	Extended depth for increased volume
Media void ratio	40 %	Standard value per WWL guidance
Media depth	600mm	
Drawdown time	≤ 24 hours	Achieved under conservative assumption
Treatment target	≥ 85 % MARV	Schedule 28 – Hydrological control requirement
Treated event	Water Quality Event (WQE)	Based on WQV sizing and WQF from contributing impervious area

These results confirm that the proposed bioretention system satisfies hydrological control requirements and meets reduction targets. Table 1 summarises the estimated pollutant-removal performance.

Table 8. Estimated Raingarden Pollutant Removal Efficiency

Parameter	Estimated Removal Rates
TSS	90%
Total Nitrogen	40%
Total Phosphorus	60%
Zinc	90%
Copper	90%

Envelope Engineering has provided calculations within Appendix 2 demonstrating that the total capacity of the raingardens can accommodate the expected Water Quality Flow (WQF) from the impervious surfaces in the lots and roads. Based on the raingardens receiving the water quality flow event, it has been assumed they will treat the stormwater in accordance with the estimated removal rates provided in Table 8.

These structures are not designed to provide retention due to the geotechnical constraints of the site, but rather to improve the water quality of the run-off before being discharged to downstream



receptors. The retention wetlands, located downstream of the raingardens, will retain the flows from the site to ensure peak flows are lower than predevelopment, reducing the risk of large-scale sediment mobilisation.

Table 9. Summary of stormwater discharge outlets

Raingarden ID	WQA (m^2)	WQF (m^3/hr)	Raingarden Area (m^2)
RG-01	12054	120.5	160
RG-02	4332	43.3	61
RG-03	14652	146.5	175
RG-04	8278	82.8	110
RG-05	19167	191.7	250
RG-06	31243	312.4	420
RG-07	8160	81.6	100
RG-08	19210	192.1	241
RG-09	6805	68.0	80
RG-10	2359	23.6	31
RG-11	6912	69.1	80
RG-12	3785	37.9	43
RG-13	36602	366.0	450
RG-14	6458	64.6	80
RG-15	16789	167.9	190
RG-16	1933	19.3	24
RG-17	7304	73.0	90
RG-18	2586	25.9	35
RG-19	1912	19.1	24
RG-20	6173	61.7	80
RG-21	13487	134.9	170
RG-22	20409	204.1	260
RG-23	15738	157.4	190
RG-24	7220	72.2	90
RG-25	39141	391.4	500
RG-26	1819	18.2	18
RG-27	2356	23.6	14
RG-28	2043	20.4	20
RG-29	8573	85.7	105
RG-30	1463	14.6	15



6.10 WATER QUALITY ASSESSMENT

A Water Quality Assessment by PDP evaluated existing and potential effects of the Mt Welcome development on Taupō Swamp, Kākaho Stream, and Te Awarua-o-Porirua Harbour.

Baseline monitoring recorded slightly elevated nutrient and metal concentrations from existing deer-farming land use, but generally below guideline thresholds. Turbidity was high during rainfall events due to steep, erodible pasture slopes.

Following development, nitrogen and phosphorus loads will reduce as livestock are removed and land use transitions to residential. Raingardens will provide primary treatment and are critical for zinc and copper removal from road runoff, while retention wetlands will further attenuate flows and provide incidental sediment filtration.

PDP concluded that, with the proposed stormwater measures implemented and maintained, residual effects on downstream environments will be less than minor. Continued baseline monitoring prior to construction is recommended to confirm pre-development conditions.

6.11 STATE HIGHWAY 59

The new roundabout proposed within the State Highway 59 corridor will require significant stormwater upgrades and will generate approximately 4,000m² of new impervious surface. The following design measures have been adopted to achieve stormwater neutrality and align with best-practice stormwater management principles:

- Peak flow attenuation for the new impervious area will not be provided at the roundabout itself. Instead, Retention Wetland B has been intentionally oversized to compensate for the additional runoff, effectively mitigating any increase in downstream peak flows and maintaining overall catchment discharge neutrality.
- Retention within the roundabout footprint is not practicable due to poor infiltration conditions within the State Highway corridor. Accordingly, the impervious area is included within the Retention Wetland B catchment model, with post-development hydrological performance and downstream monitoring incorporating this contribution. Supporting analysis is provided in the PDP Hydrological Report.
- Roadside swales will provide first-flush treatment and contaminant removal prior to discharge for 2,660m² of the new impervious surfaces. This represents the best practicable option (BPO) for the constrained highway corridor, as standalone roadside raingardens are not preferred by NZTA and would be operationally difficult to maintain.
- Some existing culverts will be removed as outlined in Section 3.9 as part of the road widening works. The existing culverts are generally undersized and will be replaced with new, realigned culverts to accommodate the proposed roundabout, while maintaining existing flows to the Taupō Stream.

6.12 CULVERTS

A total of 11 culverts are proposed within the site. Five associated with the SH59 upgrades and seven within the development site. The four outlet structures from the retention wetlands have been classified as culverts. These will discharge from the wetlands via a controlled inlet structure within the pond (e.g., outlet and scruffy manhole or similar).

Culverts P30, P32, P33, P35 (Retention Wetland B), P38, and P40 (Retention Wetland E) will be designed to provide fish passage in accordance with Section 6.13. Any adjustments to culvert sizing required to accommodate fish passage requirements will be confirmed during detailed design.

The proposed culverts are shown in Figure 10 and summarised in Table 10 below. Detailed culvert plans are also included in Appendix 1.

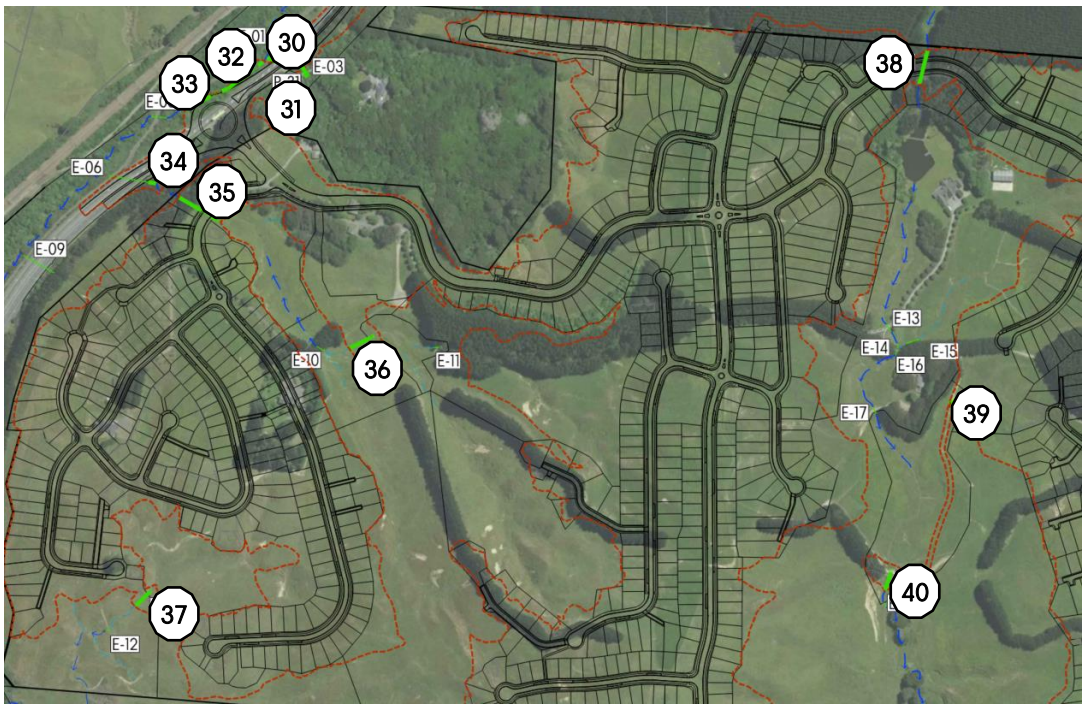


Figure 10. Proposed Site Wide Culverts

Table 10. Proposed SH59 Culverts

Culvert ID	Diameter	Length	Grade	Note
P-30	750mm	56m	1.20%	Replace E-02 with 750mm Dia
P-31	375mm	13m	10.00%	Second High Level Inlet With E-03
P-32	1500 x 1000 Box	45m	2.00%	Piping of stream to allow SH59 upgrade
P-33	1500 x 1000 Box	58m	3.00%	Piping of stream to allow SH59 upgrade
P-34	600mm	10m	3.60%	Extension of E-06
P-35	600 to 900 mm	60.5m	1.5% - 6%	Retention Wetland B Outlet
P-36	450 to 675 mm	36m	10% - 15%	Retention Wetland C Outlet
P-37	600mm	28m	14% - 25%	Retention Wetland A Outlet
P-38	900mm	44m	3.50%	Road/Stream Crossing
P-39	600mm	10m	2.00%	Replace E-18 with 600mm Dia
P-40	350 to 2100 mm	28.5m	5% - 6%	Retention Wetland E Outlet

Figure 11 below further detail the proposed culverts required to be installed for the SH59 intersection.

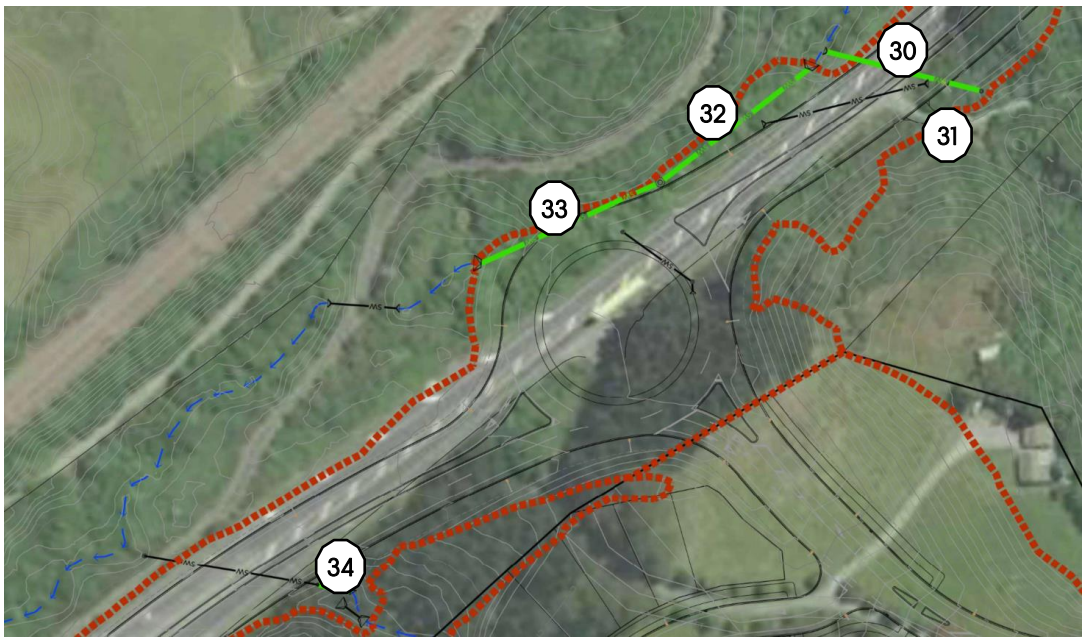


Figure 11. Proposed SH59 Culverts

6.13 FISH PASSAGE

During detailed design the culvert sizing will be reviewed against the New Zealand Fish Passage Guidelines (2018, NIWA) to ensure that all permanent crossings support fish movement.

Under the proposed development, several new or replacement culverts within perennial and intermittent stream reaches will be designed to enable the safe upstream and downstream passage of fish species under a range of flow conditions. Design measures include:

- Culvert Width and Embedment
    - For streams with a bank-full width less than 3m, the guidelines recommend a culvert width of at least 1.3 times the measured bank-full width to minimise hydraulic constriction and preserve natural channel processes.
    - The natural streambed will be reinstated within the culvert to approximately 25% of the culvert depth, using existing bed material (gravels, cobbles, fines) wherever practicable to replicate the natural substrate and roughness conditions.
    - The existing stream gradient will be maintained through the culvert to ensure consistent energy slope, reduce perching risk, and maintain velocities within the preferred range for native fish (< 0.3m/s for general passage, < 0.1m/s for climbing species under baseflow).

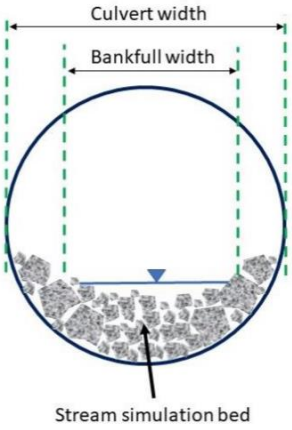


Figure 12. Stream Simulation Sketch (Extract from NZ Fish Passage Guidelines 2018)

- Steep Gradient Crossings

    - In steeper crossings (~6% gradient), baffles or roughened inverts should be incorporated to create resting zones and hydraulic diversity suitable for climbing species
    - Baffle spacing should follow NIWA guidance, typically 1–1.5 times the culvert diameter, and baffle height should not exceed 15% of culvert diameter to prevent debris accumulation and excessive head loss.
- Barrier Removal and Realignment
    - The perched middle culvert in the north-western tributary will be removed or re-graded to align with the natural stream bed, reinstating continuous fish passage and flow connectivity through the new stormwater wetland outfall.
- Retention Wetland Connectivity
    - Where required, the retention wetland outlet will incorporate a fish-passage capable weir within the outlet structure to maintain aquatic connectivity.
    - The outlet will provide a continuous wetted low-flow pathway to support fish passage and will be designed to maintain permanent baseflow connectivity, with internal roughness or texturing included to assist fish movement.
    - Vertical risers may be incorporated within the scour/scruffy manhole structure as an emergency overtopping measure during large storm events or blockage scenarios. These risers will be configured so they do not impede fish passage, with low-level cut-outs or similar features provided to maintain uninterrupted low flows and aquatic connectivity.
- SH 59 Roundabout Culvert
    - The 110 m Taupō Stream culvert will be installed at the existing stream gradient, with an inverted gravel bed to mimic the natural channel and promote hydraulic roughness.
    - Culvert alignment will be straight and consistent with the existing channel to avoid turbulence or flow separation.
    - Although downstream passage is currently limited by existing barriers, this culvert will be constructed to be fish-passage capable, providing for future connectivity improvements should downstream remediation occur.

Overall, the proposed culvert and wetland system will remove existing barriers, provide continuous aquatic connectivity, and result in a net improvement to fish habitat and passage relative to the current condition. Specific fish passage design details will be developed and finalised during the detailed design phase.

6.14 SCOUR AND EROSION

All stormwater outlets will be designed with energy-dissipation and scour-protection measures to prevent erosion of outlet channels, embankments, and downstream receiving environments. Scour protection has been determined based on the expected discharge velocities at each outlet, applying the permissible velocity limits set out in the New Zealand Building Code E1 Surface Water and Wellington Water RSWS v3.0 to identify appropriate materials and treatments.

Many outlets are located at the base of steep embankments, where stormwater is conveyed by pipes discharging into gullies or retention wetlands. These piped sections are required to prevent uncontrolled surface flow and associated slope scour. Where velocities warrant, internal baffles or step-down structures will be incorporated within the pipes to further dissipate energy prior to discharge.

At each outlet, suitable erosion-resistant materials (rock, concrete, or geotextile reinforcement) will be used to stabilise the outfall zone. If additional energy-dissipation device, such as riprap aprons, bubble up manholes, or rock-mattress outfalls they will be provided to reduce flow velocity at discharge.

Vegetated riprap and native planting should be established around all outlet and receiving areas to promote long-term slope stability and natural filtration.



7.0 HYDROLOGY & HYDRAULIC MODELLING

7.1 OVERVIEW

Hydrological and hydraulic modelling for the Mt Welcome development was undertaken to assess peak flow attenuation, network performance, and hydrological neutrality. A summary of the key parameters and results is provided below, with the full model outputs included in Appendix C.

7.2 HYDROLOGY & HYDRAULIC MODELLING

The hydrological and hydraulic modelling for this development has been undertaken using Autodesk InfoDrainage (2025) in accordance with the Wellington Water Reference Guide for Design Storm Hydrology Standardised Parameters for Hydrological Modelling (April 2019) and the Regional Standard for Water Services. The model applies the SCS Curve Number (CN) method for runoff estimation, consistent with Wellington Water's standardised hydrological parameters

Soil infiltration and initial abstraction parameters were informed by site-specific geotechnical investigations, which confirmed the presence of low-permeability silt and clay soils characteristic of the surrounding area. Composite curve numbers ranging from CN 68 (pervious surfaces) to CN 98 (impervious surfaces) were adopted and applied consistently across both pre- and post-development scenarios. Attenuation and storage within the proposed retention wetlands have been represented in the model.

The InfoDrainage model simulates both sub-catchment hydrology and the hydraulic performance of the primary piped network. A two-dimensional (2D) surface-flow component was not included; therefore, localised overland-flow or surface-flooding effects under 1 % AEP events are considered qualitatively rather than dynamically modelled.

7.3 RAINFALL

Rainfall inputs were sourced from NIWA HIRDS v4 for the Whenua Tapu rainfall station (ID 140806), incorporating RCP 6.0 (2081–2100) to account for climate-change allowance. Figure 1 and Figure 2 below presents the design rainfall distribution curves exported from the model, illustrating the temporal pattern applied to all simulated design storms.

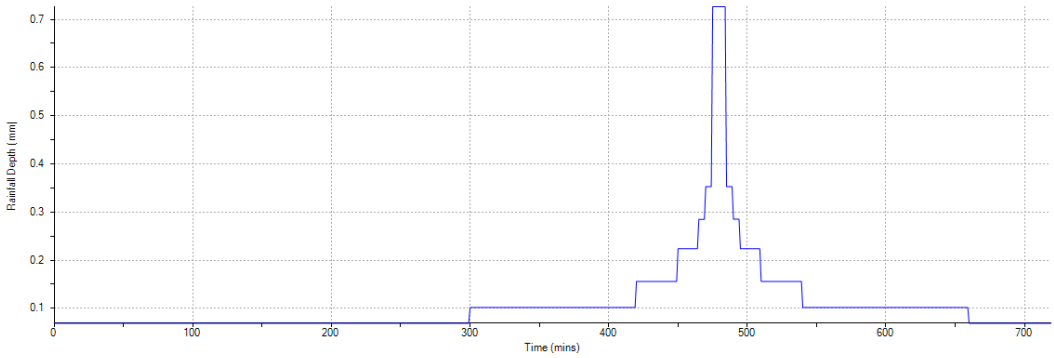


Figure 13. 10% AEP Rainfall Distribution

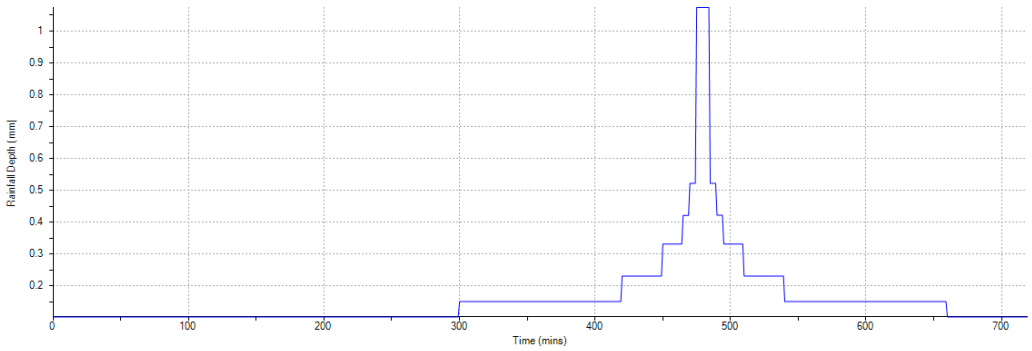


Figure 14. 1% AEP Rainfall Distribution

The below table outlines hydrological control based on the Greater Wellington Hydrological Control Guidance Note September 2025.

Table 11. Retention & Hydrological Control

Design Criteria	Parameter	Reference
HIRDS v4 location	Whenua Tapu (ID 140806)	Historic baseline (no CC uplift)
2-yr ARI, 24-h depth	68.1 mm	From HIRDS v4
Water-quality storm depth	22.7 mm ≈ 23 mm	= (2-yr, 24-h) ÷ 3

In lieu of site-specific data, data collected at the closest regional rain gauge at the Taupō Stream at the Whenua Tapu site (ID 140806) indicates that the average annual rainfall in the general site area is approximately 1,040 mm/year.

7.4 HYDROLOGICAL RETENTION RESULTS

PDP's hydrological modelling confirms that the proposed retention wetlands effectively manage post-development flows, with wetlands modelled to be wetter or unchanged more than 99% of the time and experiencing fewer dry-season drawdowns. The retention systems provide permanent or near-permanent water levels, attenuate 1% and 10% AEP peak flows, and collectively support hydraulic neutrality across the development. Ephemeral streams retain their overall character, with reduced peak-flow durations.

For full modelling results, water-level time-series, and detailed water-balance calculations, refer to the PDP Hydrology Assessment.

7.5 PEAK FLOW RESULTS

The results and comparison points below assess pre- and post-development conditions at key catchment outlets, rather than solely at the pond discharge points. These locations capture a broader range of contributing areas, including outlets that do not discharge to the main retention wetland, including the SH59 upgrades. The "T" catchments ultimately discharge to the Taupō Swamp, while the "K" catchments discharge to the Kauko Stream.

Table 12. Summary of stormwater model outputs.

	10% AEP		1% AEP	
Catchment	Pre Dev (L/s)	Post Dev (L/s)	Pre Dev (L/s)	Post Dev (L/s)
T1	1583	1512	2788	2674
T2	188	209	330	325
T3	797	823	911	945
T (Total)	4057	3920	6869	5937
K		2285.3		3504.2
Muri	100	83	176	113



Figure 15. Pre/Post Comparison Outlets

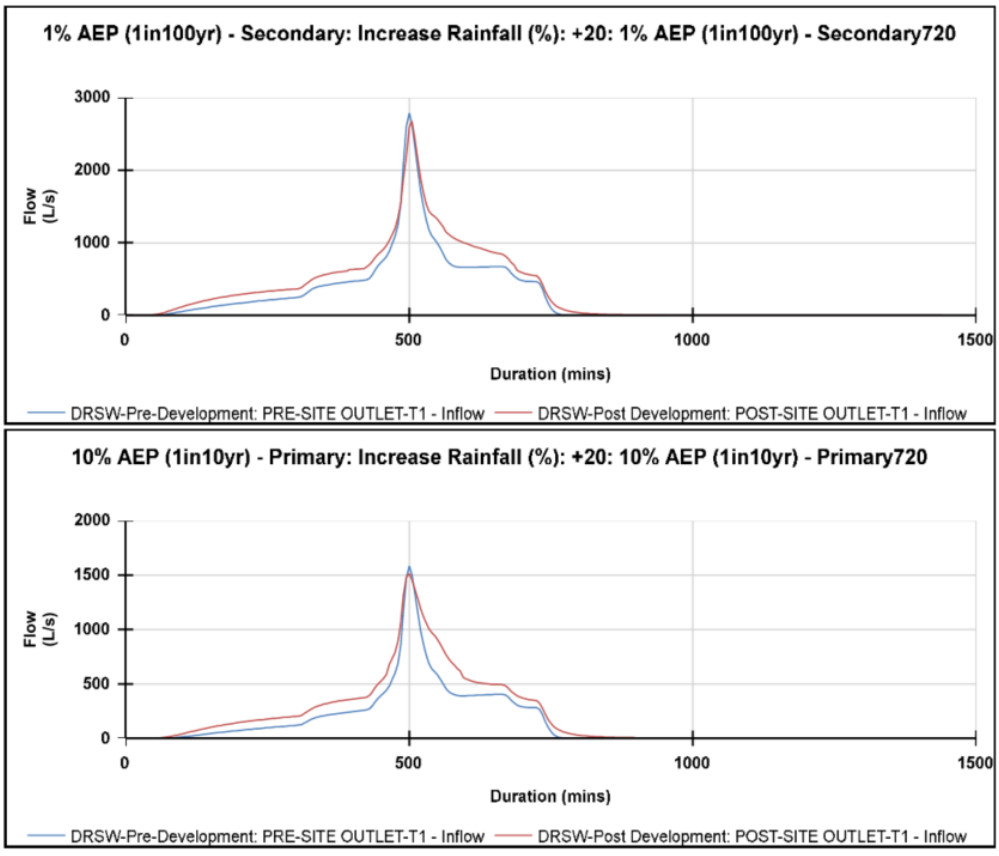


Figure 16. Pre and Post Development Comparison **(T1)** for the 10- and 100-Year Storm Events

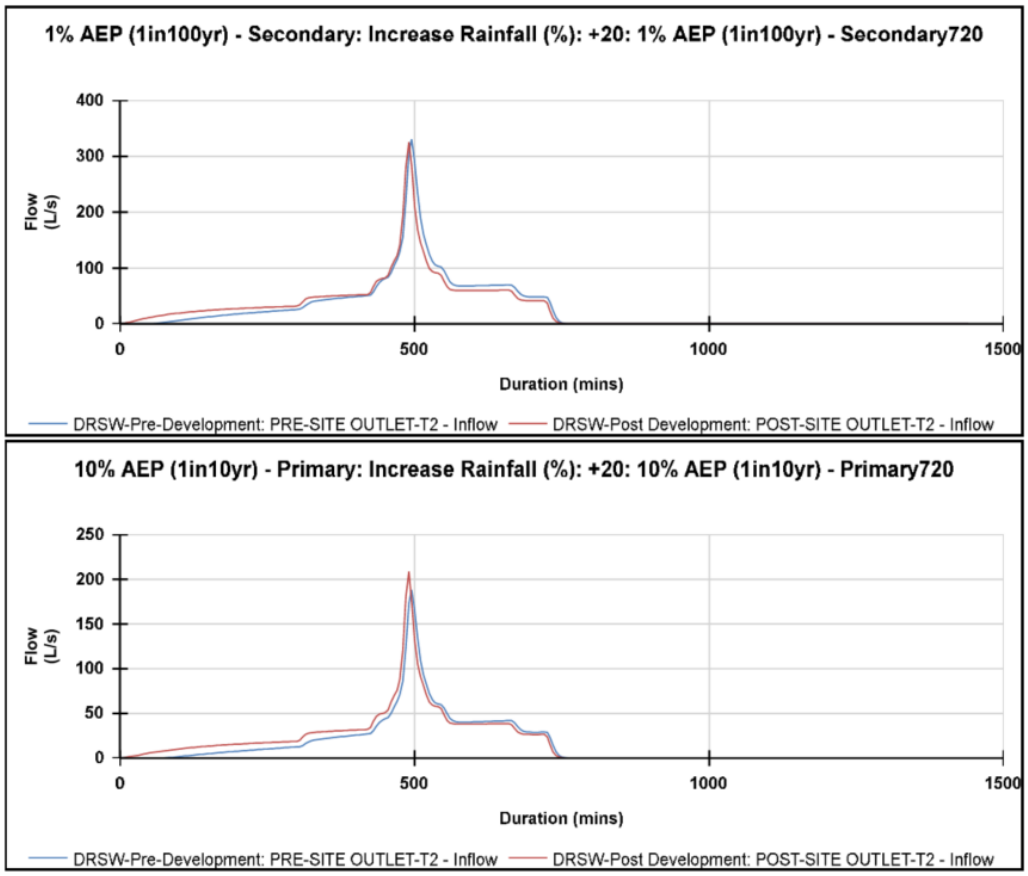


Figure 17. Pre and Post Development Comparison **(T2)** for the 10- and 100-Year Storm Events

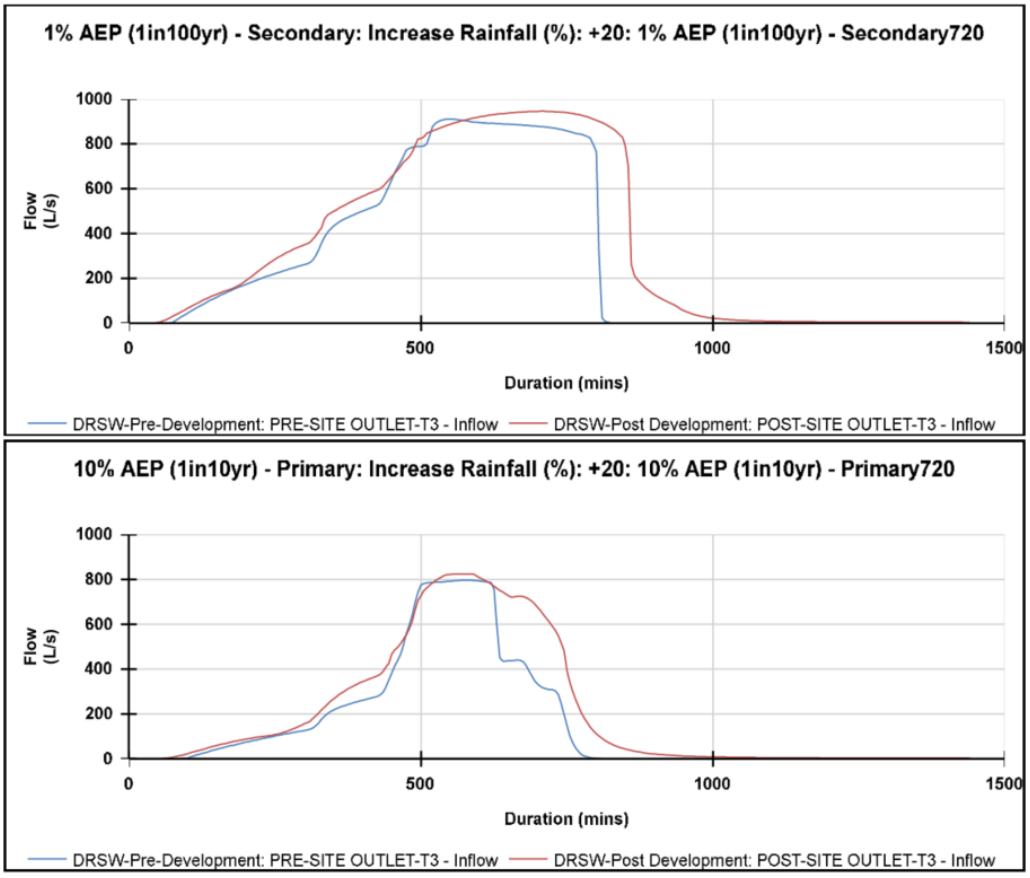


Figure 18. Pre and Post Development Comparison **(T3)** for the 10- and 100-Year Storm Events

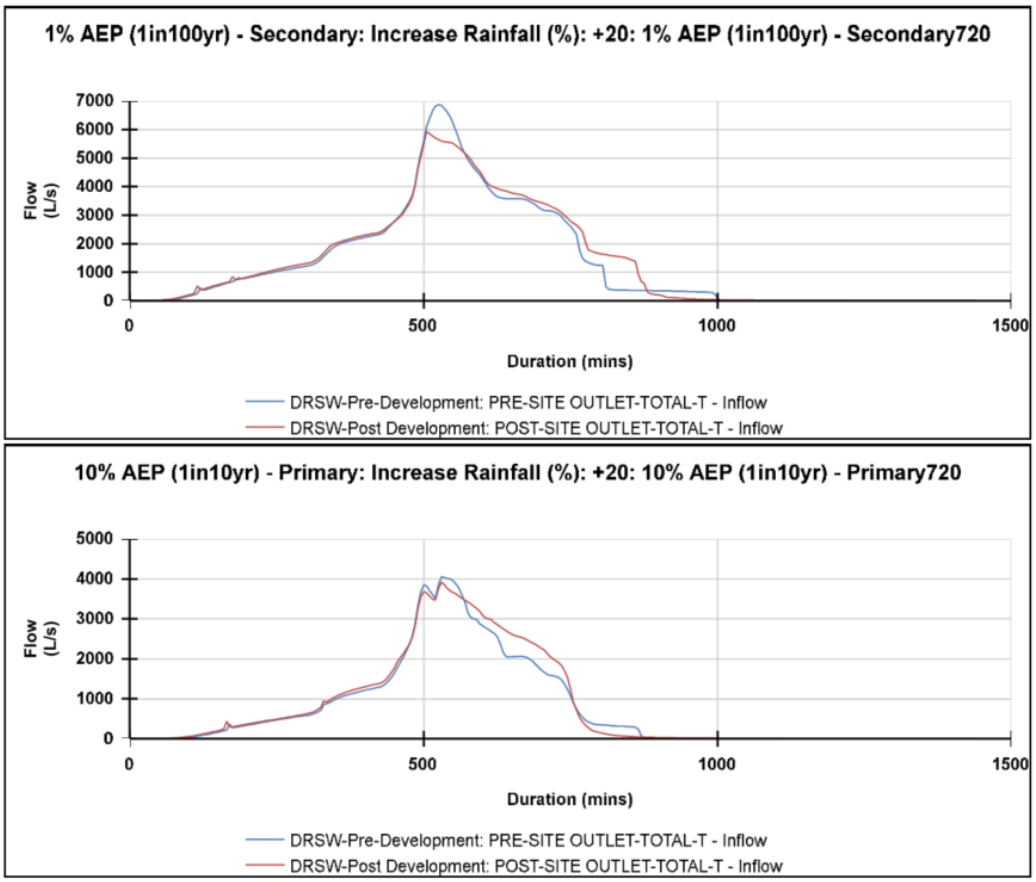


Figure 19. Pre and Post Development Comparison **(T-T)** for the 10- and 100-Year Storm Events

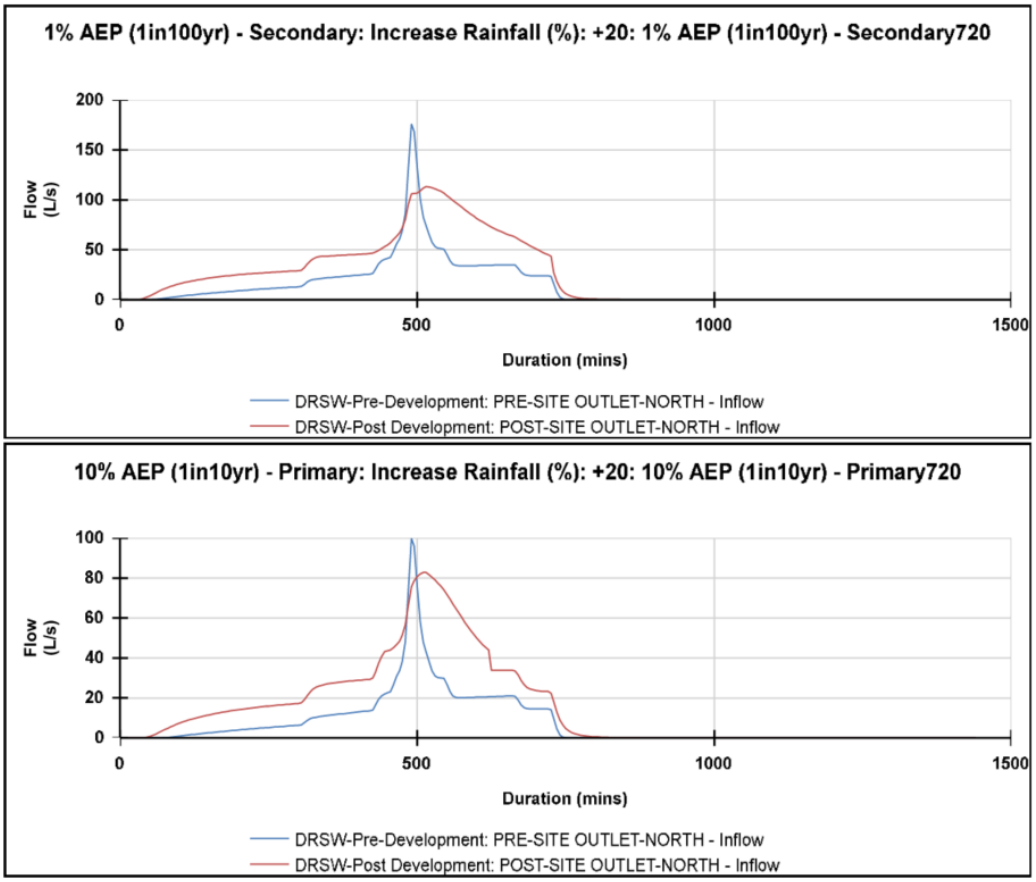


Figure 20. Pre and Post Development Comparison **(Muri)** for the 10- and 100-Year Storm Events

7.6 SUMMARY

The hydrological and hydraulic modelling confirms that the proposed stormwater management system achieves hydraulic neutrality, effective peak-flow attenuation, and maintains suitable wetland and downstream hydrological conditions. Key outcomes include:

- Peak flows are reduced or closely matched to pre-development levels across major catchments for both 10% and 1% AEP events.
- Retention wetlands maintain or improve water levels more than 99% of the time, with fewer dry-season drawdowns.
- Peak flows are reduced or closely matched to pre-development levels across major catchments for both 10% and 1% AEP events.
- Hydraulic neutrality is achieved through integrated raingardens, piped networks, and retention wetland storage.

Full model outputs and detailed calculations are provided in Appendix B, C and D and the PDP Hydrology Assessment.

8.0 ASSET OWNERSHIP, OPERATION & MAINTENANCE

8.1 OWNERSHIP AND VESTING

All stormwater infrastructure located within road reserves, drainage reserves, and communal open spaces—including piped networks, manholes, raingardens, wetlands, and attenuation basins—will be vested in Porirua City Council and managed under Wellington Water's asset management framework.

Private laterals serving individual lots will remain the responsibility of the property owner beyond the boundary.

Where shared access lots (JOALs) are proposed, the underground piped network will be vested to Council, protected by a stormwater easement registered over the private land. However, catchpits within private accessways are expected to remain privately maintained, managed collectively by the benefiting lots through a residents' association or encumbrance.

The ownership and long-term maintenance of raingardens serving private roads will be discussed further with Wellington Water to determine whether vesting or private maintenance is preferred.

If these isolated treatment devices are to remain privately maintained, a proprietary treatment system may be adopted as an alternative to simplify the long-term maintenance regime while maintaining equivalent treatment performance.

8.2 ACCESS AND SAFETY PROVISIONS

All stormwater treatment and attenuation devices will include dedicated maintenance access for inspection, cleaning and media replacement.

- Maintenance access (3.0m wide, maximum gradient 1V:6H) will be provided to all centralised bioretention devices and ponds. This access extends around raingardens at a similar width to enable inspection and maintenance.
- Vehicle access (3.0 m wide) will be provided to and across all wetland retention bunds to allow desilting, maintenance, and periodic inspection.
- Council pedestrian access will be maintained to all pipes and structures located within the retention wetlands and receiving environment. Vehicle access will not be permitted in these areas to avoid damage to vegetation and wetland planting.
- Safety features, including appropriately graded batter slopes, will be incorporated where required to meet health and safety standards and Wellington Water's operational guidelines.
- Where assets are located adjacent to private property, stormwater easements will be established to provide legal access for inspection and ongoing maintenance.



8.3 OPERATIONS & MAINTENANCE MANUALS

Ongoing operation and maintenance (O&M) will be undertaken by Wellington Water, or by Porirua City Council following standard maintenance frequencies.

This Operation and Maintenance framework applies to all stormwater treatment and attenuation assets within the development, including raingardens and retention wetlands. These assets will be vested in Porirua City Council and managed under Wellington Water's asset-management framework following a minimum one-year maintenance and establishment period post-construction.

Standard underground stormwater networks, including pipes and manholes, will vest to Council at Section 224(c) certification and form part of the public stormwater system maintained under Wellington Water's regional operations contracts.

During the active maintenance period, the developer will carry out all operation, inspection, and maintenance activities to confirm effective vegetation establishment, hydraulic functionality, and structural integrity. A joint handover inspection with Porirua City Council and Wellington Water will be undertaken prior to vesting.

Key maintenance activities will include:

- Regular removal of litter, debris, and sediment from inlets, outlets, and forebays.
- Inspection and repair of any erosion, scour, or blockage at structures.
- Monitoring and maintenance of vegetation and replanting as required to maintain at least 90% vegetation cover by the end of the establishment period.
- Re-mulching and weeding of bioretention areas to prevent compaction and maintain media performance.
- Sediment removal when accumulation exceeds 150 mm or 30% of the designed sediment storage volume.

Following vesting, Porirua City Council (via Wellington Water) will assume long-term maintenance responsibility under its standard regional maintenance schedules.

8.4 RETENTION WETLANDS

Because the wetland retention ponds will service large upstream catchments, they will need to be operational and functional while adjacent earthworks and civil staging are still underway.
To de-risk sediment and debris entering these devices during construction, it is proposed that the developer extend the maintenance period for these assets beyond the initial one-year establishment phase—until the majority of the contributing catchment is fully stabilised and civil works completed. This approach will allow any required cleaning, sediment removal, or replanting to be undertaken prior to final vesting, ensuring the ponds are handed over in good operational condition. This will be detailed within a detailed O&M Manual during the detailed design phase.

Further details of this are described in the Construction Phase Management below and within the draft ECMP.

8.5 WHOLE-OF-LIFE CONSIDERATIONS

The stormwater system has been designed with long-term maintenance, renewal, and operational sustainability in mind.

- Materials comply with WWL approved materials and design lives > 100 years.
- Raingardens have been located centrally to minimise maintenance requirements
- Sediment storage volumes in treatment devices have been sized for 10 years of accumulation before desilting is required.

Overall, the stormwater infrastructure has been designed to be robust, accessible, and maintainable in accordance with Wellington Water's operational expectations and Porirua City Council's asset-management practices.



9.0 CONSTRUCTION PHASE MANAGEMENT

9.1 EARTHWORKS AND ESC

Envelope Engineering have prepared a draft Earthworks and Construction Management Plan for the site. This outlines measures to ensure the environmentally conscious completion of works at the site. It is expected that the proposed contractor will prepare a stage-specific management plan for works at the site.

As large-scale earthworks proceed, it will therefore be important to manage erosion and sediment generation carefully, requiring the need for robust erosion and sediment control measures to maintain existing water quality standards during and after construction.

It is likely that control of sediment on this site will require the use of a flocculant and the use of this would be controlled a Flocculation Management Plan (FMP).

9.2 WATER QUALITY

For water monitoring, turbidity will be continuously measured at the downstream monitoring points (SW01, SW02, and SW03) for the duration of the works, in accordance with the PDP Water Quality Assessment. While this data is not yet finalised, baseline water quality will be confirmed prior to the commencement of construction. This will continue to be monitored during and after construction and is further detailed in PDPs hydrology assessment.

9.3 DURING CONSTRUCTION

There will need to include measures to ensure that the proposed stormwater retention wetlands and treatment devices are protected during construction works, which could include:

- Isolating treatment devices so they remain offline until their contributing catchments are fully stabilised.
- Implementing erosion and sediment controls to prevent silt-laden runoff from entering treatment systems.
- Allowing an appropriate establishment period for planting prior to commissioning each device.
- Delaying the vesting of the retention wetlands until earthworks or civil construction within the upstream catchment has been completed to a suitable benchmark.

Once a contractor is appointed, a detailed construction methodology and protection plan will be developed to ensure the wetlands and treatment devices are constructed correctly and their functionality is safeguarded throughout the remaining works.

9.4 POST CONSTRUCTION

The proposed stormwater system incorporates centralised attenuation, retention, and treatment devices, minimising the number of assets requiring long-term maintenance by Council. Dedicated maintenance tracks are provided alongside the bioretention devices to allow safe and efficient access for Council maintenance crews. Access is also provided to key stormwater structures within the retention wetlands.

As all stormwater is treated prior to entering the retention wetlands, these wetlands are not expected to require the same level of maintenance or sediment removal as bioretention systems.

10.0 ALTERNATIVES CONSIDERED

Given the site's specific conditions, opportunities, and constraints, a range of stormwater management devices have been assessed for their suitability. The existing gullies present an opportunity to integrate stormwater retention and attenuation within natural landforms, reducing earthworks and enhancing downstream environments. Given the steeper road gradients and higher residential densities, roadside raingardens are not considered a practical or effective treatment option for this development and have been designed to be centralised.



10.1 DEVICE ALTERNATIVES

Table 13. Target Load Reductions for Copper and Zinc

Stormwater Device	Considerations	Suitability
Detention / Retention Basin	Provides peak-flow attenuation and supports hydrological stability of downstream environments. Can be integrated into existing gullies due to geotechnical limitations.	Yes – within existing gullies
Roadside Raingardens	Generally unsuitable for steeper roads due reduced treatment area and high flow velocities.	No
Centralised Raingardens	Suitable. Can be sized for 85% MARV treatment and located at existing flow paths. Centralised systems simplify long-term maintenance.	Yes
Tree Pits	Effective for localised treatment of small impervious areas but limited capacity for large catchments	No
Wetlands	Large area requirement to achieve hydrological and water-quality performance. Difficult to accommodate within the steep terrain and geotechnical constraints on earthworks areas.	Yes – within existing gullies
Bioswales	Generally unsuitable for steep slopes due to high flow velocities and erosion potential.	No
Proprietary Treatment	Compact and modular; useful for isolated areas such as JOALs. Simplifies maintenance where vegetated raingardens are impractical.	Yes – as alternative to private raingardens
Soakage Devices	Ground conditions are unsuitable for infiltration and may induce local instability due to low permeability soils and shallow groundwater.	No
Permeable Paving	High maintenance requirement and reduced performance on steep grades. Provides minimal hydrological benefit under current soil conditions.	No
On-lot rainwater re-use for non-potable	Installation, operation, and maintenance are the responsibility of individual homeowners, making long-term compliance and performance difficult to ensure. Systems increase build cost and complexity, require ongoing maintenance of pumps and filters, and often deliver limited hydrological benefit during wet periods when tanks remain full. Given the site's centralised stormwater management approach, on-lot reuse would add little additional value to overall system performance.	No - not adopted for this site

10.2 PREFERRED OPTION & OUTCOMES

The preferred stormwater management approach combines conventional pipe networks for conveyance with distributed WSUD devices (bioretention basins, detention/retention ponds, and wetlands) integrated within existing gullies.

This approach:

- Meets Wellington Water's Level of Service and RSWS v3.0 performance objectives for flow, water quality, and retention.



- Aligns with GWRC PC1 hydrological control policies by managing the frequency, volume, and quality of runoff before discharging to sensitive receiving environments.
- Minimises earthworks by utilising natural gully formations for treatment and attenuation, reducing disturbance and enhancing ecological outcomes.
- Balances constructability, cost, and long-term maintenance by centralising treatment in accessible locations while maintaining distributed hydrological control.
- Supports mana whenua and community outcomes through improved water quality, reduced downstream erosion, and enhancement of natural waterways and wetlands.

Overall, the preferred option provides a practical, resilient, and environmentally responsive stormwater solution that achieves the required technical, ecological, and cultural outcomes for the Mt Welcome development.

11.0 STORMWATER IMPACT ASSESSMENT

This SMP has been compiled to comply with the information requirements required by Schedule 29 of GWRC Plan Change 1. This section is included for ease of reference.

Table 14. GWRC Plan Change 1 – Schedule 29 Requirements

Requirement	Design Response
Site evaluation: the site must be assessed for its topography, soil type, land use, drainage patterns (including wetlands/water courses), natural features, topographical and geotechnical constraints and potential flood areas.	Section 3 of this report provides a comprehensive site evaluation, prepared in consultation with the wider project team and supported by technical inputs referenced in the SMP
Catchment evaluation: analyse catchment wide characteristics and requirements (utilising existing local authority stormwater management strategies where available) to consider the proposed development in a broader stormwater discharge and receiving environment context to understand relevant catchment issues, including flooding, climate change projections (frequency and volume), water quality and any additional design or mitigation measures required to address wider catchment matters.	Section 3 of this report provides a comprehensive catchment evaluation, prepared in consultation with the wider project team and supported by technical inputs referenced in the SMP
Stormwater discharge calculation: calculation of stormwater discharge volumes and flow rates along with analysis of stormwater contaminant generation from and new and/or redeveloped impervious surfaces.	Sections 7 and 8 of this report present the stormwater discharge modelling results, including runoff volumes and peak-flow rates for new and redeveloped impervious areas. Contaminant load assessments prepared by PDP, are referenced in this report and confirm the adequacy of the proposed treatment approach.
Identification of actual and potential stormwater impacts: undertake evaluation of the actual and potential impacts on the receiving environment, including water quality, natural flow regimes of waterways, soil erosion, flooding, changes in hydrology and climate change (frequency and volume).	Effective for localised treatment of small impervious areas but limited capacity for large catchments

Requirement	Design Response
Implementation of Water Sensitive Urban Design principles: provide an analysis of how Water Sensitive Urban Design measures have been identified and incorporated into the site design and layout, building and road/paving materials and features and how existing natural features and new stormwater treatment systems have been enhanced and integrated to mimic natural processes.	Sections 7 and 8 of this report assess the actual and potential stormwater impacts on the receiving environment through detailed hydrological and hydraulic modelling. Modelling results completed by Envelope and PDP confirm that post-development discharges are hydraulically neutral, with water quality and hydrological effects mitigated through the proposed stormwater management devices
Mitigation measures: Assessment of proposed mitigations to reduce the effect of stormwater discharges on water quantity and quality, including the approach to treat in accordance with Schedule 28 (contaminant treatment) and implement hydrological control. Measures must support achieving relevant target attribute states (beyond zinc and copper) for ecosystem health, including nutrients, visual clarity and E. coli or enterococci.	Sections 7 and 8 evaluate mitigation for water quality and quantity, including 85% MARV treatment and contaminant removal per Schedule 28. Hydrological control and Contaminant load modelling reports prepared by PDP confirm compliance.
Operation and maintenance of stormwater management systems: analyse the long-term (life-cycle) operational and maintenance requirements including funding mechanisms and identification of persons responsible for ongoing maintenance.	Section 9 details the operation and maintenance requirements, identifies responsible parties, and outlines management mechanisms to ensure ongoing performance.
Cultural considerations: to be informed by engagement with mana whenua.	Section 4 describes how this plan aligns with Te Mana o te Wai and has been informed by engagement with mana whenua to protect and enhance freshwater values.

12.0 CONCLUSION

This Stormwater Management Plan presents an integrated approach to managing stormwater for the Mt Welcome development. The proposed system combines hydrological control, water-quality treatment, and conveyance to ensure the development operates effectively and in accordance with local council rules and guidelines. Key outcomes of the SMP include:

- Post-development peak flows are reduced or comparable to pre-development levels.
- Retention Wetlands provide stable long-term retention and support hydraulic neutrality across all catchments.
- Raingardens and the treatment train effectively remove sediment, metals, and nutrients from impervious runoff.
- Improved land cover and treatment devices result in cleaner, lower-impact discharge to downstream environments.
- The primary network meets WWL levels of service, with defined overland flow paths and maintenance access.
- Devices can be isolated during construction, with erosion and sediment controls ensuring protection until systems are established.

13.0 ADHERENCE TO THE EXPERT CONDUCT CODE.

While this is not a matter before the Environment Court, the author of this report has read the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2023 ('Code'). The author has complied with the Code in the preparation of this report.

The data, information, facts and assumptions the author has considered as part of this report are set out in this report. The reasons for the conclusions of the report are also set out in this report. Unless stated otherwise, this report is within the author's expertise and the author has not omitted to consider material facts known to him that might alter or detract from the opinions expressed.

14.0 LIMITATIONS

This report has been prepared for the project described to us and its extent is limited to the scope of work agreed between the client and Envelope Engineering Limited. No responsibility is accepted by Envelope Engineering Limited or its directors, servants, agents, staff or employees for the accuracy of information provided by third parties and/or the use of any part of this report in any other context or for any other purposes.

APPENDICES

APPENDICES

APPENDIX 1 ENGINEERING PLANS

The full drawing package is provided as a separate attachment.

ENVELOPE

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CLIENT:
PUKERUA PROPERTY GROUP LP

PROJECT:
MT WELCOME
PUKERUA BAY
PORIRUA

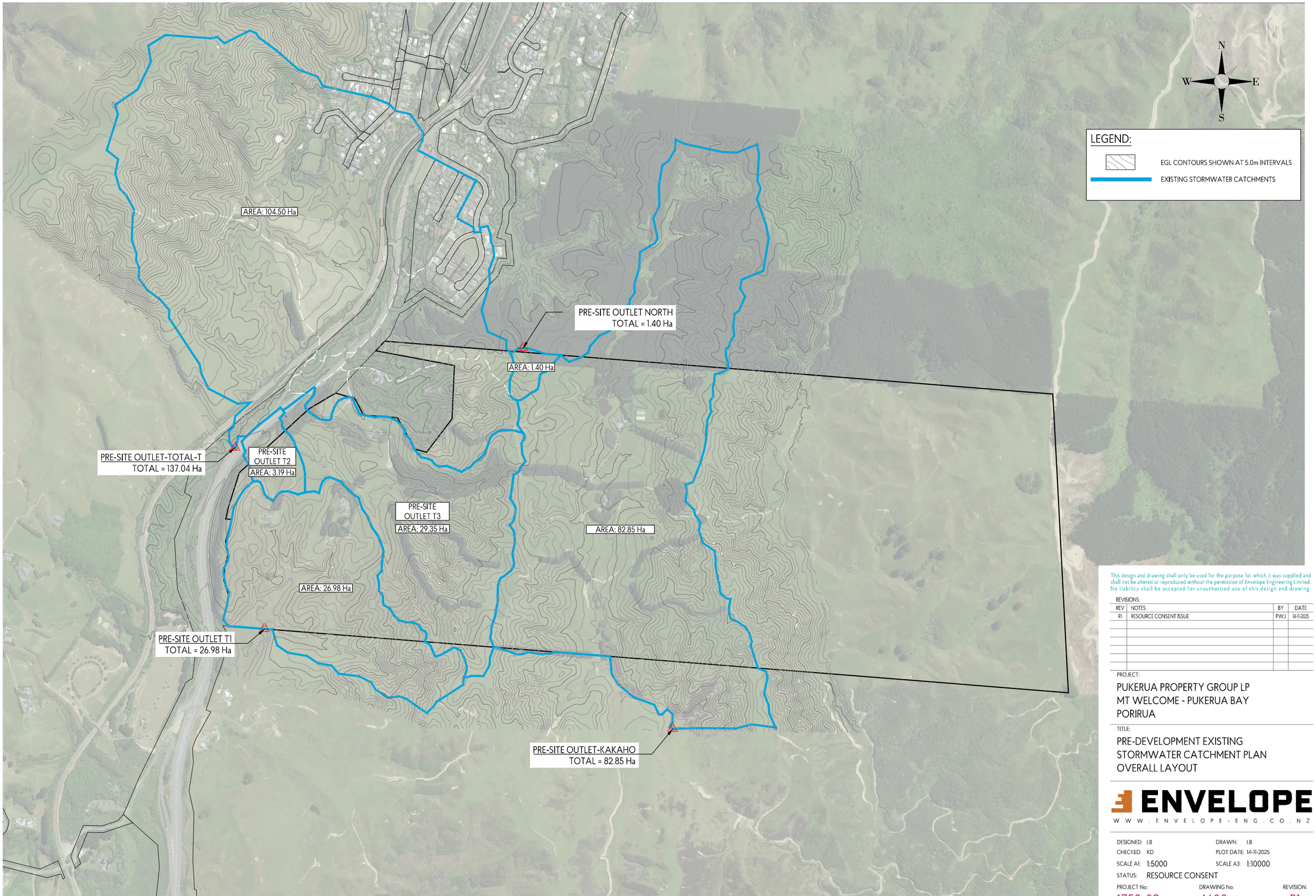
PLAN SET:
CIVIL ENGINEERING DRAWINGS

ISSUE:
RESOURCE CONSENT

DATE:
20th NOVEMBER 2025

REFERENCE:
1753-02

DRAWING INDEX		
MT WELCOME SITE PLANS		
DRAWING	REVISION	TITLE
1753-02-1000 & 1001	R1	SCHEME PLAN - EXISTING TITLE INFORMATION
1753-02-1004 to 1009	R1	SCHEME PLAN - SUPERLOT SUBDIVISION
1753-02-1010 to 1035	R1	SCHEME PLAN - PROPOSED DEVELOPMENT
1753-02-2000	R1	EXISTING CONTOURS OVERALL PLAN
1753-02-2100 to 2106	R1	PROPOSED CONTOUR PLANS - OVERALL
1753-02-2110 to 2130	R1	PROPOSED CONTOUR PLANS - DETAILED
1753-02-2150 to 2151	R1	PROPOSED CONTOUR PLANS - SURPLUS FILL ZONE
1753-02-2200 to 2206	R1	PROPOSED CUT/FILL CONTOUR PLANS - OVERALL
1753-02-2210 to 2230	R1	PROPOSED CUT/FILL CONTOUR PLANS - DETAILED
1753-02-2250	R1	PROPOSED CUT/FILL CONTOUR PLANS - SURPLUS FILL ZONE
1753-02-2280 to 2285	R1	PROPOSED EARTHWORKS CONCEPT STAGING PLANS
1753-02-2300 to 2309	R1	PROPOSED EROSION AND SEDIMENT CONTROL PLANS - OVERALL
1753-02-2400 to 2410	R1	PROPOSED EROSION AND SEDIMENT CONTROL PLANS - STAGE 1
1753-02-2450 to 2451	R1	PROPOSED EROSION AND SEDIMENT CONTROL PLANS - STAGE 1 TYPICAL DETAILS
1753-02-3000 to 3008	R1	PROPOSED ROADING PLANS - OVERALL LAYOUTS
1753-02-3100 to 3147	R1	PROPOSED ROADING PLANS - DETAILED LAYOUTS
1753-02-3200 to 3228	R1	PROPOSED ROAD LONG-SECTIONS PROFILES
1753-02-3300 to 3303	R1	PROPOSED ROAD TYPICAL CROSS-SECTIONS
1753-02-4000 to 4009	R1	PROPOSED DRAINAGE PLANS - OVERALL LAYOUTS
1753-02-4100 to 4158	R1	PROPOSED DRAINAGE PLANS - DETAILED LAYOUTS
1753-02-4200 to 4258	R1	PROPOSED DRAINAGE STORMWATER LONG-SECTIONS
1753-02-4300 to 4351	R1	PROPOSED STORMWATER ATTENUATION RETENTION WETLAND
1753-02-4400 to 4441	R1	PROPOSED DRAINAGE WASTERWATER LONG-SECTIONS
1753-02-4600	R1	PRE-DEVELOPMENT EXISTING STORMWATER CATCHMENT PLAN
1753-02-4650 to 4651	R1	POST-DEVELOPMENT PROPOSED STORMWATER CATCHMENT PLAN
1753-02-4900 to 4904	R1	PROPOSED TYPICAL DRAINAGE DETAILS
1753-02-5000 to 5007	R1	PROPOSED WATER & SERVICES PLANS - OVERALL LAYOUTS
1753-02-5100 to 5119	R1	PROPOSED WATER & SERVICES PLANS - DETAILED LAYOUTS
SH59 PLANS		
DRAWING	REVISION	TITLE
1753-02-8210 to 8214	R1	PROPOSED CONTOURS PLANS SH59
1753-02-8230 to 8234	R1	PROPOSED CUT/FILL CONTOURS PLANS SH59
1753-02-8240 to 8245	R1	PROPOSED EROSION AND SEDIMENT CONTROL PLANS SH59
1753-02-8300 to 8304	R1	PROPOSED ROADING PLANS SH59
1753-02-8400 to 8404	R1	PROPOSED DRAINAGE PLANS SH59
1753-02-8420 to 8421	R1	PROPOSED DRAINAGE SH59 STORMWATER LONG-SECTIONS
1753-02-8800 to 8802	R1	SH59 BULK WASTEWATER UPGRADES
1753-02-8850 to 8852	R1	SH59 BULK WASTEWATER UPGRADES - LONG-SECTION



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REV	NOTES	BY	DATE
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PROJECT:

PUKERUA PROPERTY GROUP LP
MT WELCOME - PUKERUA BAY
PORIRUA

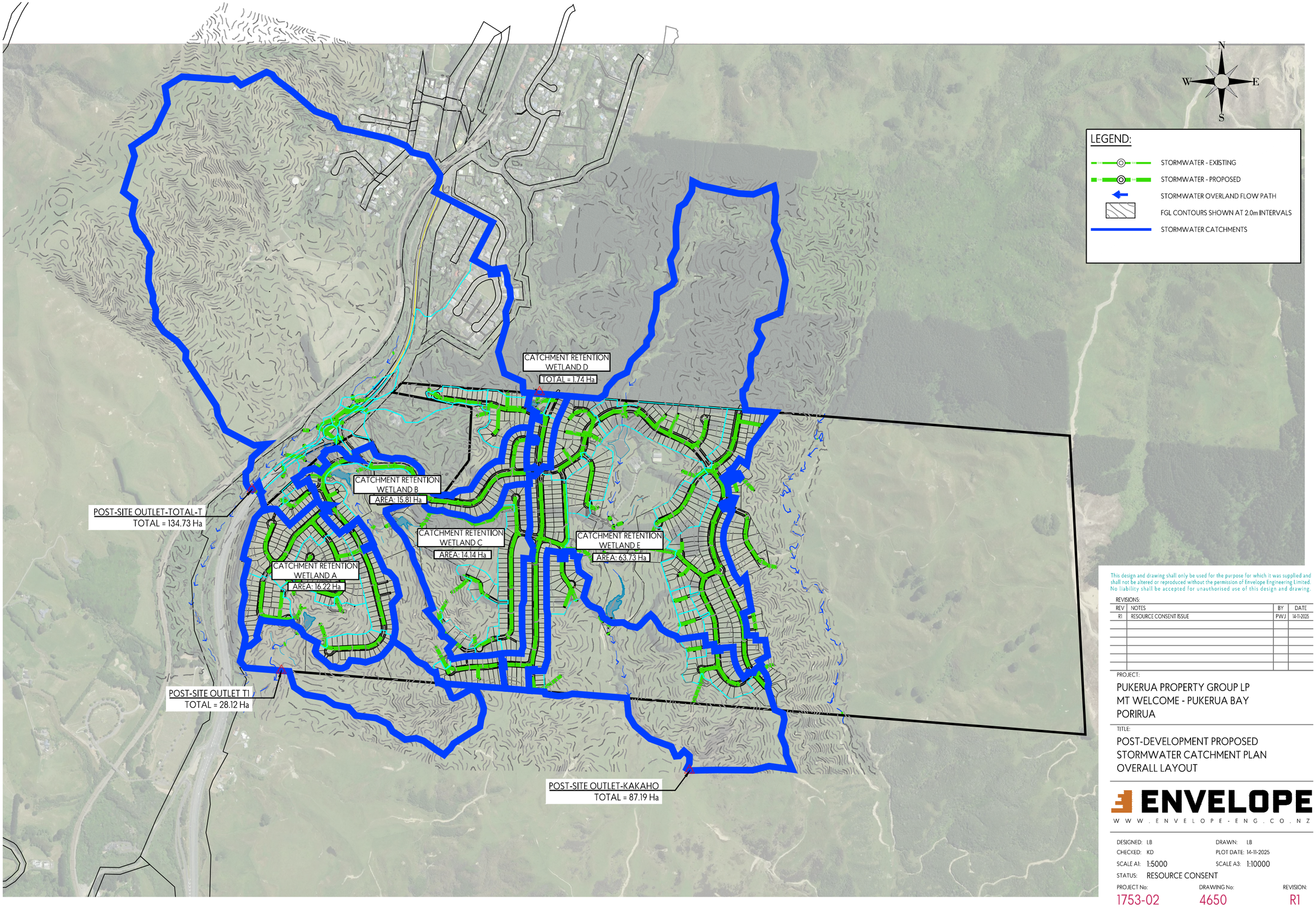
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PRE-DEVELOPMENT EXISTING STORMWATER CATCHMENT PLAN OVERALL LAYOUT

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DESIGNED: LB
DRAWN: LB
CHECKED: KD
PLOT DATE: 14-11-2025
SCALE A1: 1:5000
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STATUS: RESOURCE CONSENT

PROJECT No: 1753-02
DRAWING No: 4600
REVISION: R1



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PROJECT:

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MT WELCOME - PUKERUA BAY
PORIRUA

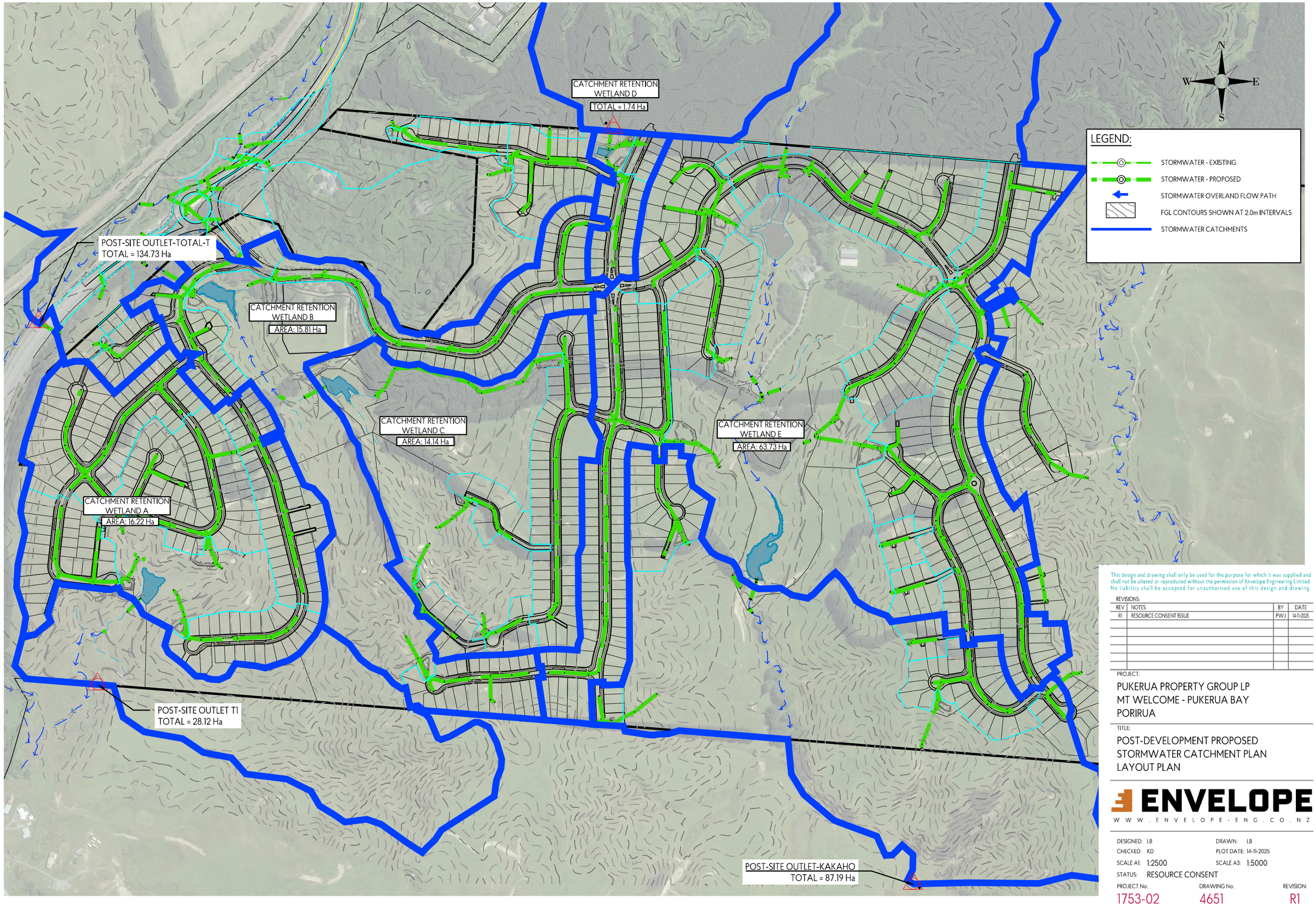
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POST-DEVELOPMENT PROPOSED STORMWATER CATCHMENT PLAN OVERALL LAYOUT

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PROJECT No: 1753-02
DRAWING No: 4650
REVISION: R1



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REV	NOTES	BY	DATE
R1	RESOURCE CONSENT ISSUE	PWJ	14-11-2025

PROJECT:

PUKERUA PROPERTY GROUP LP
MT WELCOME - PUKERUA BAY
PORIRUA

TITLE:

POST-DEVELOPMENT PROPOSED STORMWATER CATCHMENT PLAN LAYOUT PLAN

ENVELOPE
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DESIGNED: LB
DRAWN: LB
CHECKED: KD
PLOT DATE: 14-11-2025
SCALE A1: 1:2500
SCALE A3: 1:5000
STATUS: RESOURCE CONSENT

PROJECT No: 1753-02
DRAWING No: 4651
REVISION: R1

APPENDIX 2 STORMWATER CALCULATIONS

Client	Pukerua Property Group LP
Project Site	Mt Welcome
Envelope Ref	1753-02
Version	1
Date	12/11/2025

ENVELOPE

RAINGARDEN SIZING

RG ID	Impervious Road Area	Pervious Road Area	Impevious Lot Area	Total Impervious	Rain Garden Area Required	Top water level area	Top water level area (current)	Area WQ	Area WQ	WQV	WQF	WQF	Rain Garden Void Volume (40%)	Infiltration/hr	Ponding Volume (0.3m)	Total Capacity Volume (1hr)	% Utilisation (1hr WQV/Capacity)
	m^2	m^2	m^2	m^2	m^2		m^2	m^2	ha	m^3	m^3/s	m^3/hr	m^3	m^3	m^3	m^3	%
RG-01	5066	3438	7080	12146	160	200	177	12054	1.205	274	0.033	120.5	38.4	28.0	60.0	126	95%
RG-02	966	339	3540	4506	61	92	92	4332	0.433	98	0.012	43.3	14.6	10.7	27.6	53	82%
RG-03	3746	2211	11328	15074	175	250	149	14652	1.465	333	0.041	146.5	42.0	30.6	75.0	148	99%
RG-04	2148	1226	6372	8520	110	150	103	8278	0.828	188	0.023	82.8	26.4	19.3	45.0	91	91%
RG-05	5961	3339	13688	19649	250	300	185	19167	1.917	435	0.053	191.7	60.0	43.8	90.0	194	99%
RG-06	4502	2879	12508	17010	306	180	130	16591	1.659	377	0.046	165.9	73.4	53.5	54.0	181	92%
RG-07	2389	1901	5900	8289	100	140	86	8160	0.816	185	0.023	81.6	24.0	17.5	42.0	84	98%
RG-08	7885	6386	11328	19213	241	311	311	19210	1.921	436	0.053	192.1	57.8	42.2	93.3	193	99%
RG-09	3050	639	4012	7062	80	120	104	6805	0.680	154	0.019	68.0	19.2	14.0	36.0	69	98%
RG-10	1263	256	1180	2443	31	58	58	2359	0.236	54	0.007	23.6	7.4	5.4	17.4	30	78%
RG-11	1815	1702	5192	7007	80	120	91	6912	0.691	157	0.019	69.1	19.2	14.0	36.0	69	100%
RG-12	1705	984	2124	3829	43	72	72	3785	0.379	86	0.011	37.9	10.3	7.5	21.6	39	96%
RG-13	15546	3560	22420	37966	450	600	319	36602	3.660	831	0.102	366.0	108.0	78.8	180.0	367	100%
RG-14	1293	492	5428	6721	80	120	79	6458	0.646	147	0.018	64.6	19.2	14.0	36.0	69	93%
RG-15	5430	2809	13924	19354	240	300	184	18807	1.881	427	0.052	188.1	57.6	42.0	90.0	190	99%
RG-16	781	472	1180	1961	24	47	47	1933	0.193	44	0.005	19.3	5.8	4.2	14.1	24	80%
RG-17	1863	1026	5664	7527	90	120	95	7304	0.730	166	0.020	73.0	21.6	15.8	36.0	73	100%
RG-18	952	748	1652	2604	35	50	45	2586	0.259	59	0.007	25.9	8.4	6.1	15.0	30	88%
RG-19	760	461	1180	1940	24	46	46	1912	0.191	43	0.005	19.1	5.8	4.2	13.8	24	80%
RG-20	1902	708	4484	6386	80	115	86	6173	0.617	140	0.017	61.7	19.2	14.0	34.5	68	91%
RG-21	4472	1808	9440	13912	170	220	196	13487	1.349	306	0.037	134.9	40.8	29.8	66.0	137	99%
RG-22	9109	2140	12036	21145	260	350	288	20409	2.041	463	0.057	204.1	62.4	45.5	105.0	213	96%
RG-23	6859	1695	9440	16299	190	275	200	15738	1.574	357	0.044	157.4	45.6	33.3	82.5	161	98%
RG-24	2419	1422	4956	7375	90	120	111	7220	0.722	164	0.020	72.2	21.6	15.8	36.0	73	98%
RG-25	14369	4024	26196	40565	500	650	412	39141	3.914	888	0.109	391.4	120.0	87.5	195.0	403	97%
RG-26	472	168	1416	1888	18	40	28	1819	0.182	41	0.005	18.2	4.3	3.2	12.0	19	93%
RG-27	561	200	1888	2449	14	63	63	2356	0.236	53	0.007	23.6	3.4	2.5	18.9	25	95%
RG-28	472	168	1652	2124	20	45	28	2043	0.204	46	0.006	20.4	4.8	3.5	13.5	22	94%
RG-29	2660	1446	6136	8796	105	143	143	8573	0.857	195	0.024	85.7	25.2	18.4	42.9	86	99%
RG-30	762	448	708	1470	15	32	32	1463	0.146	33	0.004	14.6	3.6	2.6	9.6	16	92%

Client	Pukerua Property Group LP
Project Site	Mt Welcome
Envelope Ref	1753-02
Version	1
Date	12/11/2025

ENVELOPE

RAINGARDEN CATCHMENTS

Raingarden ID	Road Catchment Area	Catchment Area	Number of Lots	Lot Catchment Area	Road Catchment Area	Road Length	Road Width	Parking	Road Impervious	Road Pervious	Roof Area (200m² ea)	Driveways (36m² ea)	Impervious Lot Area
	m²	m²	No	m²	m²	m	m	m²	m²	m²	m²	m²	m²
RG-01		22813.2	30.0	14084.6	8728.5						6000.0	1080.0	
	ROAD 10					306.0	19.7	115.1	3144.5	2883.7			
	ROAD 01					86.0	21.7	0.0	1505.0	361.2			
	JOAL B					36.3	6.0	0.0	148.9	69.0			
	ROAD 15					27.0	14.5	0.0	267.3	124.2			
RG-02		9075.6	15.0	7468.8	1606.8						3000.0	540.0	
	ROAD 15					90.0	14.5	75.0	966.0	339.0			
RG-03		26417.3	48.0	20567.3	5850.0						9600.0	1728.0	
	ROAD 10					328.0	16.7	296.0	3543.2	1934.4			
	JOAL C					40.0	6.0	0.0	164.0	76.0			
	JOAL D					40.0	6.0	0.0	39.2	200.8			
RG-04		17224.7	27.0	13524.7	3700.0						5400.0	972.0	
	ROAD 10					202.0	16.7	148.0	2147.8	1225.6			
RG-05		37894.6	58.0	28574.9	9319.6						11600.0	2088.0	
	ROAD 11					288.0	16.7	110.7	2961.9	1847.7			
	ROAD 12					145.0	14.5	74.0	1509.5	593.0			
	ROAD 13					143.0	16.7	74.0	1489.7	898.4			
RG-06		33446.123	53	25925.9	7520.3						10600.0	1908.0	12508.0
	ROAD 13					323.5	16.7	194.0	3396.6	2005.7			
	ROAD 14					100.0	14.5	51.0	1041.0	409.0			
	JOAL I					66.0	8.0	0.0	64.1	463.9			
RG-07		17320.7818	25	12795.9	4524.9						5000.0	900.0	
	ROAD 11					213.3	16.7	191.0	2302.7	1259.4			
	JOAL J					91.0	8.0	0.0	86.6	641.4			
RG-08		38133.9277	48	23481.0	14652.9						9600.0	1728.0	
	ROAD 01					608.0	19.7	193.0	6212.2	5765.4			
	ROAD 06					158.1	14.5	107.0	1672.3	620.3			
RG-09		10863	17	7017.0	3846.0						3400.0	612.0	
	ROAD 05					170.0	21.7	75.0	3050.0	639.0			
RG-10		3299	5	1878.0	1421.0						1000.0	180.0	
	ROAD 05					70.0	21.7	38.0	1263.0	256.0			
RG-11		18751.3772	22	15219.1	3532.3						4400.0	792.0	
	ROAD 07					167.0	16.7	75.0	1728.3	1060.6			
	JOAL E					91.0	8.0	0.0	86.6	641.4			
RG-12		7474.2477	9	4295.6	3178.7						1800.0	324.0	
	ROAD 07					161.0	16.7	111.0	1704.9	983.8			
RG-13		58058.8845	95	40435.3	17623.6						19000.0	3420.0	
	ROAD 02					670.0	21.7	407.0	12132.0	2407.0			
	ROAD 03					36.0	16.7	37.0	393.4	207.8			
	ROAD 08					82.0	14.5	40.0	851.8	337.2			
	ROAD 31					208.0	13.4	110.0	2169.2	607.6			
RG-14		17840.9154	23	15874.1	1966.8						4600.0	828.0	
	ROAD 08					97.0	14.5	74.0	1034.3	372.2			
	JOAL L					63.0	6.0	0.0	258.3	119.7			
RG-15		37511.4865	59	29439.7	8071.8						11800.0	2124.0	
	ROAD 03					380.0	16.7	290.0	4052.0	2294.0			
	ROAD 04					118.0	14.5	74.0	1242.2	468.8			
	JOAL H					33.0	5.5	0.0	135.3	46.2			
RG-16		4629.4085	5	2983.0	1646.4						1000.0	180.0	
	ROAD 03					75.0	16.7	38.0	780.5	472.0			
RG-17		16630.2706	24	13487.0	3143.3						4800.0	864.0	
	ROAD 02					173.0	16.7	150.0	1862.7	1026.4			
RG-18		8089.1325	7	6435.0	1654.1						1400.0	252.0	
	JOAL F					170.0	10.0	0.0	952.0	748.0			
RG-19		8167.588	5	6851.4	1316.1						1000.0	180.0	
	JOAL G					135.7	9.0	0.0	760.0	461.4			
RG-20		18865.706	19	16068.4	2797.3						3800.0	684.0	
	ROAD 21					180.0	14.5	120.0	1902.0	708.0			
RG-21		28688.2561	40	20763.4	7924.9						8000.0	1440.0	
	ROAD 20					260.0	14.5	110.0	2684.0	1086.0			
	ROAD 22					80.0	14.5	42.0	834.0	326.0			
	ROAD 31					40.0	13.4	0.0	396.0	138.0			
	JOAL M					45.0	6.0	0.0	184.5	85.5			

	JOAL N					64.0	6.0	0.0	262.4	121.6		
	JOAL O					27.0	6.0	0.0	110.7	51.3		
RG-22		44453.3565	51	33223.4	11229.9						10200.0	1836.0
	ROAD 20					414.0	21.7	280.0	7525.0	1458.8		
	ROAD 23					107.0	14.5	37.0	1096.3	455.2		
	JOAL P					51.0	6.0	0.0	209.1	96.9		
	JOAL Q					68.0	6.0	0.0	278.8	129.2		
RG-23		26138.0231	40	25188.0	950.0						8000.0	1440.0
	ROAD 24					207.0	21.7	114.0	3736.5	755.4		
	ROAD 26					120.0	21.7	41.0	2141.0	463.0		
	JOAL R					80.0	8.3	0.0	448.0	216.0		
	JOAL S					58.0	8.5	0.0	324.8	168.2		
	ROAD 25					18.0	16.7	30.0	208.2	92.4		
RG-24		19401.4458	21	15841.0	3560.4						4200.0	756.0
	ROAD 25					230.0	16.7	142.0	2419.0	1422.0		
RG-25		71605.6972	111	54547.7	17058.0						22200.0	3996.0
	ROAD 26					536.0	21.7	408.0	9788.0	1843.2		
	ROAD 28					282.0	16.7	280.0	3071.8	1637.6		
	ROAD 29					114.0	14.5	101.0	1229.6	423.4		
	JOAL X					50.0	8.0	0.0	280.0	120.0		
	JOAL W					40.0	8.0	0.0	224.0	96.0		
RG-26		4400	6	3775.0	625.0						1200.0	216.0
	JOAL Y					80.0	8.0	0.0	472.0	168.0		
RG-27		5900	8	5098.0	802.0						1600.0	288.0
	JOAL ZA					95.0	8.0	0.0	560.5	199.5		
RG-28		4300	7	3678.0	622.0						1400.0	252.0
	JOAL ZB					80.0	8.0	0.0	472.0	168.0		
RG-29		18300	26	14177.0	4123.0						5200.0	936.0
	ROAD 28					192.0	16.7	105.0	2005.8	1200.6		
	ROAD 30					62.0	14.5	40.0	653.8	245.2		
RG-30		2900	3	1700.0	1200.0						600.0	108.0
	ROAD 02					65.0	18.6	53.0	761.5	447.5		

APPENDIX 3 FLOOD MODEL RESULTS / 100 ARI OLFP

Flood Maps attached separately

APPENDIX 4 INFODRAINAGE OUTFLOW SUMMARY

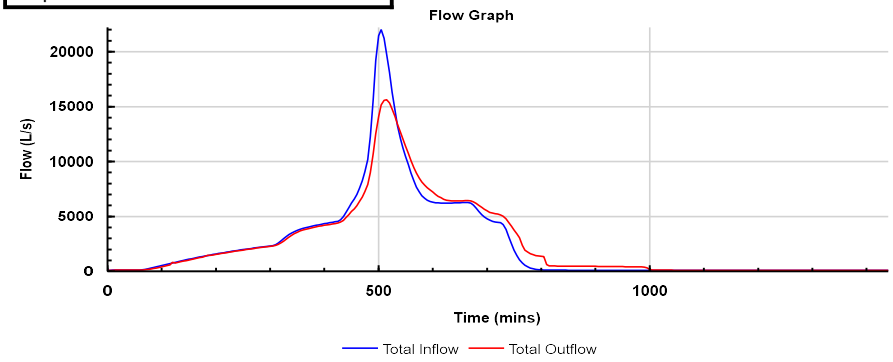
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Pukerua Property Group LP	07/08/2025		
Mt Welcome	Designed by:	Checked by:	Approved By:
Porirua	PJ	KD	KD
Report Details:	Title:		
Type: Phase Management	Stormwater		
Storm Phase: DRSW-Pre-Development	Infodrainage Outputs		

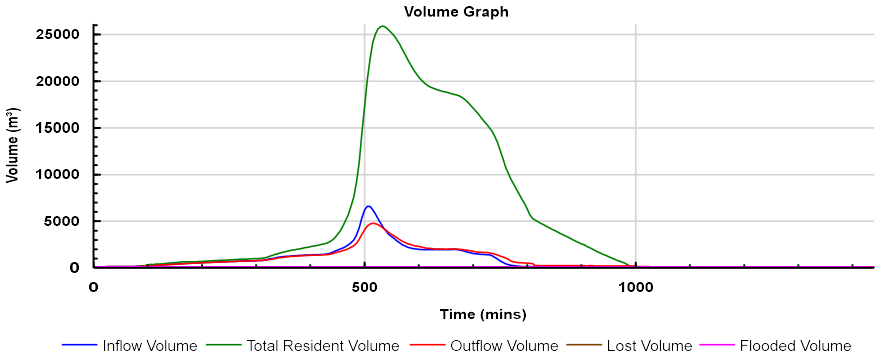
DRSW-Pre-Development
1% AEP (1in100yr) - Secondary: Increase Rainfall (%): +20: 1% AEP (1in100yr) -

Tables

Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
EX-SWCP-02-OUT			74.8	514.184
PRE-SITE OUTLET-T1			2788.9	22295.982
PRE-SITE OUTLET-NORTH			176.3	1155.569
PRE-SITE OUTLET-KAKAHO			6820.8	68442.539
PRE-SITE OUTLET-TOTAL-T			6864.0	113659.297
TOTAL	22001.7	206120.500	15588.0	206067.563

Graphs





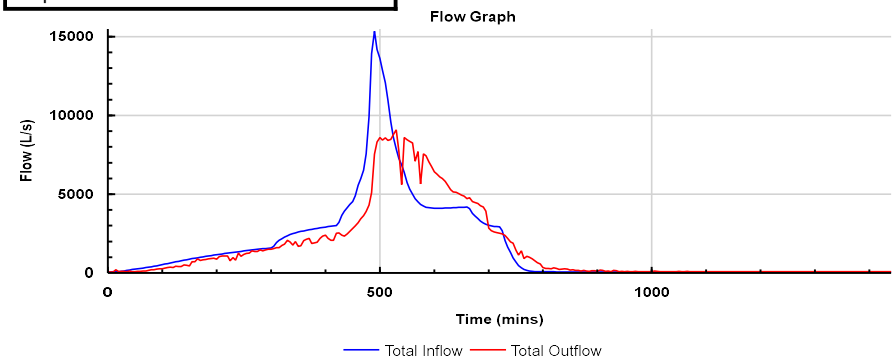
Project :	Date:		
Pukerua Property Group LP	07/08/2025		
Mt Welcome	Designed by:	Checked by:	Approved By:
Porirua	PJ	KD	KD
Report Details:	Title:		
Type: Phase Management	Stormwater		
Storm Phase: DRSW-Pre-Development	Infodrainage Outputs		

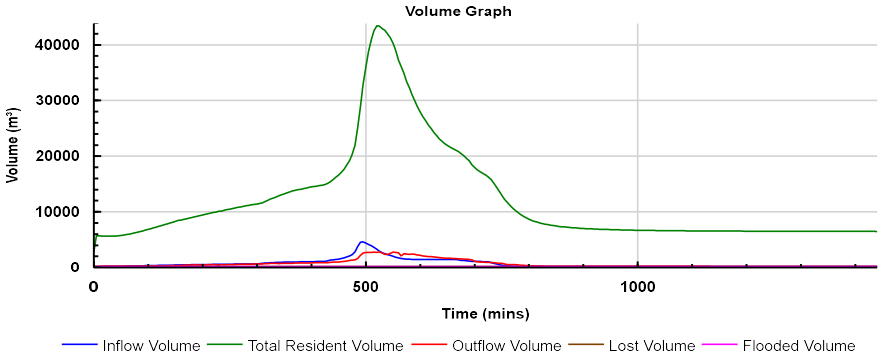
DRSW-Post Development
10% AEP (1in10yr) - Primary: Increase Rainfall (%): +20: 10% AEP (1in10yr) -

Tables

Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
POST-SITE OUTLET-T1			1512.4	17115.348
POST-SITE OUTLET-NORTH			167.2	1288.635
POST-SITE OUTLET-KAKAHO			3746.8	41114.387
SW-OUT-64-1			45.2	291.105
SW-OUT 65-1A			70.0	457.727
SW-OUT-55-1A			40.6	264.471
SW-OUT 57-1A			195.7	1255.018
POST-SITE OUTLET-TOTAL-T			4096.0	67690.992
TOTAL	15330.3	137348.609	9047.7	129477.688

Graphs





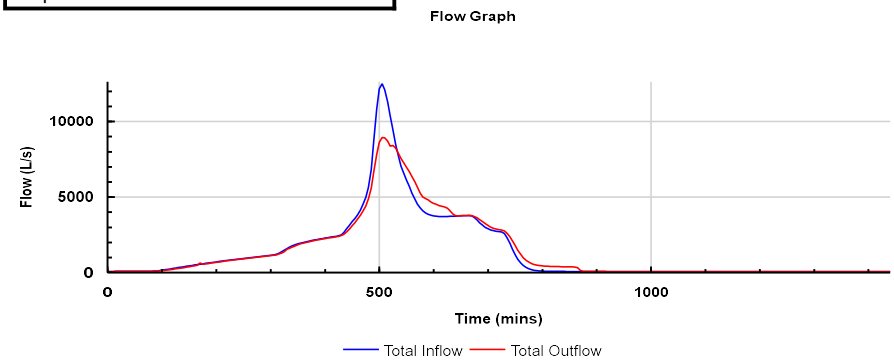
Project :	Date:		
Pukerua Property Group LP	07/08/2025		
Mt Welcome	Designed by:	Checked by:	Approved By:
Porirua	PJ	KD	KD
Report Details:	Title:		
Type: Phase Management	Stormwater		
Storm Phase: DRSW-Pre-Development	Infodrainage Outputs		

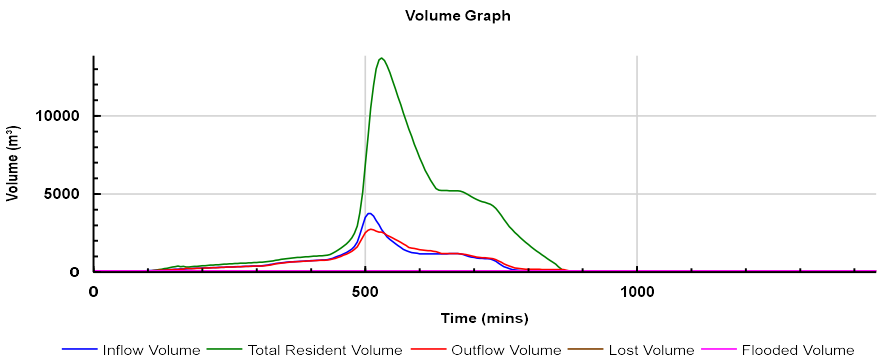
DRSW-Pre-Development
10% AEP (1in10yr) - Primary: Increase Rainfall (%): +20: 10% AEP (1in10yr) -

Tables

Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
EX-SWCP-02-OUT			49.7	335.415
PRE-SITE OUTLET-T1			1583.3	12389.733
PRE-SITE OUTLET-NORTH			100.0	642.097
PRE-SITE OUTLET-KAKAHO			3870.1	38034.832
PRE SITE OUTLET-C2			0.0	0.000
PRE-SITE OUTLET-TOTAL-T			4063.4	63313.957
TOTAL	12498.9	114716.234	8927.1	114716.031

Graphs





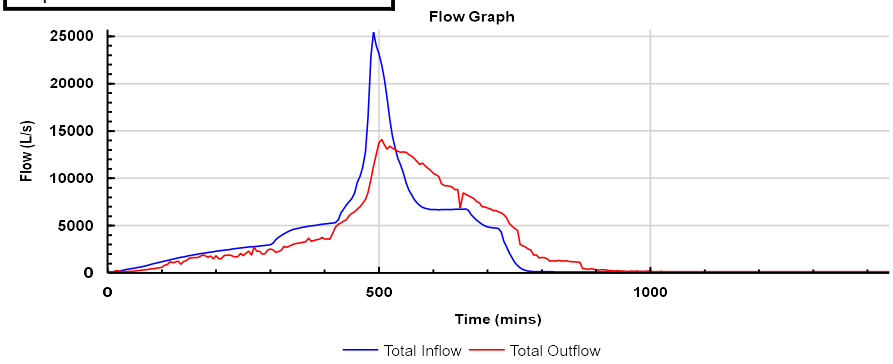
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Pukerua Property Group LP	07/08/2025		
Mt Welcome	Designed by:	Checked by:	Approved By:
Porirua	PJ	KD	KD
Report Details:	Title:		
Type: Phase Management	Stormwater		
Storm Phase: DRSW-Pre-Development	nfodrainage Outputs		

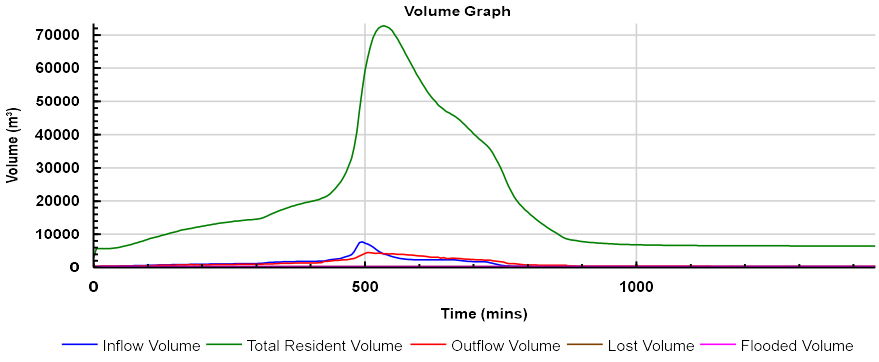
DRSW-Post Development
1% AEP (1in100yr) - Secondary: Increase Rainfall (%): +20: 1% AEP (1in100yr) -

Tables

Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
POST-SITE OUTLET-T1			2649.4	28608.492
POST-SITE OUTLET-NORTH			210.8	2067.491
POST-SITE OUTLET-KAKAHO			5611.5	80978.305
SW-OUT-64-1			69.1	459.946
SW-OUT 65-1A			107.5	722.113
SW-OUT-55-1A			62.2	418.888
SW-OUT 57-1A			310.5	2027.166
POST-SITE OUTLET-TOTAL-T			6013.4	118914.336
TOTAL	25436.9	236146.766	14043.3	234196.734

Graphs





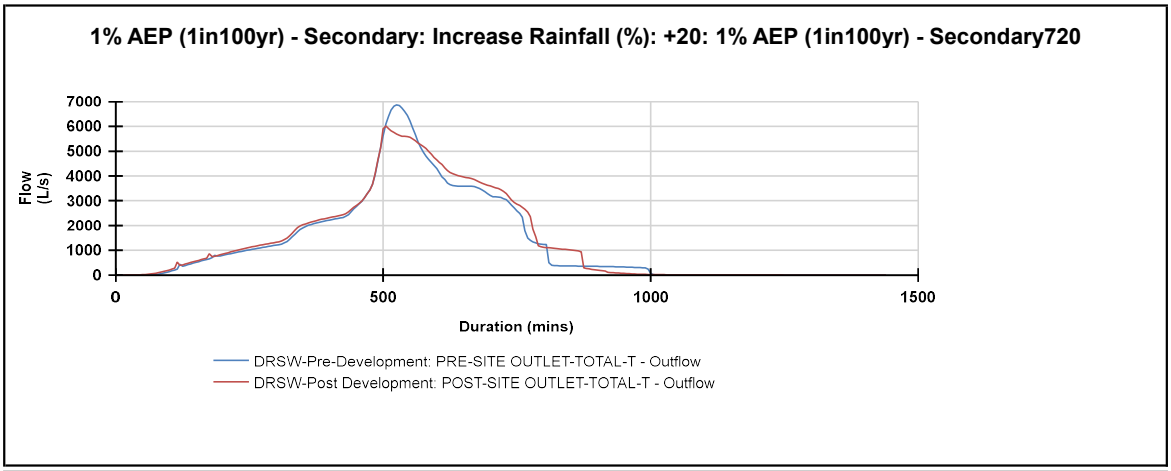
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Pukerua Property Group LP	12/11/2025		
Mt Welcome	Designed by:	Checked by:	Approved By:
Porirua	PJ	KD	KD
Report Details:	Title:		
T Outflow	Stormwater Infodrainage Outputs		

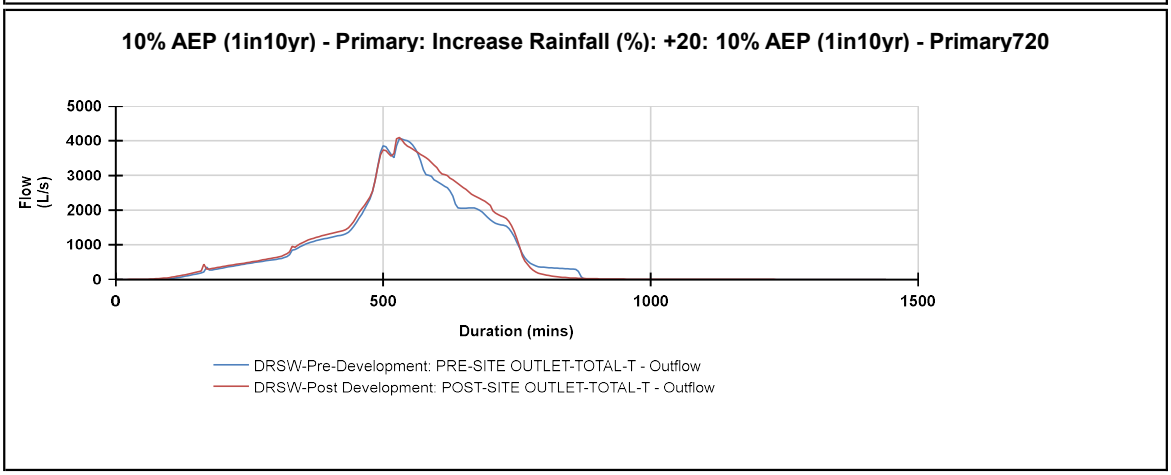
+20 %: 1% AEP (1in100yr) - Secondary720

Phase	Item Label	Max. Outflow (L/s)	Total Discharge Volume (m³)
DRSW-Pre-Development	PRE-SITE OUTLET-TOTAL-T	6864.0	113659.297
DRSW-Post Development	POST-SITE OUTLET-TOTAL-T	6013.4	118914.336

+20 %: 10% AEP (1in10yr) - Primary720

Phase	Item Label	Max. Outflow (L/s)	Total Discharge Volume (m³)
DRSW-Pre-Development	PRE-SITE OUTLET-TOTAL-T	4063.4	63313.957
DRSW-Post Development	POST-SITE OUTLET-TOTAL-T	4096.0	67690.992





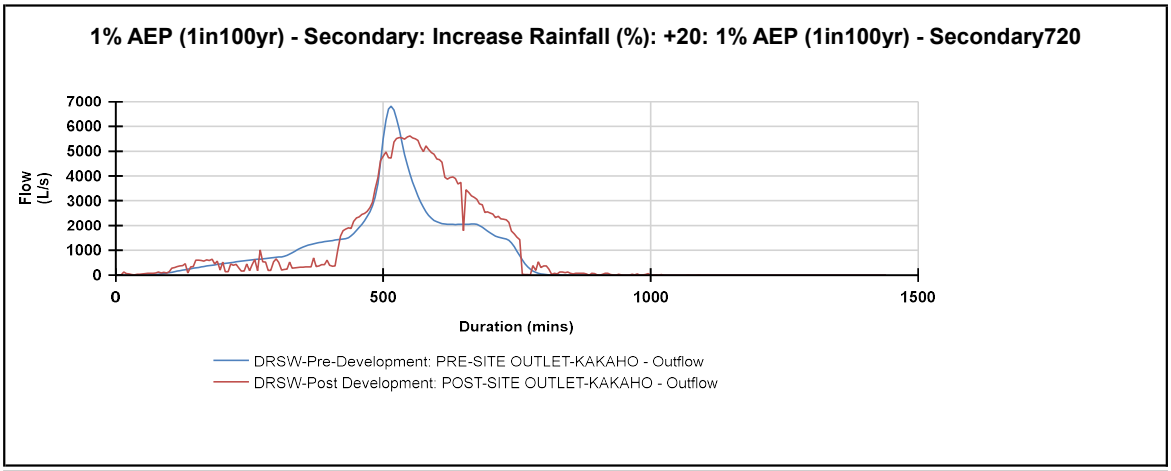
Project :	Date:		
Pukerua Property Group LP	12/11/2025		
Mt Welcome	Designed by:	Checked by:	Approved By:
Porirua	PJ	KD	KD
Report Details:	Title:		
K Outflow	Stormwater Infodrainage Outputs		

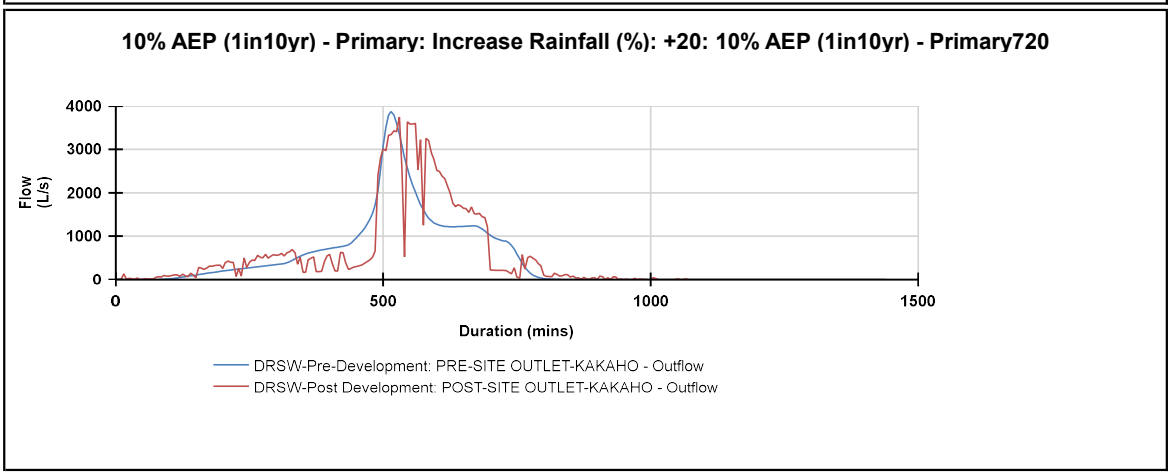
+20 %: 1% AEP (1in100yr) - Secondary720

Phase	Item Label	Max. Outflow (L/s)	Total Discharge Volume (m³)
DRSW-Pre-Development	PRE-SITE OUTLET-KAKAHO	6820.8	68442.539
DRSW-Post Development	POST-SITE OUTLET-KAKAHO	5611.5	80978.305

+20 %: 10% AEP (1in10yr) - Primary720

Phase	Item Label	Max. Outflow (L/s)	Total Discharge Volume (m³)
DRSW-Pre-Development	PRE-SITE OUTLET-KAKAHO	3870.1	38034.832
DRSW-Post Development	POST-SITE OUTLET-KAKAHO	3746.8	41114.387





APPENDIX 5 INFODRAINAGE CONTROL SUMMARY

Project :	Date:		
Pukerua Property Group LP	12/11/2025		
Mt Welcome	Designed by:	Checked by:	Approved By:
Porirua	PJ	KD	KD
Report Details:	Title:		
Type: Stormwater Controls	Stormwater		
Storm Phase: DRSW-Post Development	nfodrainage Outputs		



RETENTION A

Type : Pond

Dimensions

Exceedance Elevation (m)	44.000
Depth (m)	5.200
Base Elevation (m)	38.800
Freeboard (mm)	500
Initial Depth (m)	2.200
Porosity (%)	95
Average Slope (1:x)	6.391
Total Volume (m³)	5635.072

Depth (m)	Area (m²)	Volume (m³)
0.000	12.00	0.000
0.200	25.00	3.440
0.400	60.00	11.277
0.600	120.00	28.051
0.800	175.00	55.912
1.000	230.00	94.268
1.200	325.00	146.734
1.400	430.00	218.226
1.600	570.00	312.914
1.800	730.00	436.101
2.000	870.00	587.907
2.200	1010.00	766.342
2.400	1160.00	972.327
2.600	1300.00	1205.901
2.800	1450.00	1467.021
3.000	1590.00	1755.719
3.200	1790.00	2076.632
3.400	1970.00	2433.695
3.600	2160.00	2825.907
3.800	2340.00	3253.293
4.000	2520.00	3714.887
4.200	2690.00	4209.749
4.400	2950.00	4745.359
4.600	3180.00	5327.573
4.800	3410.00	5953.496
5.000	3660.00	6625.006
5.200	3890.00	7342.145

Advanced

Perimeter	Circular
Length (m)	121.168
Friction Scheme	Manning's n
n	0.03

RETENTION B

Type : Pond

Dimensions

Exceedance Elevation (m)	58.200
Depth (m)	5.200
Base Elevation (m)	53.000
Freeboard (mm)	300
Initial Depth (m)	1.300
Porosity (%)	95
Average Slope (1:x)	7.156
Total Volume (m³)	9349.113

Depth (m)	Area (m²)	Volume (m³)
0.000	20.00	0.000
0.200	75.00	8.470
0.400	140.00	28.576
0.600	300.00	69.422
0.800	460.00	141.083
1.000	620.00	243.305
1.200	810.00	378.754
1.400	1040.00	554.049
1.600	1200.00	766.668
1.800	1350.00	1008.778
2.000	1500.00	1279.403
2.200	1640.00	1577.604
2.400	1800.00	1904.286
2.600	1960.00	2261.379
2.800	2140.00	2650.753
3.000	2330.00	3075.275
3.200	2520.00	3535.908
3.400	2940.00	4054.095
3.600	3150.00	4632.531
3.800	3340.00	5248.993
4.000	3540.00	5902.500
4.200	3750.00	6594.955
4.400	3960.00	7327.314
4.600	4190.00	8101.461
4.800	4440.00	8921.197
5.000	4700.00	9789.379
5.200	4960.00	10706.969

Advanced

Perimeter	Circular
Length (m)	162.769
Friction Scheme	Manning's n
n	0.03

RETENTION C

Type : Pond

Dimensions

Exceedance Elevation (m)	68.000
Depth (m)	6.000
Base Elevation (m)	62.000
Freeboard (mm)	500
Initial Depth (m)	1.600
Porosity (%)	95
Average Slope (1:x)	5.862
Total Volume (m³)	6849.932

Depth (m)	Area (m²)	Volume (m³)
0.000	5.00	0.000
0.200	20.00	2.217
0.400	40.00	7.808
0.600	70.00	18.126
0.800	105.00	34.639
1.000	175.00	60.957
1.200	240.00	100.220
1.400	310.00	152.329
1.600	390.00	218.683
1.800	475.00	300.726
2.000	575.00	400.325
2.200	685.00	519.872
2.400	815.00	662.194
2.600	960.00	830.631
2.800	1110.00	1027.108
3.000	1260.00	1252.108
3.200	1400.00	1504.691
3.400	1570.00	1786.687
3.600	1750.00	2101.932
3.800	1930.00	2451.393
4.000	2120.00	2836.002
4.200	2310.00	3256.723
4.400	2510.00	3714.491
4.600	2680.00	4207.453
4.800	2860.00	4733.660
5.000	3040.00	5294.073
5.200	3220.00	5888.691
5.400	3420.00	6519.396
5.600	3660.00	7191.867
5.800	3890.00	7909.006
6.000	4170.00	8674.552

Advanced

Perimeter	Circular
Length (m)	122.171
Friction Scheme	Manning's n
n	0.03

RETENTION D

Type : Pond

Dimensions

Exceedance Elevation (m)	110.000
Depth (m)	1.500
Base Elevation (m)	108.500
Freeboard (mm)	300
Initial Depth (m)	0.300
Porosity (%)	95
Average Slope (1:x)	3.623
Total Volume (m³)	290.645

Depth (m)	Area (m²)	Volume (m³)
0.000	143.00	0.000
1.500	466.18	412.005

Advanced

Perimeter	Circular
Length (m)	34.680
Friction Scheme	Manning's n
n	0.03

RETENTION E

Type : Pond

Dimensions

Exceedance Elevation (m)	94.200
Depth (m)	5.200
Base Elevation (m)	89.000
Freeboard (mm)	500
Initial Depth (m)	2.500
Porosity (%)	95
Average Slope (1:x)	10.415
Total Volume (m³)	11542.596

Depth (m)	Area (m²)	Volume (m³)
0.000	6.00	0.000
0.200	29.00	3.052
0.400	50.00	10.467
0.600	75.00	22.262
0.800	112.00	39.910
1.000	180.00	67.396
1.200	250.00	108.064
1.400	360.00	165.698
1.600	505.00	247.485
1.800	735.00	364.604
2.000	1100.00	537.767
2.200	1450.00	779.253
2.400	1830.00	1090.154
2.600	2290.00	1480.738
2.800	2810.00	1964.396
3.000	3290.00	2543.297
3.200	3790.00	3215.338
3.400	4290.00	3982.447
3.600	4820.00	4847.409
3.800	5400.00	5817.787
4.000	6020.00	6902.154
4.200	6550.00	8095.950
4.400	7120.00	9394.223
4.600	7670.00	10798.949
4.800	8310.00	12316.643
5.000	8860.00	13947.514
5.200	9690.00	15709.176

Advanced

Perimeter	Circular
Length (m)	211.268
Friction Scheme	Manning's n
n	0.03

Project :	Date:		
Pukerua Property Group LP	**12/11/2025**		
Mt Welcome	Designed by:	Checked by:	Approved By:
Porirua	**PJ**	**KD**	**KD**
Report Details:	Title:		
Type: Stormwater Controls Summary	**Stormwater**		
Storm Phase: DRSW-Post Development	**nfodrainage Outputs**		

1% AEP (1in100yr) - Secondary: Increase Rainfall (%): +20: Critical Storm Per Item: Rank By: Max. Flooded Volume

Stormwater Control	Storm Event	Max. Avg. 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
RETENTION A	1% AEP (1in100yr) - Secondary: +20 %: 1% AEP (1in100yr) - Secondary720	3.978	2080.1	3663.281	0.000	0.000	1356.8	16897.893	34.991	OK
RETENTION B	1% AEP (1in100yr) - Secondary: +20 %: 1% AEP (1in100yr) - Secondary720	3.634	1993.1	4734.690	0.000	0.000	1096.7	29855.379	49.357	OK
RETENTION C	1% AEP (1in100yr) - Secondary: +20 %: 1% AEP (1in100yr) - Secondary720	4.579	1805.6	4154.074	0.000	0.000	559.3	13025.980	39.356	OK
RETENTION D	1% AEP (1in100yr) - Secondary: +20 %: 1% AEP (1in100yr) - Secondary720	0.867	261.8	181.043	0.000	0.000	183.4	1780.234	37.710	OK
RETENTION E	1% AEP (1in100yr) - Secondary: +20 %: 1% AEP (1in100yr) - Secondary720	4.309	5551.5	8787.785	0.000	0.000	4854.6	63598.641	23.866	OK
EX-POND 04-POST	1% AEP (1in100yr) - Secondary: +20 %: 1% AEP (1in100yr) - Secondary720	2.857	3905.5	1455.570	431.669	0.000	3862.9	67555.773	-72.154	Flood
EX-POND 05	1% AEP (1in100yr) - Secondary: +20 %: 1% AEP (1in100yr) - Secondary720	3.738	5292.5	1647.359	579.543	0.000	4987.0	47143.262	-73.553	Flood
EX-POND 07-POST	1% AEP (1in100yr) - Secondary: +20 %: 1% AEP (1in100yr) - Secondary720	3.285	1019.0	1202.620	359.991	0.000	377.0	7566.362	-58.965	Flood
EX-POND 06-POST	1% AEP (1in100yr) - Secondary: +20 %: 1% AEP (1in100yr) - Secondary720	2.519	1223.5	651.815	88.411	0.000	1098.2	10349.315	-32.422	Flood
POND-08-POST	1% AEP (1in100yr) - Secondary: +20 %: 1% AEP (1in100yr) - Secondary720	2.340	4402.0	624.344	0.000	0.000	4159.6	65770.781	-4.058	Flood Risk
EX-POND 01-02-POST-COMBINED	1% AEP (1in100yr) - Secondary: +20 %: 1% AEP (1in100yr) - Secondary720	2.807	1013.1	966.800	86.982	0.000	952.5	30398.652	-33.410	Flood

Project :	Date:		
Pukerua Property Group LP	12/11/2025		
Mt Welcome	Designed by:	Checked by:	Approved By:
Porirua	PJ	KD	KD
Report Details:	Title:		
Type: Stormwater Controls Summary	Stormwater		
Storm Phase: DRSW-Post Development	nfodrainage Outputs		

10% AEP (1in10yr) - Primary: Increase Rainfall (%): +20: Critical Storm Per Item: Rank By: Max. Flooded Volume

Stormwater Control	Storm Event	Max. Avg. 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
RETENTION A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	3.462	1645.8	2551.042	0.000	0.000	716.3	10607.722	54.729	OK
RETENTION B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	2.892	1593.1	2840.850	0.000	0.000	835.0	17661.854	69.614	OK
RETENTION C	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	3.800	1084.8	2450.924	0.000	0.000	429.6	7480.070	64.220	OK
RETENTION D	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	0.668	172.1	127.134	0.000	0.000	140.6	1128.988	56.258	OK
RETENTION E	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	3.902	3965.5	6354.333	0.000	0.000	2668.2	37855.461	44.949	OK
EX-POND 04-POST	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	2.398	2742.7	1022.122	0.000	0.000	2691.9	37920.238	-20.889	Flood Risk
EX-POND 05	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	3.292	3006.1	1056.896	0.000	0.000	2837.7	26230.189	-11.347	Flood Risk
EX-POND 07-POST	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	2.314	599.6	416.425	0.000	0.000	295.8	4327.934	44.956	OK
EX-POND 06-POST	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	2.238	713.7	450.828	0.000	0.000	610.9	5902.336	8.411	OK
POND-08-POST	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1.357	2754.3	168.069	0.000	0.000	2736.1	36880.941	71.988	OK
EX-POND 01-02-POST-COMBINED	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1.582	843.6	202.337	0.000	0.000	825.3	17963.654	72.079	OK

Project :	Date:		
Pukerua Property Group LP	**12/11/2025**		
Mt Welcome	Designed by:	Checked by:	Approved By:
Porirua	**PJ**	**KD**	**KD**
Report Details:	Title:		
Type: Inflows Summary	**Stormwater**		
Storm Phase: DRSW-Post Development	**Infodrainage Outputs**		

10% AEP (1in10yr) - Primary: Increase Rainfall (%): +20: Critical Storm Per Item: Rank By: Max. Inflow

Inflow	Storm Event	Inflow Area (m^2)	Max. Inflow (L/s)	Total Inflow Volume (m^3)
CM - INLET 74-1	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	217384.88	1173.8	9980.666
CM - CULVERT 10	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	11888.15	86.0	545.805
CM - POND 5	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	143616.35	686.2	6594.072
CM - SWSD-14	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	487.47	3.9	22.380
CM - SWSD-21	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	635.36	5.1	29.163
CM - SWSD-20	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	271.86	2.2	12.462
CM - SWSD-22	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	514.39	4.1	23.628
CM - SWSD-23	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	531.48	4.2	24.408
CM - SWSD-27	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	509.82	4.1	23.409
CM - GREEN-73-2	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	4159.52	33.2	190.986
CM RG-26	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1123.25	9.0	51.564
CM - 57-4B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	638.34	7.7	48.126
CM - 57-5B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	585.03	7.0	44.124
CM - JOAL L	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	367.34	4.6	29.598
CM - JOAL W	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	207.01	2.6	16.695
CM - R-SUMP-226	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	573.64	7.2	46.215
CM - R-SUMP-225	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	527.65	6.6	42.501
CM - R-SUMP-224-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1084.21	13.5	87.342
CM - R-SUMP-223	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	737.85	9.2	59.442
CM - R-SUMP-227	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	699.61	8.7	56.358
CM - R-SUMP-228-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	799.44	10.0	64.410
CM - R-SUMP-222	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	683.79	8.5	55.098
CM - R-SUMP-221	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	688.34	8.6	55.446
CM - R-SUMP-219	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	696.28	8.7	56.085
CM - R-SUMP-220	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	698.69	8.7	56.295
CM - R-SUMP-217	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	501.84	6.3	40.437
CM - R-SUMP-211-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1240.82	15.5	99.948
CM - R-SUMP-215	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	410.06	5.1	33.033
CM - R-SUMP-214	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	333.66	4.2	26.901
CM - R-SUMP-218-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1092.74	13.6	88.020
CM - R-SUMP-216	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	506.43	6.3	40.797
CM - R-SUMP-192	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	575.71	7.2	46.392
CM - R-SUMP-193	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	507.46	6.3	40.866
CM - R-SUMP-194	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	694.40	8.7	55.953
CM - R-SUMP-195	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	709.29	8.9	57.144
CM - R-SUMP-196	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	868.21	10.8	69.948
CM - R-SUMP-197-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1529.99	19.1	123.258
CM - R-SUMP-198	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	314.23	3.9	25.311
CM - R-SUMP-200	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	617.46	7.7	49.761
CM - R-SUMP-199	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	626.25	7.8	50.436
CM - R-SUMP-201	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	588.46	7.3	47.391
CM - R-SUMP-202	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	563.06	7.0	45.354
CM - R-SUMP-205	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	607.18	7.6	48.939
CM - R-SUMP-206	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	571.39	7.1	46.038
CM - R-SUMP-208	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	430.11	5.4	34.638
CM - R-SUMP-207	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	593.68	7.4	47.829
CM - R-SUMP-209	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	553.72	6.9	44.604
CM - R-SUMP-210	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	563.55	7.0	45.402
CM - R-SUMP-185	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	579.74	7.2	46.704
CM - R-SUMP-184	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	621.63	7.8	50.085
CM - R-SUMP-171	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1434.86	17.9	115.569
CM - R-SUMP-170	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	609.54	7.6	49.089
CM - R-SUMP-183-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	902.34	11.3	72.702
CM - R-SUMP-182	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	493.32	6.2	39.714
CM - R-SUMP-181	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	635.01	7.9	51.159
CM - R-SUMP-180	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	316.31	3.9	25.488
CM - R-SUMP-179	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	422.71	5.3	34.059
CM - R-SUMP-178	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	517.42	6.5	41.676
CM - R-SUMP-177	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	597.06	7.5	48.093
CM - R-SUMP-173	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	594.96	7.4	47.919
CM - R-SUMP-175	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	883.66	11.0	71.187
CM - R-SUMP-174	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	900.29	11.2	72.534
CM - R-SUMP-172	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	504.66	6.3	40.659
CM - R-SUMP-169	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	548.36	6.8	44.178
CM - R-SUMP-157	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	538.96	6.7	43.422
CM - R-SUMP-156	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	572.99	7.2	46.155
CM - R-SUMP-159-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1387.37	17.3	111.762
CM - R-SUMP-158-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1736.94	21.7	139.923
CM - R-SUMP-161	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	600.67	7.5	48.387
CM - R-SUMP-160	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	516.02	6.4	41.586
CM - R-SUMP-167	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	690.99	8.6	55.665
CM - R-SUMP-163	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	903.14	11.3	72.780
CM -R-SUMP-164	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	830.49	10.4	66.894
CM - R-SUMP-166	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	832.07	10.4	67.026
CM - R-SUMP-168	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	2023.05	25.3	162.984

CM - R-SUMP-154	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	894.92	11.2	72.099
CM - R-SUMP-153	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	703.12	8.8	56.658
CM - R-SUMP-232-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1261.05	15.7	101.586
CM - R-SUMP-233	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	909.33	11.4	73.272
CM - R-SUMP-234	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	796.23	9.9	64.131
CM - R-SUMP-150-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1243.08	15.5	100.146
CM - R-SUMP-151-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1141.19	14.2	91.941
CM - R-SUMP-149	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	440.69	5.5	35.499
CM - R-SUMP-148	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	339.26	4.2	27.342
CM - R-SUMP-145	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	595.64	7.4	47.967
CM - R-SUMP-146	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	984.49	12.3	79.323
CM - R-SUMP-138-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1602.46	20.0	129.084
CM - R-SUMP-143-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1064.17	13.3	85.710
CM - R-SUMP-190	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	678.41	8.5	54.642
CM - R-SUMP-188	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	725.56	9.1	58.467
CM - R-SUMP-187	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	702.20	8.8	56.583
CM - R-SUMP-189	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	548.63	6.8	44.190
CM - R-SUMP-191-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1697.53	21.2	136.746
CM - 57-7	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	404.77	4.9	30.534
CM - 57-4-3	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	2281.28	24.5	148.329
CM - 57-4A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	4445.36	47.8	289.067
CM - 57-5A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	3289.79	35.4	213.930
CM - 57-6	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	2003.81	21.5	130.290
CM - SD-24	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1745.37	13.9	80.145
CM - 69-4B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	373.45	4.5	28.140
CM - 69-4A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	376.54	4.5	28.392
CM - 70-1	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	2026.62	24.4	152.808
CM - 69-5A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	400.95	4.8	30.240
CM - 69-6C	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	446.89	5.4	33.696
CM - 69-6A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	511.55	6.2	38.583
CM - 71-1A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1153.60	13.9	86.976
CM - 71-2A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1813.67	21.8	136.755
CM - 71-1B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1973.33	23.7	148.779
CM - 69-6B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	545.90	6.6	41.172
CM - 69-7B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1678.57	20.2	126.564
CM - 62-5B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	3122.70	37.6	235.454
CM - 62-4B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	624.36	7.5	47.091
CM - 62-3B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	2574.07	31.0	194.094
CM - 62-2B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	627.30	7.5	47.307
CM - 62-1B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	747.54	9.0	56.382
CM - 67-3B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	3513.86	37.8	228.495
CM - JOAL ZB	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	660.52	8.2	53.223
CM - 68-3B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1124.72	13.5	84.807
CM - 68-3A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1581.17	19.0	119.208
CM - 69-7A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	796.07	9.6	60.003
CM - 62-5A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1568.29	18.9	118.248
CM - 62-4A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	597.62	7.2	45.057
CM - JOAL ZA	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	790.15	9.9	63.651
CM - 67-3A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1478.35	17.8	111.468
CM - 66-3B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	2171.41	23.3	141.210
CM - 62-3A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1302.00	15.7	98.160
CM - 62-2A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	468.83	5.6	35.355
CM - JOAL Y	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	663.45	8.3	53.454
CM R-SUMP-29	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	302.47	3.8	24.387
CM 18-1	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	2718.81	29.2	176.808
CM - 65-4A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1059.24	12.7	79.866
CM - 65-4B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	2905.85	35.0	219.110
CM - 65-3	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	350.00	4.2	26.367
CM - 65-2	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	562.23	6.8	42.381
CM - JOAL T	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	201.17	2.5	16.224
CM - 63-6B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	759.51	9.1	57.273
CM - 63-7B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	739.52	8.9	55.755
CM - 63-8B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1297.11	15.6	97.797
CM - 63-8A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1468.53	17.7	110.736
CM - 63-7A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	708.95	8.5	53.454
CM - 63-6A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1088.01	13.1	82.044
CM - 63-5A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	794.24	9.6	59.877
CM -63-4A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	791.32	9.5	59.673
CM - 63-3A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1875.00	22.6	141.381
CM - 64-5	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1022.81	12.3	77.124
CM - JOAL U	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	186.26	2.3	15.027
CM - 64-4	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	709.22	8.5	53.469
CM - 64-3	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	381.32	4.6	28.758
CM - 64-2	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1333.01	16.0	100.506
CM - 63-4B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	380.44	4.6	28.683
CM - 63-3B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1708.10	20.5	128.763
CM - 63-2B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	911.89	11.0	68.763
CM - 63-2A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1103.74	13.3	83.220
CM - 63-1	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	421.47	5.1	31.788
CM - JOAL X	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	411.80	5.1	33.150
CM - 59-5B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1208.17	14.5	91.107
CM - 59-6B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	409.41	4.9	30.858
CM - 61-2	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	2176.52	26.2	164.115
CM - 61-1	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	629.41	7.6	47.463
CM - 66-3A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1171.09	14.1	88.275
CM - 62-1A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	869.52	10.5	65.550
CM - 59-7B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1075.30	12.9	81.063
CM - 59-7A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1079.98	13.0	81.420
CM - 59-5A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1150.82	13.8	86.760

CM - 60-1	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	698.32	8.4	52.644
CM - 59-4	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	553.37	6.7	41.709
CM - 59-13B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1099.51	13.2	82.926
CM - 59-12B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1074.08	12.9	80.970
CM - 59-11B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1074.08	12.9	80.970
CM - 59-10B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1094.59	13.2	82.545
CM - 59-9	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	379.43	4.6	28.614
CM - 59-8A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	451.61	5.4	34.059
CM - 59-10A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	348.00	4.2	26.223
CM - 59-11A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1456.20	17.5	109.797
CM - 59-12A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1826.41	22.0	137.733
CM - 58-13A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1451.62	17.5	109.455
CM - 60-2	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	3050.05	36.7	229.973
CM - 58-6B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	2123.44	22.8	138.084
CM - 58-7B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	4408.65	47.4	286.679
CM - 58-8B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1883.05	20.2	122.448
CM - 58-9B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	3964.09	42.6	257.756
CM - 54-3A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	764.70	9.2	57.645
CM - 54-3B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	409.11	4.9	30.840
CM - 58-6A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	823.80	9.9	62.115
CM - 58-7A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1337.25	16.1	100.818
CM - 58-8A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	462.14	5.6	34.842
CM - 58-9A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1279.08	15.4	96.432
CM - 55-5	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1254.49	15.1	94.572
CM - 54-1	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	381.04	4.6	28.725
CM - 54-2B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1116.70	13.4	84.216
CM - 54-2A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1315.96	15.8	99.222
CM - 53-6B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1178.13	14.2	88.848
CM - 53-7B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	2330.13	28.0	175.689
CM - JOAL S	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	448.90	5.6	36.165
CM - JOAL R	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	705.02	8.8	56.793
CM - JOAL O	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	147.23	1.8	11.859
CM - JOAL M	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	213.00	2.7	17.169
CM - JOAL N	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	318.38	4.0	25.668
CM - 53-8B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1075.00	12.9	81.051
CM - 56-1B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1341.14	16.1	101.127
CM - 56-1A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1717.96	20.7	129.525
CM - 53-9B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	781.98	9.4	58.971
CM - 53-9A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	453.40	5.5	34.203
CM - 53-8A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1400.00	16.8	105.555
CM - 53-7A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1173.36	14.1	88.476
CM - 53-6A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1395.86	16.8	105.234
CM - 55-2	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	900.85	10.8	67.935
CM - 55-3	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1352.25	16.3	101.967
CM - JOAL-Q	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	342.00	4.3	27.549
CM - 51-1	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	2122.82	22.8	138.051
CM - 50-9B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	2556.76	27.5	166.275
CM - 50-10B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	767.78	8.3	49.932
CM - 50-11	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	5038.19	54.2	327.614
CM - 50-10A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	421.68	5.1	31.794
CM - 50-9A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	412.06	5.0	31.086
CM - 50-7B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	2019.71	24.3	152.277
CM - 50-7A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	2162.83	23.3	140.640
CM - 52-1	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	4326.70	46.5	281.375
CM - JOAL-P	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	242.87	3.0	19.572
CM - 50-6A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	841.66	9.0	54.738
CM - 50-6B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1461.95	17.6	110.220
CM - 50-5B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1025.03	12.3	77.301
CM - 50-5A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	877.49	10.6	66.156
CM - 50-4	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1826.05	22.0	137.709
CM - 47-5	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1268.71	15.3	95.673
CM - 47-4B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	420.53	5.1	31.713
CM - 47-4A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1769.08	21.3	133.392
CM - 47-3	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1402.76	16.9	105.768
CM - 47-2	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1622.21	19.5	122.325
CM - 49-3A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	710.93	8.6	53.622
CM - 49-4A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1835.58	22.1	138.408
CM - 49-4B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1215.05	14.6	91.623
CM - 47-1B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1296.52	15.6	97.749
CM - 47-1A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	730.26	8.8	55.080
CM - 46-1	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	360.42	4.3	27.186
CM - 46-2	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	2472.03	29.7	186.411
CM - 44-6B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1268.70	15.3	95.670
CM - 44-6A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	928.09	11.2	69.984
CM - 44-7B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	433.27	5.2	32.667
CM - 45-1	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	2433.37	29.3	183.492
CM - 44-8C	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1307.39	15.7	98.571
CM - 44-8B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	513.49	6.2	38.736
CM - 44-7A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1287.62	15.5	97.104
CM - 48-7	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1711.98	20.6	129.111
CM - 48-6B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1506.38	18.1	113.577
CM - 48-6A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1958.35	21.1	127.332
CM - 48-5B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1191.92	14.3	89.874
CM - 48-5A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	3296.22	35.4	214.335
CM - 48-4	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	2378.69	25.6	154.674
CM - 42-3	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	897.15	10.8	67.650
CM - 42-4A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1883.21	22.7	141.990
CM - 42-4B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	3336.77	35.9	216.993
CM R-SUMP-137-JOAL H	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	136.38	1.7	10.977

CM 25-6B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	2161.04	26.0	162.966
CM - 42-5B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	2350.81	25.3	152.880
CM 43-1	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	3823.31	41.1	248.627
CM R-SUMP-120	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	274.52	3.4	22.101
CM R-SUMP-118	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	431.63	5.4	34.764
CM R-SUMP-116	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	676.35	8.4	54.483
CM R-SUMP-114	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	701.40	8.8	56.499
CM R-SUMP-113-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	688.69	8.6	55.485
CM R-SUMP-110	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	408.76	5.1	32.946
CM R-SUMP-106	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	655.13	8.2	52.779
CM R-SUMP-100	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	701.86	8.8	56.550
CM R-SUMP-98	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	584.50	7.3	47.106
CM R-SUMP-96	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	584.50	7.3	47.106
CM R-SUMP-94	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	585.27	7.3	47.157
CM R-SUMP-92-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	720.32	9.0	58.026
CM R-SUMP-90	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	804.47	10.0	64.794
CM R-SUMP-88	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	811.50	10.1	65.352
CM R-SUMP-129	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	709.89	8.9	57.189
CM R-SUMP-130	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	748.45	9.3	60.300
CM R-SUMP-128	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	456.95	5.7	36.810
CM R-SUMP-126	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	744.97	9.3	60.009
CM R-SUMP-124	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	617.75	7.7	49.770
CM R-SUMP-86-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	943.81	11.8	76.026
CM R-SUMP-84	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	643.18	8.0	51.822
CM R-SUMP-82	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	899.32	11.2	72.444
CM R-SUMP-81	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	511.08	6.4	41.193
CM R-SUMP-80	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	714.89	8.9	57.579
CM R-SUMP-78	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	621.87	7.8	50.115
CM R-SUMP-76	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	957.85	12.0	77.163
CM R-SUMP-75	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	814.19	10.2	65.592
CM R-SUMP-74	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	540.51	6.7	43.572
CM R-SUMP-73	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	573.05	7.2	46.161
CM R-SUMP-72	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	711.26	8.9	57.297
CM 10-1A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1185.16	12.7	77.076
CM 7-8B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	3060.97	32.9	199.050
CM 7-9B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1723.54	18.5	112.098
CM 7-10A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	6284.31	75.6	473.855
CM 7-9A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	359.43	4.3	27.114
CM 7-8A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	353.46	4.2	26.652
CM 31-2 (G)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	7773.08	62.1	356.889
CM SWSD-02	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	308.22	2.5	14.148
CM R-SUMP-242	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	488.66	6.1	39.357
CM R-SUMP-89	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	866.71	10.8	69.828
CM 32-11A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1840.10	22.1	138.759
CM 32-11B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1072.50	12.9	80.868
CM R-SUMP-91	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	759.50	9.5	61.191
CM 32-10A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1750.00	21.1	131.958
CM 32-10B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1787.50	21.5	134.775
CM 32-9A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	703.61	8.5	53.049
CM 32-9B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	873.74	10.5	65.874
CM R-SUMP-95	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	685.06	8.6	55.173
CM 32-7B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	430.52	5.2	32.466
CM 33-1A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	717.92	8.6	54.129
CM RES-SUMP-93-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	329.30	2.6	15.105
CM R-SUMP-93-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	909.95	11.4	73.338
CM 33-2A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	355.92	4.3	26.844
CM 33-2B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	377.49	4.5	28.473
CM R-SUMP-97	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	642.95	8.0	51.801
CM 33-3A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	2100.00	25.3	158.337
CM 33-3B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1750.00	21.1	131.958
CM R-SUMP-99	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	526.05	6.6	42.402
CM 33-4A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1767.50	21.3	133.260
CM 33-4B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1898.92	22.8	143.175
CM R-SUMP-101	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	701.40	8.8	56.499
CM 33-5A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1855.72	22.3	139.923
CM 33-5B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	2698.94	32.5	203.505
CM 33-9A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	2516.02	27.0	163.611
CM 28-5A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1941.07	20.9	126.231
CM 25-9B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	496.82	6.0	37.464
CM R-SUMP-109-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	869.83	10.9	70.065
CM R-SUMP-111	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	890.83	11.1	71.772
CM RES-SUMP-109-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	3332.43	26.6	153.003
CM R-SUMP-115	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	701.40	8.8	56.499
CM 25-6A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	2713.20	32.6	204.573
CM R-SUMP-117	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	689.20	8.6	55.521
CM 25-7A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	2634.07	31.7	198.639
CM R-SUMP-119	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	448.27	5.6	36.090
CM 25-7B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1080.52	13.0	81.459
CM 25-7C	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	746.06	9.0	56.262
CM 25-8A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1535.09	18.5	115.746
CM R-SUMP-121	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	438.20	5.5	35.310
CM 25-8B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1172.13	14.1	88.371
CM 25-9A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	2872.61	30.9	186.813
CM R-SUMP-71	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	864.76	10.8	69.669
CM R-SUMP-06	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	954.22	11.9	76.884
CM R-SUMP-05-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1194.48	14.9	96.225
CM R-SUMP-38-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1057.01	13.2	85.152
CM R-SUMP-39-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	984.81	12.3	79.338
CM R-SUMP-40	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	434.73	5.4	35.046

CM R-SUMP-41	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	367.15	4.6	29.568
CM R-SUMP-43	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	665.63	8.3	53.622
CM R-SUMP-42	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	682.70	8.5	55.023
CM R-SUMP-44	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	458.20	5.7	36.903
CM R-SUMP-45	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	433.65	5.4	34.938
CM R-SUMP-36	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	834.32	10.4	67.194
CM R-SUMP-34-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1347.79	16.8	108.585
CM R-SUMP-35	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	656.29	8.2	52.848
CM R-SUMP-25	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	378.71	4.7	30.525
CM R-SUMP-26	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	438.41	5.5	35.322
CM R-SUMP-27	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	814.37	10.2	65.604
CM R-SUMP-28	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	737.57	9.2	59.412
CM R-SUMP-30	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	743.12	9.3	59.856
CM R-SUMP-31	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	649.12	8.1	52.290
CM R-SUMP-33-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	897.71	11.2	72.309
CM R-SUMP-20	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	447.11	5.6	36.006
CM R-SUMP-60	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	719.22	9.0	57.939
CM R-SUMP-59	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	533.21	6.7	42.957
CM R-SUMP-24-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	953.42	11.9	76.812
CM R-SUMP-23-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	951.62	11.9	76.656
CM R-SUMP-22	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	558.73	7.0	44.994
CM R-SUMP-21	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	512.68	6.4	41.301
CM R-SUMP-15-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1335.56	16.7	107.607
CM R-SUMP-14	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	320.65	4.0	25.824
CM R-SUMP-13	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	314.91	3.9	25.344
CM R-SUMP-08	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	544.87	6.8	43.887
CM R-SUMP-09	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	784.64	9.8	63.219
CM R-SUMP-19	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	579.08	7.2	46.641
CM R-SUMP-18	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	665.40	8.3	53.610
CM R-SUMP-17-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1272.33	15.9	102.489
CM R-SUMP-16	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	585.20	7.3	47.154
CM R-SUMP-12	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	613.90	7.7	49.464
CM R-SUMP-11	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	619.95	7.7	49.938
CM R-SUMP-47-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1187.66	14.8	95.661
CM R-SUMP-46-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1186.74	14.8	95.601
CM R-SUMP-49	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	718.58	9.0	57.888
CM R-SUMP-48	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	655.77	8.2	52.815
CM R-SUMP-53	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	858.48	10.7	69.153
CM R-SUMP-52	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	867.31	10.8	69.864
CM R-SUMP-55	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	612.55	7.6	49.359
CM R-SUMP-54	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	562.76	7.0	45.324
CM R-SUMP-57	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	448.62	5.6	36.126
CM R-SUMP-56	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	399.29	5.0	32.184
CM R-SUMP-07-JOAL E	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	160.86	2.0	12.975
CM 13-8A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1716.53	20.7	129.426
CM 11-1B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1110.28	13.4	83.703
CM 13-6B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	3247.31	34.9	211.185
CM 13-7A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1514.32	16.3	98.484
CM 13-8B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	2952.99	31.7	192.048
CM 13-9B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	2468.46	29.7	186.135
CM 13-9A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1348.87	16.2	101.709
CM 16-5A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	542.33	6.5	40.896
CM R-SUMP-32-JOAL C	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	772.37	9.6	62.208
CM 17-1B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	768.02	9.2	57.921
CM 17-1A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1741.09	20.9	131.292
CM 16-8B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	2192.48	26.4	165.315
CM 16-8A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	5973.36	64.2	388.427
CM 16-6B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1210.22	14.6	91.239
CM 16-6A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	846.48	9.1	55.041
CM 16-7A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1695.90	18.2	110.274
CM SWSD-14	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	858.67	6.9	39.426
CM POST-SITE OUTLET-K	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1871.14	15.0	85.914
CM EX-POND-06-POST	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	106924.12	634.7	5209.921
CM SW POND C	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	84915.35	531.9	3898.809
CM -R-SUMP-70	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1138.31	13.4	83.832
CM SITE OUTLET-A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	117054.67	686.8	5374.291
CM 21-08B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	450.91	5.4	34.002
CM 21-09B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1385.58	16.7	104.463
CM 21-11B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1690.42	20.3	127.473
CM EX-POND 07-POST	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	69587.52	428.6	3214.065
CM SWSD-12	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	250.42	2.0	11.496
CM SWSD-01	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	644.13	5.1	29.571
CM 21-12B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1607.29	19.3	121.191
CM SWSD-11	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	323.09	2.6	14.841
CM SWSD-18	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	118.72	0.9	5.439
CM R-SUMP-135-DBL-JOAL F	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	882.34	11.0	71.076
CM R-SUMP-136-JOAL F	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	774.97	9.7	62.406
CM 26-9A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1051.34	12.6	79.263
CM 26-7B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1438.70	17.3	108.477
CM 26-5A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1227.39	14.8	92.544
CM 26-6A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	586.48	7.1	44.244
CM 26-8A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	646.10	7.8	48.702
CM 27-2A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1475.38	17.7	111.240
CM 27-5A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	595.58	7.2	44.916
CM 27-6B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1554.41	18.7	117.204
CM R-SUMP-133	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	351.97	4.4	28.338
CM R-SUMP-134	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	963.87	12.0	77.661
CM 27-6A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1987.74	23.9	149.865
CM SWSD-16	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	176.83	1.4	8.112

CM R-SUMP-122-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1665.50	20.8	134.172
CM R-SUMP-77	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	799.53	10.0	64.422
CM SWSD-15	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	579.55	4.6	26.607
CM 8-1B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	904.72	10.9	68.232
CM 32-7A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	444.67	5.3	33.522
CM R-SUMP-236	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	516.60	6.4	41.625
CM R-SUMP-237	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	701.40	8.8	56.499
CM 41-4A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1232.70	14.8	92.934
CM 41-3A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	2465.40	29.7	185.907
CM R-SUMP-142	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	462.25	5.8	37.227
CM 41-2A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	911.37	11.0	68.742
CM 32-8A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	886.83	10.7	66.864
CM 32-6B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	628.15	7.6	47.355
CM R-SUMP-141-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	559.98	7.0	45.093
CM 42-5A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1455.19	17.5	109.710
CM 14-6C	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1940.93	23.4	146.358
CM R-SUMP-51-JOAL D	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	187.03	2.3	15.069
CM 14-5C	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1234.76	14.9	93.096
CM R-SUMP-50-JOAL C	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	187.00	2.3	15.063
CM 15-1B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	2839.24	34.2	214.079
CM 19-10B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	3289.68	35.4	213.927
CM 14-5B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1675.14	20.2	126.303
CM R-SUMP-131-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	654.77	8.2	52.743
CM 38-5A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	2415.80	29.1	182.151
CM 38-6A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1436.81	17.3	108.321
CM 37-5A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	495.89	6.0	37.413
CM 33-9B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1078.13	13.0	81.300
CM 28-5B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1007.86	12.1	75.993
CM 37-6B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1051.55	12.6	79.278
CM 37-7B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	474.73	5.7	35.787
CM 40-2A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	2684.73	28.9	174.582
CM 40-1B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1221.79	14.7	92.145
CM 40-1A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1760.87	18.9	114.507
CM 37-6A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	497.76	6.0	37.536
CM R-SUMP-132-JOAL E	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	741.93	9.3	59.769
CM 39-4A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1810.98	21.8	136.566
CM 37-7A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	861.09	10.4	64.926
CM 37-8A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1983.63	21.3	128.982
CM 37-9A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	926.07	10.0	60.213
CM R-SUMP-127	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	582.18	7.3	46.899
CM R-SUMP-125	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	729.16	9.1	58.737
CM 29-4A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	392.74	4.7	29.616
CM 29-5B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1989.54	23.9	150.009
CM 29-6B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	739.92	8.9	55.788
CM 29-7B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	700.02	8.4	52.806
CM 29-58A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	3271.75	35.2	212.766
CM 29-6A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1748.50	18.8	113.700
CM 29-7A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1627.10	17.5	105.816
CM SWSD-17	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	705.11	5.6	32.355
CM 30-1A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	4415.00	47.5	287.087
CM R-SUMP-108-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1850.07	23.1	149.052
CM R-SUMP-107	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	634.19	7.9	51.075
CM R-SUMP-123	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	563.50	7.0	45.402
CM 22-5A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1064.59	12.8	80.277
CM 22-4A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	715.70	8.6	53.976
CM 22-3B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	710.67	8.5	53.586
CM 22-2B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1519.86	18.3	114.594
CM SWSD-07	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	339.65	2.7	15.588
CM SWSD-03	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1273.62	10.2	58.491
CM SWSD-04	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	444.02	3.5	20.391
CM 6-3A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	2306.87	27.8	173.949
CM EX-SWCP-02	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	2567.73	33.3	229.163
CM EX-SWIN-02	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	6578.02	45.2	302.016
CM EX-SWIN-03	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	8980.26	61.1	412.305
CM SW POND A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	24683.64	197.3	1133.333
CM 2-3A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1996.14	24.0	150.507
CM 3-1A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	353.22	4.2	26.640
CM 4-1A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1011.18	12.2	76.254
CM 3-2B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	790.40	9.5	59.598
CM 6-4B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1907.35	22.9	143.814
CM 6-4A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	2139.84	25.7	161.337
CM 3-3B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	788.23	9.5	59.412
CM 8-4A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1087.35	13.1	81.990
CM 8-3A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1794.59	21.6	135.324
CM 8-2A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1911.98	23.0	144.171
CM 8-1A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	772.50	9.3	58.245
CM R-SUMP-10-JOAL A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	204.83	2.6	16.506
CM 3-3A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	316.15	3.8	23.829
CM 3-2A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	336.54	4.0	25.395
CM 3-4A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	784.10	9.4	59.130
CM 5-1A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1000.69	12.0	75.450
CM 3-5A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	2074.39	25.0	156.426
CM 3-5B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1873.90	22.5	141.300
CM 15-1A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1816.76	21.9	136.977
CM 14-4B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	2470.03	29.7	186.243
CM 14-4A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1490.17	17.9	112.347
CM 14-5A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1260.79	15.2	95.070
CM 14-6A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1260.00	15.2	94.995
CM 14-7A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	2546.17	30.6	191.994

CM 14-6B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	780.00	9.4	58.809
CM 14-7B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	4663.94	50.1	303.305
CM 19-10A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	509.67	6.1	38.421
CM 19-9A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	533.38	6.4	40.215
CM 19-8A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1530.14	18.4	115.371
CM 19-7A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1539.67	18.5	116.103
CM 19-6A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	856.91	10.3	64.605
CM R-SUMP-58-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1702.79	21.3	137.178
CM 19-5A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	946.13	11.4	71.322
CM 19-6B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1230.78	14.8	92.784
CM 19-7B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	2124.86	25.6	160.221
CM 19-8B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	2015.99	21.7	131.091
CM 19-9B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1314.65	14.1	85.509
CM 9-1A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1039.70	12.5	78.405
CM 9-1B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1793.82	21.6	135.261
CM 8-3B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1064.72	12.8	80.283
CM 8-2B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1436.47	17.3	108.300
CM 7-5A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	878.16	10.6	66.216
CM 7-5B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1368.89	16.5	103.227
CM SWSD-05	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	528.42	4.2	24.264
CM 11-3B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1682.22	20.2	126.831
CM 11-4A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	3695.57	44.5	278.663
CM 12-1A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	668.56	8.0	50.412
CM R-SUMP-37-JOAL B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	524.96	6.6	42.288
CM 11-3A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	724.43	8.7	54.636
CM 12-1B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1184.27	14.2	89.304
CM 11-2A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1162.00	14.0	87.624
CM 11-1A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1526.42	18.4	115.107
CM 13-6A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	364.48	4.4	27.474
CM R-SUMP-79-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1238.01	15.5	99.744
CM 22-3A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1008.72	12.1	76.059
CM 22-2A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1741.07	20.9	131.283
CM 21-14A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1606.97	19.3	121.170
CM 21-13A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	846.85	10.2	63.846
CM 21-12A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	429.25	5.2	32.376
CM 21-11A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	2881.70	31.0	187.380
CM 21-10A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	2242.55	24.1	145.815
CM 21-09A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1502.25	16.1	97.674
CM SW POND 4	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1605.75	12.8	73.740
CM SWSD-10	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	163.10	1.3	7.479
CM SWSD-09	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	281.12	2.2	12.897
CM 36-3A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	2301.02	27.7	173.499
CM R-SUMP-87-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	806.34	10.1	64.965
CM R-SUMP-85	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	819.34	10.2	65.988
CM 35-5B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1406.26	16.9	106.020
CM 35-5A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1879.73	22.6	141.744
CM R-SUMP-83	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	912.11	11.4	73.497
CM 35-6B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1914.08	23.0	144.321
CM 35-6A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1838.79	22.1	138.648
CM 25-1A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	432.10	5.2	32.574
CM 24-10A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	3840.98	46.2	289.613
CM R-SUMP-112-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	852.02	10.6	68.628
CM 25-2B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1049.97	12.6	79.155
CM 25-2A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1296.26	15.6	97.731
CM 25-3B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	418.14	5.0	31.518
CM 25-3A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	496.30	6.0	37.440
CM 25-4B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1686.27	20.3	127.137
CM 25-5B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	749.93	9.0	56.520
CM - 59-6A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	512.45	6.2	38.643
CM R-SUMP-238	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	306.57	3.8	24.702
CM - R-SUMP-239	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	406.12	5.1	32.706
CM - R-SUMP-140	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	379.72	4.7	30.573
CM - R-SUMP-144	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	819.82	10.2	66.048
CM - 44-8A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	542.44	6.5	40.902
CM EX-POND 05-POST	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	567922.19	3006.1	26230.199
CM 94-3	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	2833.76	27.1	159.132
CM SUMP-305-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	671.15	8.1	50.919
CM SUMP-300-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	812.13	10.5	71.640
CM POND-08-POST	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	3638.20	35.8	210.423
CM SUMP-309	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1469.79	11.7	67.464
CM SUMP-303-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	4504.45	40.6	236.634
CM SUMP-302	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	4171.45	39.0	228.417
CM SUMP-301	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1589.22	19.5	124.236
CM SUMP-304-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	2313.18	25.4	152.781
CM SUMP-307-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1556.08	19.2	123.126
CM SUMP-308-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1033.29	13.4	92.235
CM EX-POND-04 POST	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	4778.17	38.7	230.049
CM 33-8B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	401.50	4.8	30.279
CM 33-8A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1435.55	15.4	93.351
CM 76-5A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1155.00	13.9	87.084
CM 33-6B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1846.71	22.2	139.245
CM 33-6A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	2925.00	35.2	220.556
CM R-SUMP-104	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	547.83	6.8	44.145
CM R-SUMP-105	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	555.21	6.9	44.721
CM R-SUMP-102	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	869.43	10.9	70.041
CM R-SUMP-103	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	839.17	10.5	67.611
CM R-SUMP-240	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	2133.49	23.0	139.692
CM R-SUMP-241	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1105.92	12.8	79.098
CM SITE OUTLET-K POST	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	181676.17	1000.3	8341.180

CM WEST TO TOTAL SITE OUTLET	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	222743.18	1311.2	10226.774
CM -R-SUMP-69	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	793.16	9.9	63.903
CM -R-SUMP-67	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	497.45	6.2	40.071
CM -R-SUMP-68	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	749.13	7.7	46.290
CM 21-7A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	359.91	4.3	27.144
CM 21-08A	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	2006.86	24.1	151.329
CM R-SUMP-65	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	812.02	10.1	65.403
CM R-SUMP-66	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1840.40	18.9	113.667
CM R-SUMP-64	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1295.64	14.0	84.837
CM R-SUMP-63	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	520.47	6.5	41.928
CM R-SUMP-61	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	888.38	11.1	71.574
CM R-SUMP-62	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1730.92	18.6	113.343
CM R-SUMP-02	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	484.44	6.0	39.024
CM R-SUMP-01	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	2258.59	23.2	139.497
CM R-SUMP-03	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	366.33	4.6	29.490
CM R-SUMP-04	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	975.63	12.2	78.597
CM RG-07	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	1052.85	8.4	48.330
Catchment Area (1)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	12867.77	163.2	1068.477
CM RETENTION-B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	59433.88	360.8	2728.812

Project :	Date:		
Pukerua Property Group LP	12/11/2025		
Mt Welcome	Designed by:	Checked by:	Approved By:
Porirua	**PJ**	**KD**	**KD**
Report Details:	Title:		
Type: Connections Summary	**Stormwater**		
Storm Phase: DRSW-Post Development	**Infodrainage Outputs**		

10% AEP (1in10yr) - Primary: Increase Rainfall (%): +20: Critical Storm Per Item: Rank By: Max. Flow

Connection	Storm Event	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
SW PIPE 1	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	EX-SWCP-02	EX-SWCP-02-OUT	47.555	47.072	0.125	229.163	1.5	0.22	33.2	OK
SW PIPE 2	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	EX-SW-IN-03	POST-SITE OUTLET-T2	46.459	45.728	0.450	1457.315	1.3	1.21	212.6	Surcharged
SW PIPE 3	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SW-IN-95-NEW	POST-SITE OUTLET-T3	51.000	50.178	0.600	17963.686	2.9	0.71	823.8	OK
Pipe (12)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 92-1	SWMH 91-2	56.576	55.913	0.160	389.414	1.4	0.37	64.5	OK
SW PIPE 9	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 2-5	SWMH 2-4	62.891	60.678	0.075	178.533	1.8	0.07	28.5	OK
SW PIPE 10	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 2-4	SWMH 2-3	60.079	58.712	0.130	437.107	2.3	0.3	68.5	OK
SW PIPE 11	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 2-3	SWMH 2-2	58.829	57.037	0.180	437.103	1.5	0.64	67.3	OK
SW PIPE 12	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 2-2	SW-OUT 2-1	58.176	56.706	0.190	1549.252	4.2	0.43	236.2	OK
SW PIPE 13	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 3-5	SWMH 3-4	65.254	63.399	0.147	297.725	1.3	0.47	45.6	OK
SW PIPE 14	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 3-4	SWMH 3-3	64.682	62.703	0.150	456.077	2.0	0.48	69.5	OK
SW PIPE 15	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 3-3	SWMH 3-2	63.609	61.798	0.140	631.282	3.0	0.42	96.4	OK
SW PIPE 16	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 3-2	SWMH 3-1	61.460	60.040	0.150	823.367	3.6	0.43	125.2	OK
SW PIPE 17	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 3-1	SWMH 2-2	58.531	57.179	0.217	939.240	2.2	0.58	143.1	OK
SW PIPE 18	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 5-1	SWMH 3-3	63.891	62.252	0.077	75.440	0.9	0.1	11.9	OK
SW PIPE 19	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 4-1	SWMH 3-1	58.776	57.572	0.071	76.249	0.9	0.12	11.7	OK
SW PIPE 20	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 6-5	SWMH 6-4	60.566	58.938	0.169	356.272	1.4	0.52	55.5	OK
SW PIPE 247	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 19-3	SWMH 19-2	55.672	54.525	0.300	1450.036	3.2	0.38	225.5	OK
SW PIPE 22	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 6-2	SW-OUT 6-1	57.822	56.530	0.127	651.930	3.5	0.16	99.5	OK
SW PIPE 7-11 to 7-10	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 7-10	SWMH 7-9	62.005	60.202	0.198	473.854	1.5	0.75	72.6	OK
SW PIPE 7-10 to 7-9	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 7-9	SWMH 7-8	61.397	59.562	0.195	713.959	2.3	0.72	109.6	OK
SW PIPE 7-9 to 7-8	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 7-8	SWMH 7-7	60.691	58.820	0.179	939.624	3.3	0.62	145.7	OK
SW PIPE 7-8 to 7-7	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 7-7	SWMH 7-6	58.762	56.871	0.290	939.618	1.9	0.64	145.6	OK
SW PIPE 27	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 7-6	SWMH 7-5	58.556	56.610	0.453	2432.511	1.9	0.87	375.0	OK
SW PIPE 28	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 7-5	SWMH 7-4	58.135	56.412	0.437	2667.817	2.1	0.96	412.5	OK
SW PIPE 449	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWSD-13	SWMH 32-3	114.500	113.645	0.055	39.425	0.8	0.07	6.8	OK
SW PIPE 30	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 11-2	SWMH 11-1	57.394	55.474	0.303	957.648	1.6	0.93	146.3	OK
SW PIPE 33	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 10-1	SWMH 7-6	59.830	57.863	0.155	77.074	1.2	0.06	12.6	OK
SW PIPE 9-1 to 8-3	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 9-1	SWMH 8-3	63.237	61.222	0.158	213.654	0.9	0.35	33.4	OK
SW PIPE 8-3 to 8-2	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 8-3	SWMH 8-2	62.796	60.736	0.226	714.524	1.9	0.89	109.1	OK
SW PIPE 8-2 to 8-1	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 8-2	SWMH 8-1	61.471	59.555	0.197	1049.639	2.7	0.53	160.3	OK
SW PIPE 8-1 to 7-7	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 8-1	SWMH 7-6	59.522	57.519	0.284	1262.393	2.4	0.69	192.5	OK
SW PIPE 38	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 14-7	SWMH 14-6	81.674	80.388	0.107	495.299	3.5	0.27	78.9	OK
SW PIPE 39	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 14-6	SWMH 14-5	73.437	72.055	0.151	949.544	4.2	0.49	149.3	OK
SW PIPE 40	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 14-5	SWMH 14-4	69.887	68.496	0.191	1279.074	4.2	0.71	199.3	OK
SW PIPE 41	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 14-3	SWMH 14-2	64.815	63.118	0.415	2229.924	2.3	0.98	343.0	Surcharged
SW PIPE 8-4 to 8-3	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 8-4	SWMH 8-3	63.597	61.659	0.097	81.986	1.0	0.08	12.9	OK
SW PIPE 45	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 11-4	SWMH 11-3	59.426	57.447	0.148	278.654	1.3	0.23	44.1	OK
SW PIPE 46	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 11-3	SWMH 11-2	58.628	56.350	0.227	642.056	1.7	0.89	98.2	OK
SW PIPE 47	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 12-1	SWMH 11-3	59.133	57.288	0.087	139.715	1.3	0.18	21.4	OK
SW PIPE 48	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 13-9	SWMH 13-8	63.287	61.519	0.125	287.773	2.0	0.23	45.4	OK
SW PIPE 49	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 13-8	SWMH 13-7	61.677	59.652	0.346	2949.840	3.5	0.89	455.0	OK
SW PIPE 50	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 13-7	SWMH 13-6	58.984	57.175	0.347	3157.350	3.7	0.85	487.0	OK
SW PIPE 51	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 13-6	SWMH 13-5	57.919	56.061	0.316	3396.008	4.4	0.75	524.9	OK
SW PIPE 53	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 16-9	SWMH 16-8	59.849	57.936	0.135	553.742	2.9	0.41	88.3	OK
SW PIPE 54	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 16-8	SWMH 16-7	55.910	53.916	0.160	789.029	3.2	0.53	124.8	OK
SW PIPE 55	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 16-7	SWMH 16-6	54.359	52.481	0.251	1136.397	2.4	0.64	178.0	OK
SW PIPE 56	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 16-5	SWMH 16-4	52.394	50.264	0.201	1613.160	4.2	0.51	251.9	OK
SW PIPE 57	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 16-4	SWMH 16-3	49.925	48.847	0.137	1628.747	6.9	0.26	254.7	OK
SW PIPE 58	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 17-1	SWMH 16-6	56.836	55.479	0.167	189.204	1.3	0.13	29.6	OK
SW PIPE 60	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 19-10	SWMH 19-9	81.475	80.107	0.081	252.347	2.7	0.16	41.1	OK
SW PIPE 61	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 19-9	SWMH 19-8	79.432	78.176	0.087	378.070	3.6	0.18	61.2	OK
SW PIPE 62	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 19-8	SWMH 19-7	75.974	74.723	0.121	719.213	4.3	0.34	114.6	OK
SW PIPE 63	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 19-7	SWMH 19-6	69.686	68.260	0.263	1063.827	3.6	0.49	168.3	OK
SW PIPE 64	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 19-6	SWMH 19-5	62.803	61.559	0.300	1221.058	2.8	0.98	190.2	Surcharged
SW PIPE 65	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 19-5	SWMH 19-4	61.962	60.621	0.300	1429.648	3.4	0.98	221.9	Surcharged
SW PIPE 66	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 19-4	SWMH 19-3	59.636	58.586	0.125	1450.036	8.1	0.33	225.4	OK
SW PIPE 69	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 21-14	SWMH 21-13	124.750	123.402	0.051	121.169	2.3	0.06	19.0	OK
SW PIPE 70	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 21-13	SWMH 21-12	120.116	118.336	0.133	1007.814	4.3	0.26	152.9	OK
SW PIPE 71	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 21-12	SWMH 21-11	115.906	113.589	0.156	1161.380	4.1	0.35	176.5	OK
SW PIPE 72	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 21-11	SWMH 21-10	112.049	110.617	0.174	1618.985	4.9	0.42	247.1	OK
SW PIPE 73	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 21-10	SWMH 21-9	106.133	104.624	0.197	1854.531	4.8	0.51	283.8	OK
SW PIPE 74	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 21-9	SWMH 21-8	102.876	101.587	0.202	2056.667	5.2	0.54	315.6	OK
SW PIPE 75	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 21-8	SWMH 21-7	97.956	96.622	0.218	2368.962	5.4	0.62	363.3	OK

SW PIPE 76	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 21-7	SWMH 21-6	89.434	88.082	0.233	2543.838	5.4	0.67	390.1	OK
SW PIPE 78	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 21-6	SWMH 21-5	85.622	83.919	0.234	2630.197	5.6	0.69	404.1	OK
SW PIPE 79	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 21-5	SWMH 21-4	77.292	75.356	0.248	2808.896	5.6	0.74	432.6	OK
SW PIPE 80	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 21-3	SWMH 21-2	67.287	65.244	0.355	4188.929	4.7	0.85	637.6	OK
SW PIPE 82	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 22-4	SWMH 22-3	121.909	120.482	0.083	134.252	1.3	0.16	20.9	OK
SW PIPE 83	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 22-3	SWMH 22-2	121.550	120.175	0.129	362.666	1.7	0.24	55.8	OK
SW PIPE 84	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 22-2	SWMH 22-1	120.970	119.643	0.176	608.529	1.9	0.36	94.2	OK
SW PIPE 85	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 25-9	SWMH 25-8	135.198	133.884	0.083	235.252	2.4	0.16	38.1	OK
SW PIPE 86	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 25-8	SWMH 25-7	133.694	132.363	0.118	496.737	3.1	0.3	79.1	OK
SW PIPE 87	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 25-7	SWMH 25-6	129.978	128.623	0.161	903.914	3.6	0.55	140.7	OK
SW PIPE 88	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 25-6	SWMH 25-5	124.572	122.844	0.278	1381.436	2.4	0.72	211.6	OK
SW PIPE 89	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 25-5	SWMH 25-4	121.731	120.520	0.365	1550.865	1.7	0.93	237.6	OK
SW PIPE 90	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 25-4	SWMH 25-3	121.523	120.228	0.337	1677.759	2.0	0.86	257.5	OK
SW PIPE 91	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 25-3	SWMH 25-2	121.186	119.678	0.414	1969.921	1.7	0.71	305.5	OK
SW PIPE 92	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 24-9	SWMH 24-8	120.828	118.754	0.245	2697.715	4.2	0.42	417.4	OK
SW PIPE 93	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 24-8	SWMH 24-7	117.593	116.411	0.156	2724.321	7.8	0.19	422.2	OK
SW PIPE 94	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 24-7	SWMH 24-6	109.397	106.308	0.205	2724.321	5.4	0.31	422.7	OK
SW PIPE 95	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 24-6	SWMH 24-5	100.778	99.520	0.210	2724.321	5.2	0.31	422.9	OK
SW PIPE 96	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 24-5	SWMH 24-4	98.517	96.957	0.205	2724.235	5.4	0.31	423.2	OK
SW PIPE 97	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 24-4	SWMH 24-3	90.915	88.752	0.242	2724.311	4.4	0.4	423.8	OK
SW PIPE 98	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 24-3	SWMH 24-2	88.200	86.631	0.136	2724.304	9.5	0.13	423.9	OK
SW PIPE 99	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 24-2	SW-OUT 24-1	70.188	68.401	0.504	2724.308	2.0	0.31	424.0	OK
SW PIPE 100	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 24-10	SWMH 24-9	121.321	120.024	0.122	289.613	1.7	0.33	45.5	OK
SW PIPE 101	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 32-12	SWMH 32-11	125.070	123.797	0.115	219.616	1.4	0.23	34.5	OK
SW PIPE 102	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 32-11	SWMH 32-10	123.632	122.396	0.173	621.497	2.2	0.62	94.6	OK
SW PIPE 103	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 32-10	SWMH 32-9	121.882	120.613	0.228	866.321	2.1	0.48	131.8	OK
SW PIPE 106	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 32-9	SWMH 32-8	120.909	119.617	0.393	3288.677	2.9	0.74	504.5	OK
SW PIPE 107	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 33-9	SWMH 33-8	143.217	141.946	0.084	244.910	2.4	0.17	39.6	OK
SW PIPE 108	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 33-8	SWMH 33-7	140.801	140.435	0.113	368.539	2.5	0.18	59.6	OK
SW PIPE 109	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 33-7	SWMH 33-6	137.369	136.170	0.162	457.400	1.8	0.53	72.2	OK
SW PIPE 110	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 33-6	SWMH 33-5	137.479	135.787	0.165	817.201	3.2	0.57	126.4	OK
SW PIPE 111	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 33-5	SWMH 33-4	132.629	131.334	0.182	1298.279	3.8	0.46	199.6	OK
SW PIPE 112	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 33-4	SWMH 33-3	127.697	126.332	0.323	1687.758	2.1	0.83	259.6	OK
SW PIPE 113	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 33-3	SWMH 33-2	126.694	125.435	0.278	2067.559	3.1	0.68	318.0	OK
SW PIPE 114	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 33-2	SWMH 33-1	124.492	123.358	0.246	2221.781	3.8	0.54	341.4	OK
SW PIPE 115	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 33-1	SWMH 32-9	123.074	121.904	0.246	2275.910	3.9	0.55	350.2	OK
SW PIPE 116	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 29-6	SWMH 29-5	141.838	140.498	0.093	328.094	2.9	0.15	53.0	OK
SW PIPE 117	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 29-5	SWMH 29-4	138.096	136.210	0.183	1151.577	4.2	0.56	185.2	OK
SW PIPE 118	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 29-4	SWMH 29-3	129.639	128.006	0.242	1181.207	3.1	0.92	189.6	OK
SW PIPE 123	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 27-6	SWMH 27-5	126.841	125.497	0.067	267.068	3.6	0.11	42.0	OK
SW PIPE 124	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 27-5	SWMH 27-4	116.879	115.403	0.100	389.645	2.9	0.24	60.7	OK
SW PIPE 125	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 27-3	SWMH 27-2	112.382	110.887	0.086	417.980	3.9	0.17	64.0	OK
SW PIPE 126	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 27-2	SW-OUT 27-1B	108.900	107.809	0.196	529.220	1.7	0.1	81.6	OK
SW PIPE 79 (1)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 21-4	SWMH 21-3	71.472	69.564	0.303	2936.208	4.0	0.65	452.6	OK
SW PIPE 128	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 26-9	SWMH 26-8	121.472	120.192	0.042	79.262	2.1	0.04	12.5	OK
SW PIPE 129	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 26-8	SWMH 26-7	118.998	117.664	0.064	190.369	2.7	0.1	29.6	OK
SW PIPE 130	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 26-7	SWMH 26-6	115.778	114.383	0.105	343.089	2.5	0.17	53.6	OK
SW PIPE 131	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 26-5	SWMH 26-4	111.989	109.799	0.095	506.643	4.1	0.2	78.5	OK
SW PIPE 132	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 26-4	SWMH 26-3	109.397	108.277	0.077	512.082	5.5	0.13	79.2	OK
SW PIPE 133	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 26-3	SWMH 26-2	106.050	104.877	0.075	512.082	5.7	0.13	78.9	OK
SW PIPE 134	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 26-2	SW-OUT 26-1B	98.599	97.312	0.192	512.082	1.7	0.11	78.7	OK
SW PIPE 137	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 14-4	SWMH 14-3	66.227	64.255	0.347	1688.325	2.2	0.65	260.8	OK
SW PIPE 138	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 14-2	SWMH 14-1	63.300	62.161	0.278	2229.921	3.6	0.23	343.0	OK
SW PIPE 139	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 14-1	SWMH 13-8	62.322	60.296	0.396	2229.909	2.3	0.99	344.0	OK
SW PIPE 140	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 15-1	SWMH 14-3	65.211	63.386	0.248	350.970	1.1	0.68	54.7	OK
SW PIPE 141	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-48	SWMH 14-4	66.408	64.751	0.050	52.814	1.3	0.1	8.1	OK
SW PIPE 142	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-49	SWMH 14-4	66.254	64.744	0.041	57.887	1.8	0.07	8.9	OK
SW PIPE 143	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-50	SWMH 14-5	69.853	69.000	0.000	0.000	0.0	0	0.0	OK
SW PIPE 144	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-51	SWMH 14-6	73.419	72.500	0.000	0.000	0.0	0	0.0	OK
SW PIPE 145	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-52	SWMH 14-6	73.386	72.454	0.052	69.863	1.5	0.11	10.8	OK
SW PIPE 146	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-53	SWMH 14-6	73.804	72.794	0.041	69.152	2.2	0.07	10.7	OK
SW PIPE 147	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-47-DBL	SWMH 14-3	64.747	63.606	0.056	95.232	1.6	0.07	14.7	OK
SW PIPE 148	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-46-DBL	SWMH 14-3	64.747	63.604	0.055	95.172	1.6	0.07	14.7	OK
SW PIPE 149	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-54	SWMH 19-8	75.987	75.931	0.029	45.323	2.3	0.03	7.0	Flood Risk
SW PIPE 150	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-55	SWMH 19-8	76.488	75.941	0.040	49.358	1.6	0.07	7.6	OK
SW PIPE 151	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-57	SWMH 19-7	69.902	69.040	0.039	36.125	1.2	0.06	5.6	OK
SW PIPE 152	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-56	SWMH 19-7	69.915	69.033	0.032	32.183	1.5	0.04	5.0	OK
SW PIPE 154	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-58-DBL	SWMH 19-5	61.792	61.003	0.099	137.177	1.0	0.22	21.1	OK
SW PIPE 155	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-45	SWMH 13-8	61.870	60.190	0.053	34.937	0.8	0.12	5.4	OK
SW PIPE 156	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-44	SWMH 13-8	61.869	60.135	0.065	36.902	0.6	0.19	5.6	OK
SW PIPE 157	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-43	SWMH 13-7	59.066	57.679	0.066	53.621	0.8	0.18	8.2	OK
SW PIPE 158	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-42	SWMH 13-7	59.021	57.648	0.078	55.022	0.7	0.24	8.5	OK
SW PIPE 161	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-35	SWMH 11-2	57.357	56.325	0.056	52.847	1.1	0.11	8.2	OK
SW PIPE 163	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-34-DBL	SWMH 11-2	57.220	56.067	0.090	108.584	0.9	0.19	16.6	OK
SW PIPE 164	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-36	SWMH 11-2	57.190	55.979	0.086	67.193	0.7	0.31	10.3	OK
SW PIPE 166	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-38-DBL	SWMH 11-1	56.765	55.351	0.092	85.151	0.7	0.19	13.1	OK
SW PIPE 167	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-39-DBL	SWMH 11-1	56.765	55.346	0.088	79.337	0.7	0.18	12.2	OK

SW PIPE 168	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-37	SWMH 11-3	58.797	57.197	0.046	42.287	1.1	0.09	6.5	OK
SW PIPE 171	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-17-DBL	SWMH 8-3	62.516	61.366	0.100	102.488	0.8	0.24	15.6	OK
SW PIPE 172	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-18	SWMH 8-3	62.497	61.308	0.080	53.609	0.6	0.3	8.2	OK
SW PIPE 173	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-25	SWMH 7-5	58.144	56.734	0.060	30.524	0.6	0.16	4.7	OK
SW PIPE 174	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-26	SWMH 7-5	58.140	56.774	0.043	35.321	1.0	0.07	5.4	OK
SW PIPE 175	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-20	SWMH 8-2	61.437	60.068	0.064	36.005	0.6	0.17	5.5	OK
SW PIPE 176	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-19	SWMH 8-2	61.436	60.078	0.072	46.640	0.6	0.22	7.2	OK
SW PIPE 177	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-23-DBL	SWMH 7-6	58.250	57.013	0.084	76.655	0.7	0.17	11.6	OK
SW PIPE 178	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-24-DBL	SWMH 7-6	58.303	57.068	0.084	76.811	0.7	0.17	11.7	OK
SW PIPE 179	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-60	SWMH 7-9	61.368	60.008	0.081	57.938	0.7	0.26	8.9	OK
SW PIPE 180	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-59	SWMH 7-9	61.403	60.021	0.069	42.956	0.6	0.21	6.6	OK
SW PIPE 181	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-12	SWMH 3-4	64.667	63.040	0.060	49.463	0.9	0.13	7.6	OK
SW PIPE 182	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-10	SWMH 3-3	63.675	62.500	0.025	16.505	1.1	0.03	2.5	OK
SW PIPE 183	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-08	SWMH 3-2	61.631	60.574	0.069	43.886	0.6	0.2	6.7	OK
SW PIPE 184	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWSD-02	SWMH 6-2	58.100	56.624	0.033	14.147	0.6	0.03	2.4	OK
Pipe (13)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-242	SWMH 13-8	61.812	61.036	0.189	39.357	0.3	0.03	6.1	OK
SW PIPE 187	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWSD-07	SWMH 16-4	49.750	48.874	0.063	15.588	0.4	0.03	2.7	OK
SW PIPE 7	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 01-2 (SD-IN)	SW-OUT-01	56.784	54.264	0.588	17661.887	2.6	0.19	831.1	OK
SW PIPE 186 (1)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 23-2 (SD-IN)	SW-OUT 23-1	66.448	63.683	0.267	7480.112	3.2	0.16	427.1	OK
SW PIPE 186	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SW-IN 23-3	SWMH 23-2 (SD-IN)	64.648	64.768	0.231	7480.116	5.2	0.39	427.1	Flood
SW PIPE 68	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 20-2 (SD-IN)	SW-OUT 20-1	42.169	40.641	0.437	11741.053	3.8	0.36	837.4	OK
SW PIPE 67	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SW-IN 20-3	SWMH 20-2 (SD-IN)	41.370	41.366	0.289	11741.057	6.2	0.27	837.3	Flood Risk
SW PIPE 203	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 7-4	SWMH 7-3	57.691	55.739	0.252	2667.817	4.0	0.43	412.8	OK
SW PIPE 204	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 7-3	SWMH 7-2	55.736	54.027	0.458	2692.082	2.1	0.14	417.1	OK
SW PIPE 205	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWSD-05	SWMH 7-3	55.700	54.490	0.000	0.000	0.0	0	0.0	OK
SW PIPE 206	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 11-1	SWMH 13-5	56.812	54.959	0.331	1206.340	1.5	0.92	184.9	OK
SW PIPE 208	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-01	SWMH 2-5	62.071	61.199	0.097	139.496	1.4	0.37	22.8	OK
SW PIPE 209	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-02	SWMH 2-5	64.227	63.131	0.031	39.023	1.8	0.04	6.0	OK
SW PIPE 210	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 13-5	SWMH 13-4	57.282	54.556	0.373	4782.051	4.5	0.65	737.0	OK
SW PIPE 211	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 13-4	SWMH 13-3	54.167	53.016	0.428	4782.052	3.4	0.76	737.3	OK
SW PIPE 212	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 13-3	SWMH 13-2	53.385	52.028	0.600	4840.543	2.6	0.13	747.5	OK
SW PIPE 214	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWSD-03	SWMH 13-3	53.700	52.833	0.042	58.490	1.7	0.04	10.2	OK
SW PIPE 215	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-16	SWMH 8-3	62.812	61.469	0.069	47.153	0.7	0.19	7.2	OK
SW PIPE 216	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 16-6	SWMH 16-5	52.403	51.212	0.318	1540.852	2.4	0.97	241.1	OK
SW PIPE 217	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 16-3	SWMH 16-2	46.783	45.606	0.375	1628.745	2.3	0.36	254.7	OK
SW PIPE 218	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-27	SWMH 16-8	55.777	54.710	0.043	65.603	1.9	0.08	10.1	OK
SW PIPE 219	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-28	SWMH 16-8	56.111	54.709	0.042	59.411	1.8	0.07	9.2	OK
SW PIPE 220	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-31	SWMH 16-6	52.429	51.437	0.124	52.289	1.3	0.06	8.1	OK
SW PIPE 221	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-30	SWMH 16-6	52.400	51.463	0.060	59.855	1.1	0.15	9.2	OK
SW PIPE 222	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-32	SWMH 16-6	52.541	51.552	0.051	62.207	1.4	0.11	9.6	OK
SW PIPE 223	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-33-DBL	SWMH 16-5	52.248	50.757	0.054	72.308	1.3	0.06	11.2	OK
SW PIPE 225	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-09	SWMH 3-2	61.796	60.910	0.049	63.218	1.5	0.1	9.8	OK
SW PIPE 227	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWSD-04	SWMH 19-4	59.788	58.820	0.052	20.392	0.7	0.02	3.5	OK
SW PIPE 228	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-11	SWMH 3-4	64.668	62.705	0.225	49.879	0.2	0.18	7.6	OK
SW PIPE 229	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWSD-01	SW-OUT 2-1	56.000	55.983	0.300	0.827	0.1	0.09	5.0	Flood Risk
SW PIPE 231	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-03	SWMH 2-4	60.103	59.239	0.038	29.489	1.0	0.06	4.5	OK
SW PIPE 232	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-04	SWMH 2-4	60.103	59.259	0.057	78.596	1.6	0.13	12.1	OK
SW PIPE 233	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-06-DBL	SWMH 2-2	57.996	56.881	0.085	76.883	0.7	0.16	11.7	OK
SW PIPE 234	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-05-DBL	SWMH 2-2	57.995	56.889	0.094	96.224	0.8	0.21	14.6	OK
SW PIPE 237	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-13	SWMH 6-5	60.535	59.377	0.053	25.343	0.5	0.12	3.9	OK
SW PIPE 238	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-14	SWMH 6-5	60.563	59.404	0.038	25.823	0.9	0.06	4.0	OK
SW PIPE 239	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-15-DBL	SWMH 6-3	59.708	58.469	0.103	107.565	0.8	0.24	16.5	OK
SW PIPE 242	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-21	SWMH 8-1	59.743	58.498	0.039	41.300	1.4	0.06	6.4	OK
SW PIPE 243	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-22	SWMH 8-1	59.504	58.200	0.071	44.993	0.6	0.21	6.9	OK
SW PIPE 244	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-29	SWMH 16-7	54.398	53.782	0.032	24.386	1.1	0.04	3.7	OK
SW PIPE 245	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-41	SWMH 13-5	57.074	55.753	0.057	29.567	0.6	0.14	4.5	OK
SW PIPE 246	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-40	SWMH 13-5	57.133	55.830	0.063	35.045	0.6	0.17	5.4	OK
SW PIPE 249	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 6-4	SWMH 6-3	59.897	58.232	0.222	530.219	1.5	0.84	81.6	OK
SW PIPE 250	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 6-3	SWMH 6-2	59.905	57.888	0.133	637.783	3.2	0.38	97.5	OK
SW PIPE 253	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SW-IN 01-3	SWMH 01-2 (SD-IN)	55.069	55.124	0.600	17661.908	2.9	1.11	831.2	Flood
SW PIPE 91-3	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 91-3	SWMH 91-2	58.196	55.354	0.151	352.651	1.4	0.33	57.2	OK
SW PIPE 257	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	Simple Junction	Simple Junction (1)	35.620	34.950	0.000	0.000	0.0	0	0.0	OK
SW PIPE 258	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	Simple Junction (2)	Simple Junction (3)	42.716	41.989	0.000	0.000	0.0	0	0.0	OK
SW PIPE 259	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	Simple Junction (4)	Simple Junction (5)	41.714	41.400	0.000	0.000	0.0	0	0.0	OK
SW PIPE 260	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	Simple Junction (6)	Simple Junction (7)	67.441	66.970	0.000	0.000	0.0	0	0.0	OK
SW PIPE 261	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	Simple Junction (8)	Simple Junction (9)	60.611	59.450	0.000	0.000	0.0	0	0.0	OK
SW PIPE 269	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-07	SWMH 3-1	58.625	57.677	0.031	12.974	0.6	0.04	2.0	OK
SW PIPE 271	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-06-B	SUMP-06-DBL	57.995	56.881	0.016	0.000	0.0	0	0.0	OK
SW PIPE 272	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-15-B	SUMP-15-DBL	59.709	58.469	0.126	0.000	0.0	0	0.1	OK
SW PIPE 273	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-17-B	SUMP-17-DBL	62.510	61.366	0.041	0.000	0.1	0	0.1	OK
SW PIPE 274	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-24-B	SUMP-24-DBL	58.303	57.236	0.000	0.000	0.0	0	0.0	OK
Pipe (2)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-23-B	SUMP-23-DBL	58.249	57.013	0.050	0.000	0.0	0	0.0	OK
SW PIPE 276	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-38-B	SUMP-38-DBL	56.765	55.386	0.000	0.000	0.0	0	0.0	OK
SW PIPE 277	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-39-B	SUMP-39-DBL	56.765	55.386	0.000	0.000	0.0	0	0.0	OK

SW PIPE 278	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-33-B	SUMP-33-DBL	52.248	50.869	0.000	0.000	0.0	0	0.0	OK
SW PIPE 279	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-58-B	SUMP-58-DBL	61.791	61.011	0.000	0.000	0.0	0	0.0	OK
SW PIPE 280	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-46-B	SUMP-46-DBL	64.747	63.604	0.240	0.000	0.0	0	0.0	OK
SW PIPE 281	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-47-B	SUMP-47-DBL	64.747	63.606	0.242	0.000	0.0	0	0.1	OK
SW PIPE 282	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-34-B	SUMP-34-DBL	57.216	56.070	0.001	0.000	0.0	0	0.0	OK
SW PIPE 283	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-79-DBL	SWMH 22-1	120.296	119.063	0.060	99.743	1.5	0.08	15.4	OK
SW PIPE 284	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-78	SWMH 22-1	120.005	119.041	0.039	50.114	1.7	0.06	7.7	OK
SW PIPE 285	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-77	SWMH 21-13	120.092	119.067	0.064	64.421	1.1	0.16	9.9	OK
SW PIPE 286	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 22-1	SWMH 21-13	120.053	118.745	0.228	758.378	2.0	0.84	115.2	OK
SW PIPE 287	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-79-B	SUMP-79-DBL	120.247	119.412	0.000	0.000	0.0	0	0.0	OK
SW PIPE 288	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 22-5	SWMH 22-4	122.647	121.287	0.056	80.276	1.4	0.08	12.6	OK
SW PIPE 289	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-81	SWMH 22-3	121.503	120.720	0.068	41.192	0.6	0.19	6.3	OK
SW PIPE 290	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-80	SWMH 22-3	121.561	120.767	0.057	57.578	1.1	0.13	8.9	OK
SW PIPE 291	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 35-6	SWMH 35-5	125.155	123.912	0.111	282.968	1.8	0.29	43.8	OK
SW PIPE 292	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 35-5	SWMH 35-4	123.862	122.326	0.153	676.655	2.9	0.37	104.7	OK
SW PIPE 293	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-82	SWMH 35-5	123.813	123.075	0.091	72.443	0.7	0.35	11.0	OK
SW PIPE 294	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-83	SWMH 35-5	123.766	123.029	0.093	73.496	0.7	0.36	11.3	OK
SW PIPE 295	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-85	SWMH 35-4	116.936	116.195	0.088	65.987	0.7	0.32	10.2	OK
SW PIPE 296	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-84	SWMH 35-4	117.932	117.140	0.043	51.821	1.5	0.08	8.0	OK
SW PIPE 297	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 35-4	SWMH 35-3	117.107	115.930	0.239	794.450	1.6	0.69	120.5	OK
SW PIPE 298	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 35-3	SWMH 35-2	116.951	115.507	0.103	794.450	4.9	0.15	120.6	OK
SW PIPE 299	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 35-2	SW-OUT 35-1B (SD)	114.500	112.887	0.375	807.344	1.6	0.12	122.8	OK
Lagged Flow (90)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (84)	Simple Junction (85)		80.026	0.016	136.547	0.0		21.4	
Pipe (1)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-62	SWMH 21-3	67.149	66.455	0.225	113.342	0.5	0.13	18.6	OK
Pipe	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-61	SWMH 21-3	67.114	66.389	0.225	71.574	0.3	0.04	11.1	OK
SW PIPE 307	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-63	SWMH 21-4	71.423	70.338	0.037	41.927	1.5	0.06	6.5	OK
SW PIPE 308	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-64	SWMH 21-4	71.410	70.374	0.072	84.836	1.3	0.21	13.8	OK
SW PIPE 309	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-65	SWMH 21-5	77.390	76.348	0.047	65.402	1.7	0.09	10.1	OK
SW PIPE 310	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-66	SWMH 21-5	77.390	76.474	0.071	113.666	1.7	0.2	18.8	OK
SW PIPE 311	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-67	SWMH 21-6	85.640	84.594	0.042	40.070	1.2	0.07	6.2	OK
SW PIPE 312	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-68	SWMH 21-6	85.640	84.601	0.050	46.289	1.2	0.1	7.6	OK
SW PIPE 313	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-69	SWMH 21-7	89.765	88.696	0.045	63.902	1.7	0.08	9.9	OK
SW PIPE 314	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-70	SWMH 21-7	89.765	88.704	0.053	83.829	1.9	0.12	13.4	OK
SW PIPE 315	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-71	SWMH 21-8	98.158	97.145	0.043	69.668	2.0	0.08	10.8	OK
SW PIPE 316	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-72	SWMH 21-8	98.651	97.443	0.042	57.296	1.7	0.07	8.8	OK
SW PIPE 317	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-73	SWMH 21-10	106.297	105.236	0.035	46.160	1.8	0.05	7.1	OK
SW PIPE 318	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-74	SWMH 21-10	106.517	105.439	0.038	43.571	1.5	0.06	6.7	OK
SW PIPE 319	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-75	SWMH 21-11	112.040	110.852	0.050	65.591	1.6	0.1	10.1	OK
SW PIPE 320	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-76	SWMH 21-11	112.040	110.864	0.062	77.162	1.3	0.15	11.9	OK
SW PIPE 321	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-89	SWMH 32-11	123.570	122.811	0.090	69.827	0.7	0.33	10.8	OK
SW PIPE 322	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-88	SWMH 32-11	123.697	122.934	0.086	65.351	0.7	0.31	10.0	OK
SW PIPE 323	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-91	SWMH 32-10	121.820	121.054	0.084	61.190	0.7	0.29	9.4	OK
SW PIPE 324	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-90	SWMH 32-10	121.844	121.080	0.086	64.793	0.7	0.31	9.9	OK
SW PIPE 325	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-93-DBL	SWMH 32-9	120.971	119.966	0.065	88.442	1.2	0.1	13.5	OK
SW PIPE 326	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-93-B	SUMP-93-DBL	120.967	120.137	0.000	0.000	0.0	0	0.0	OK
SW PIPE 327	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-92-DBL	SWMH 32-9	120.906	119.864	0.063	58.025	0.8	0.09	8.9	OK
SW PIPE 328	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-92-B	SUMP-92-DBL	120.908	120.079	0.000	0.000	0.0	0	0.0	OK
SW PIPE 329	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-95	SWMH 32-8	120.534	119.560	0.058	55.172	1.1	0.13	8.5	OK
SW PIPE 330	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-94	SWMH 32-8	120.546	119.559	0.055	47.156	1.0	0.11	7.3	OK
SW PIPE 331	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 32-8	SWMH 32-7	120.559	119.195	0.396	3523.885	3.1	0.87	541.6	OK
SW PIPE 332	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 32-7	SWMH 32-6	118.635	117.907	0.303	4194.324	5.0	0.53	643.8	OK
SW PIPE 333	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-97	SWMH 33-2	124.588	123.547	0.045	51.800	1.4	0.08	8.0	OK
SW PIPE 334	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-96	SWMH 33-2	124.736	123.799	0.048	47.105	1.2	0.09	7.3	OK
SW PIPE 335	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-98	SWMH 33-3	126.656	125.656	0.053	47.105	1.0	0.11	7.3	OK
SW PIPE 336	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-99	SWMH 33-3	126.696	125.652	0.050	42.401	1.0	0.1	6.5	OK
SW PIPE 337	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-101	SWMH 33-4	127.669	126.677	0.072	56.498	0.8	0.19	8.7	OK
SW PIPE 338	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-100	SWMH 33-4	127.831	126.804	0.053	56.549	1.2	0.11	8.7	OK
SW PIPE 339	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-103	SWMH 33-5	132.694	131.656	0.052	67.610	1.5	0.1	10.4	OK
SW PIPE 340	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-102	SWMH 33-5	132.878	131.850	0.049	70.040	1.7	0.1	10.8	OK
SW PIPE 341	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-104	SWMH 33-7	137.441	137.278	0.054	44.144	1.8	0.03	6.8	Flood Risk
SW PIPE 342	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-105	SWMH 33-7	138.000	136.925	0.023	44.720	3.2	0.02	6.9	OK
SW PIPE 343	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 32-6	SWMH 32-5	118.092	116.847	0.307	4269.990	5.1	0.46	655.2	OK
SW PIPE 344	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 32-4	SWMH 32-3	115.000	114.420	0.525	4269.997	3.3	0.97	656.3	Surcharged
SW PIPE 345	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 32-3	SWMH 32-2	114.640	113.109	0.244	4309.422	6.7	0.4	663.4	OK
SW PIPE 346	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 32-2	SW-OUT 32-1B (SD)	110.559	109.435	0.525	4309.410	3.1	0.19	663.4	OK
SW PIPE 348	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 30-1	SWMH 29-3	128.780	126.991	0.232	287.093	0.8	0.34	47.1	OK
SW PIPE 349	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-106	SWMH 29-5	138.004	137.325	0.022	52.778	4.0	0.02	8.2	OK
SW PIPE 350	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-107	SWMH 29-5	138.419	137.332	0.032	51.074	2.3	0.04	7.9	OK
SW PIPE 351	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 29-7	SWMH 29-6	142.957	141.576	0.075	158.621	1.9	0.13	25.6	OK
SW PIPE 352	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 29-3	SWMH 29-2	128.118	126.745	0.233	1616.724	4.4	0.9	257.3	OK
SW PIPE 353	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-108-DBL	SWMH 29-3	128.308	127.348	0.102	148.729	1.1	0.23	22.8	OK
SW PIPE 354	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-108-B	SUMP-108-DBL	128.313	127.347	0.244	0.000	0.0	0	0.1	OK
SW PIPE 355	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-109-DBL	SWMH 25-3	121.102	120.412	0.157	223.062	1.0	0.53	36.9	OK
SW PIPE 356	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-109-B	SUMP-109-DBL	121.103	120.412	0.167	0.000	0.0	0	0.1	OK
SW PIPE 357	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 25-1	SWMH 24-9	120.559	119.086	0.412	2408.101	2.0	0.87	372.8	OK
SW PIPE 358	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-113-DBL	SWMH 25-1	120.504	119.726	0.073	55.475	0.6	0.12	8.5	OK

SW PIPE 359	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-112-DBL	SWMH 25-1	120.504	119.733	0.080	68.627	0.7	0.15	10.5	OK
SW PIPE 360	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-113-B	SUMP-113-DBL	120.503	119.726	0.080	0.000	0.0	0	0.1	OK
SW PIPE 361	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-112-B	SUMP-112-DBL	120.503	119.734	0.068	0.000	0.0	0	0.1	OK
SW PIPE 362	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 25-2	SWMH 25-1	120.825	119.484	0.438	2251.456	1.8	0.97	349.1	OK
SW PIPE 363	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-111	SWMH 25-2	120.783	120.027	0.092	71.771	0.7	0.33	11.1	OK
SW PIPE 364	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-110	SWMH 25-2	120.782	119.990	0.060	32.945	0.6	0.16	5.1	OK
SW PIPE 365	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-116	SWMH 25-6	124.597	123.825	0.079	54.482	0.7	0.26	8.4	OK
SW PIPE 366	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-117	SWMH 25-6	124.568	123.797	0.080	55.520	0.7	0.26	8.5	OK
SW PIPE 367	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-114	SWMH 25-5	121.750	120.979	0.080	56.498	0.7	0.27	8.7	OK
SW PIPE 368	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-115	SWMH 25-5	121.734	120.964	0.081	56.498	0.7	0.27	8.7	OK
SW PIPE 369	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-118	SWMH 25-7	129.972	129.182	0.062	34.763	0.6	0.16	5.3	OK
SW PIPE 370	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-119	SWMH 25-7	130.025	129.224	0.051	36.089	0.8	0.1	5.6	OK
SW PIPE 371	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-121	SWMH 25-8	133.953	132.933	0.033	35.309	1.5	0.04	5.4	OK
SW PIPE 373	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-120	SWMH 25-8	133.959	132.931	0.030	22.100	1.1	0.04	3.4	OK
SW PIPE 374	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-133	SWMH 27-4	115.141	114.259	0.040	28.337	0.9	0.07	4.4	OK
SW PIPE 375	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-134	SWMH 27-5	116.956	116.148	0.075	77.660	1.0	0.22	12.0	OK
SW PIPE 376	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-122-B	SUMP-122-DBL	132.178	131.323	0.000	0.000	0.0	0	0.0	OK
SW PIPE 377	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-122-DBL	SWMH 28-3	132.182	131.203	0.099	134.171	1.0	0.21	20.7	OK
SW PIPE 378	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 28-3	SWMH 28-2	132.134	130.814	0.061	336.394	5.1	0.09	52.7	OK
SW PIPE 379	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 28-2	SW-OUT 28-1B	128.855	127.757	0.300	344.497	2.2	0.08	53.9	OK
SW PIPE 380	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SW-OUT 28-1B	SW-OUT 28-1A	120.450	119.987	0.150	338.231	2.3	2.71	41.3	Surcharged
SW PIPE 381	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SW-IN 34-4	SW-IN 34-3 (SD)	109.500	108.916	0.300	1202.725	2.2	0.91	153.2	Surcharged
SW PIPE 382	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SW-IN 34-3 (SD)	SWMH 34-2	108.978	108.627	0.207	1202.724	2.9	0.71	152.9	OK
SW PIPE 383	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 34-2	SW-OUT 34-1B (SD)	109.050	108.043	0.300	1202.724	2.2	0.22	152.9	OK
SW PIPE 299 (1)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SW-OUT 35-1B (SD)	SW-OUT 35-1A	110.900	110.529	0.150	721.866	2.6	2.1	45.1	Surcharged
SW PIPE 384	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 36-3	SWMH 36-2	112.629	111.287	0.087	314.197	2.9	0.17	49.0	OK
SW PIPE 385	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 36-2	SW-OUT 36-1	110.085	109.436	0.136	321.682	1.8	0.36	49.5	OK
SW PIPE 386	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-86-DBL	SWMH 36-3	112.268	111.424	0.072	76.025	0.9	0.12	11.7	OK
SW PIPE 387	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-87-DBL	SWMH 36-3	112.268	111.315	0.134	64.968	0.3	0.1	10.0	OK
SW PIPE 388	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-87-B	SUMP-87-DBL	112.268	111.433	0.000	0.000	0.0	0	0.0	OK
SW PIPE 389	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-86-B	SUMP-86-DBL	112.268	111.433	0.000	0.000	0.0	0	0.0	OK
SW PIPE 390	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWSD-09	SWMH 35-2	114.000	112.972	0.032	12.898	0.6	0.02	2.2	OK
SW PIPE 393	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 38-6	SWMH 38-5	100.971	99.545	0.051	108.321	2.2	0.05	17.2	OK
SW PIPE 394	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 38-5	SWMH 38-4	96.260	94.831	0.095	374.167	3.1	0.16	58.4	OK
SW PIPE 395	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 38-4	SWMH 38-3	84.310	82.748	0.144	491.651	2.2	0.44	74.5	OK
SW PIPE 396	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 38-3	SWMH 38-2	83.498	81.834	0.081	544.392	5.4	0.15	82.3	OK
SW PIPE 397	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 38-2	SW-OUT 38-1B(SD)	79.500	77.833	0.217	555.888	1.5	0.15	84.2	OK
SW PIPE 398	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-131-B	SUMP-131-DBL	83.220	82.293	0.000	0.000	0.0	0	0.0	OK
SW PIPE 399	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-131-DBL	SWMH 38-3	83.218	82.202	0.051	52.742	1.0	0.06	8.1	OK
SW PIPE 401	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-127	SWMH 38-5	96.427	95.450	0.048	46.898	1.2	0.09	7.2	OK
SW PIPE 402	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-128	SWMH 38-5	96.427	95.441	0.038	36.809	1.3	0.06	5.7	OK
SW PIPE 403	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 37-7	SWMH 37-6	110.789	109.479	0.079	284.364	3.1	0.15	45.3	OK
SW PIPE 404	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 37-5	SWMH 37-4	104.965	103.197	0.191	942.881	3.1	0.69	147.0	OK
SW PIPE 405	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 37-4	SWMH 37-3	102.875	101.657	0.291	1099.037	1.9	0.89	170.3	OK
SW PIPE 406	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 37-3	SWMH 37-2	102.729	101.119	0.112	1099.037	6.1	0.18	170.3	OK
SW PIPE 407	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-124	SWMH 37-7	110.793	109.856	0.052	49.769	1.1	0.1	7.7	OK
SW PIPE 408	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-123	SWMH 37-7	110.793	109.849	0.047	45.401	1.2	0.09	7.0	OK
SW PIPE 409	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-126	SWMH 37-4	103.512	102.545	0.045	60.008	1.6	0.08	9.2	OK
SW PIPE 410	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-125	SWMH 37-4	103.511	102.547	0.046	58.736	1.5	0.09	9.0	OK
SW PIPE 411	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 39-4	SWMH 39-3	111.011	109.759	0.074	136.553	2.0	0.15	21.6	OK
SW PIPE 412	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 39-3	SWMH 39-2	106.864	105.440	0.130	136.549	0.9	0.66	21.0	OK
SW PIPE 414	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 39-2	SW-OUT 39-1B (SD)	106.399	105.133	0.082	136.548	1.4	0.03	21.0	OK
SW PIPE 415	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 37-2	SW-OUT 37-1B (SD)	99.652	98.192	0.314	1113.877	1.8	0.14	172.9	OK
SW PIPE 417	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-130	SWMH 38-4	84.366	83.060	0.056	60.299	1.2	0.12	9.3	OK
SW PIPE 418	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-129	SWMH 38-4	84.364	83.072	0.070	57.188	0.8	0.2	8.8	OK
SW PIPE 419	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWSD-11	SWMH 37-2	99.500	98.624	0.034	14.840	0.6	0.03	2.6	OK
Lagged Flow (89)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (70)	Simple Junction (84)		84.026	0.168	136.547	0.0		21.5	
SW PIPE 422	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWSD-15	SWMH 24-8	118.321	117.420	0.029	26.606	1.3	0.02	4.6	OK
Lagged Flow (99)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (89)	Simple Junction (71)		63.073	0.361	692.433	0.0		99.6	
SW PIPE 424	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWSD-17	SWMH 29-2	125.727	124.894	0.029	32.354	1.6	0.02	5.6	OK
Lagged Flow (98)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (82)	Simple Junction (89)		64.765	0.029	555.884	0.0		85.2	
SW PIPE 426	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWSD-16	SWMH 28-2	129.719	128.804	0.022	8.111	0.9	0	1.4	OK
SW PIPE 428	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWSD-08	SWMH 21-2	64.500	63.744	0.074	48.329	0.6	0.14	8.4	OK
SW PIPE 429	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 21-2	SW-OUT 21-1B (SD)	65.166	63.623	0.525	4237.255	3.0	0.24	646.0	OK
Lagged Flow (91)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (85)	Simple Junction (86)		78.526	0.169	136.547	0.0		21.1	
SW PIPE 431	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWSD-10	SWMH 36-2	110.500	109.479	0.044	7.483	0.3	0.02	1.3	OK
Lagged Flow (88)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (83)	Simple Junction (70)		85.026	0.016	136.547	0.0		21.5	
SW PIPE 434	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SW-IN 31-2	SW-IN 31-1 (SD)	138.429	138.275	0.117	356.888	2.4	0.29	62.0	Flood Risk
SW PIPE 435	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SW-IN 31-1 (SD)	SWMH 29-5	138.398	137.792	0.115	356.934	2.5	0.3	61.8	OK
SW PIPE 436	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 37-6	SWMH 37-5	106.774	105.206	0.104	385.076	2.8	0.25	60.8	OK
SW PIPE 437	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-132	SWMH 37-5	105.264	104.346	0.045	59.768	1.6	0.08	9.2	OK

SW PIPE 438	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 40-2	SWMH 40-1	109.195	107.897	0.095	174.581	1.5	0.21	28.5	OK
SW PIPE 439	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 40-1	SWMH 37-5	108.837	107.472	0.110	381.217	2.6	0.25	61.4	OK
SW PIPE 440	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 37-8 (MINI)	SWMH 37-7	112.649	111.622	0.037	60.212	2.0	0.03	9.9	OK
SW PIPE 441	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 28-5	SWMH 28-4	135.402	134.078	0.077	202.223	2.2	0.14	32.4	OK
SW PIPE 442	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 28-4	SWMH 28-3	132.885	131.584	0.074	202.222	2.4	0.15	32.2	OK
SW PIPE 443	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 32-5	SWMH 32-4	116.265	115.328	0.489	4269.975	4.2	0.43	655.6	OK
SW PIPE 445	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWSD-12	SWMH 38-2	79.000	78.116	0.026	11.495	0.7	0.01	2.0	OK
SW PIPE 446	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 41-3	SWMH 41-2	122.265	121.071	0.121	336.229	1.9	0.34	51.3	OK
SW PIPE 447	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 41-2	SWMH 41-1	120.204	119.000	0.300	503.038	1.1	0.5	76.4	OK
SW PIPE 448	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 41-1	SWMH 32-7	118.951	118.086	0.300	503.061	1.1	0.5	76.5	Surcharged
SW PIPE SD-18 to 26-	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWSD-18	SWMH 26-4	109.000	108.665	0.000	0.000	0.0	0	0.0	OK
No Delay (20)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	No Delay	EX-SWCP-02-OUT	EX-SW-IN-03		45.859	0.071	229.209	0.0		33.0	
SW PIPE 27-4 TO 27-	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 27-4	SWMH 27-3	115.020	113.297	0.095	417.980	3.3	0.21	64.4	OK
SW PIPE SD-19 to 27-	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWSD-19	SWMH 27-3	112.700	111.640	0.000	0.000	0.0	0	0.0	OK
SW PIPE SUMP-136	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-136	SWMH 26-8	119.735	118.544	0.043	62.405	1.8	0.08	9.6	OK
SW PIPE 26-6 to 26-5	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 26-6	SWMH 26-5	112.051	109.926	0.163	435.631	1.7	0.5	67.7	OK
SW PIPE SUMP-135B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-135-B	SUMP-135-DBL	111.845	111.025	0.000	0.000	0.0	0	0.0	OK
SW PIPE SUMP-135	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-135-DBL	SWMH 26-5	111.794	110.636	0.034	71.075	2.4	0.03	11.0	OK
SW PIPE SUMP-137	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-137	SWMH 25-9	135.112	134.036	0.030	10.976	0.5	0.04	1.7	OK
SW PIPE 29-2 to 29-	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 29-2	SW-OUT 29-1B	124.757	123.724	0.300	1649.079	3.7	0.38	262.9	OK
SW PIPE 462	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-05-B	SUMP-05-DBL	57.995	57.340	0.098	96.224	0.7	0.22	14.8	OK
SW PIPE 44-8	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 44-8	SWMH 44-7	123.476	122.096	0.082	244.241	2.4	0.14	38.2	OK
SW PIPE 44-7	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 44-7	SWMH 44-6	119.986	118.588	0.135	701.968	3.5	0.41	107.6	OK
SW PIPE 44-6	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 44-6	SWMH 44-5	116.684	115.315	0.208	930.457	2.7	0.56	142.7	OK
SW PIPE 44-5	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 44-5	SWMH 44-4	113.223	111.807	0.284	1169.709	2.0	0.83	178.1	OK
SW PIPE 44-4	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 44-4	SWMH 44-3	113.271	111.528	0.352	2144.050	4.5	0.54	325.5	OK
SW PIPE 46-2	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 46-2	SWMH 46-1	118.777	117.566	0.061	186.410	2.8	0.09	29.3	OK
SW PIPE 45-1	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 45-1	SWMH 44-7	120.341	119.117	0.115	183.491	1.1	0.3	28.2	OK
SW PIPE SUMP-150-	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-150-B	SUMP-150-DBL	113.057	112.307	0.013	0.000	0.0	0	0.0	OK
SW PIPE SUMP-150	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-150-DBL	SWMH 44-4	113.057	112.308	0.056	100.145	1.7	0.07	15.4	OK
SW PIPE SUMP-151-	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-151-B	SUMP-151-DBL	113.058	112.317	0.022	0.000	0.1	0	0.0	OK
SW PIPE SUMP-151	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-151-DBL	SWMH 44-4	113.057	112.317	0.066	91.940	1.2	0.1	14.0	OK
SW PIPE SUMP-152	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-152	SWMH 44-5	113.349	112.531	0.031	25.667	1.2	0.04	3.9	OK
SW PIPE 47-5	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 47-5	SWMH 47-4	116.973	115.669	0.068	95.672	1.2	0.11	15.0	OK
SW PIPE 47-4	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 47-4	SWMH 47-3	116.507	115.170	0.117	272.635	1.7	0.31	42.5	OK
SW PIPE 47-3	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 47-3	SWMH 47-2	115.835	114.558	0.105	378.402	2.7	0.25	58.9	OK
SW PIPE 47-2	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 47-2	SWMH 47-1	114.913	113.578	0.133	500.707	2.6	0.36	78.1	OK
SW PIPE 47-1	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 47-1	SWMH 44-4	113.446	112.089	0.233	782.303	1.7	0.68	119.3	OK
SW PIPE SUMP-155	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-155	SWMH 47-4	116.523	115.769	0.018	11.858	1.2	0.01	1.8	OK
SW PIPE SUMP-153	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-153	SWMH 47-1	113.484	112.108	0.099	56.657	0.5	0.29	8.6	OK
SW PIPE SUMP-154	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-154	SWMH 47-1	113.513	112.813	0.052	72.098	1.6	0.11	11.1	OK
SW PIPE SUMP-148	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-148	SWMH 44-6	117.098	116.264	0.029	27.341	1.4	0.04	4.2	OK
SW PIPE SUMP-149	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-149	SWMH 44-6	116.863	116.033	0.032	35.498	1.6	0.04	5.5	OK
SW PIPE 48-7	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 48-7	SWMH 48-6	113.952	112.554	0.074	129.109	1.6	0.07	20.5	OK
SW PIPE 48-6	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 48-6	SWMH 48-5	111.361	110.029	0.166	370.007	1.5	0.39	59.0	OK
SW PIPE 48-4	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 48-4	SWMH 48-3	109.229	107.804	0.238	966.345	2.5	0.9	150.8	OK
SW PIPE SUMP-232-	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-232-B	SUMP-232-DBL	108.944	108.153	0.048	0.000	0.0	0	0.0	OK
SW PIPE SUMP-232	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-232-DBL	SWMH 48-3	108.944	108.153	0.051	101.585	2.0	0.06	15.6	OK
SW PIPE 48-5	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 48-5	SWMH 48-4	110.367	109.079	0.224	811.672	2.2	0.88	126.0	OK
SW PIPE 49-4	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 49-4	SWMH 49-3	113.532	112.287	0.086	230.030	2.2	0.18	36.0	OK
SW PIPE 49-3	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 49-3	SWMH 49-2	111.405	110.109	0.107	373.227	2.5	0.27	57.5	OK
SW PIPE SUMP-159-	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-159-B	SUMP-159-DBL	108.951	108.294	0.094	0.000	0.0	0	0.1	OK
SW PIPE SUMP-159	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-159-DBL	SWMH 50-2	108.951	108.294	0.090	111.760	1.0	0.18	17.1	OK
SW PIPE SUMP-158-	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-158-B	SUMP-158-DBL	108.951	108.304	0.104	0.000	0.0	0	0.1	OK
SW PIPE SUMP-158	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-158-DBL	SWMH 50-3	108.951	108.304	0.100	139.921	1.0	0.22	21.5	OK
SW PIPE SUMP-156	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-156	SWMH 49-3	111.384	110.625	0.072	46.154	0.6	0.22	7.1	OK
SW PIPE SUMP-157	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-157	SWMH 49-3	111.384	110.624	0.070	43.421	0.6	0.21	6.7	OK
Lagged Flow (92)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (86)	Simple Junction (87)		75.026	0.172	136.547	0.0		21.4	
SW PIPE 50-4	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 50-4	SWMH 50-3	109.849	108.433	0.358	2327.537	2.7	0.9	362.2	OK
SW PIPE 50-3	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 50-3	SWMH 50-2	109.078	107.794	0.346	2467.458	2.9	0.78	383.0	OK
SW PIPE 51-1	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 51-1	SWMH 50-5	115.150	113.925	0.074	138.050	1.6	0.13	22.2	OK
SW PIPE 50-5	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 50-5	SWMH 50-4	114.014	112.430	0.226	2189.803	5.0	0.63	340.1	OK
SW PIPE SUMP-162	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-162	SWMH 50-5	114.051	113.070	0.046	19.571	0.5	0.09	3.0	OK
SW PIPE 52-1	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 52-1	SWMH 50-6	120.277	119.019	0.135	281.349	1.5	0.33	45.7	OK
SW PIPE 50-6	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 50-6	SWMH 50-5	119.212	117.731	0.224	1798.797	5.0	0.87	279.9	OK
SW PIPE SUMP-165	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-165	SWMH 50-6	119.180	118.241	0.054	27.548	0.6	0.13	4.2	OK
SW PIPE SUMP-161	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-161	SWMH 50-5	113.997	113.241	0.075	48.386	0.6	0.23	7.4	OK
SW PIPE SUMP-160	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-160	SWMH 50-5	114.578	113.780	0.037	41.585	1.5	0.06	6.4	OK
SW PIPE 50-7	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 50-7	SWMH 50-6	127.537	126.018	0.166	1185.286	4.6	0.58	185.6	OK
SW PIPE SUMP-164	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-164	SWMH 50-6	119.922	119.142	0.043	66.893	1.9	0.08	10.3	OK
SW PIPE SUMP-163	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-163	SWMH 50-6	119.922	119.145	0.047	72.779	1.8	0.09	11.2	OK
SW PIPE SUMP-166	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-166	SWMH 50-7	128.551	127.749	0.040	67.025	2.2	0.07	10.3	OK
SW PIPE 50-8	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 50-8	SWMH 50-7	128.573	127.076	0.168	825.345	3.2	0.55	130.7	OK
SW PIPE 50-11	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 50-11	SWMH 50-10	135.059	133.811	0.110	327.614	2.3	0.28	53.4	OK

SW PIPE 50-10	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 50-10	SWMH 50-9	133.803	132.398	0.097	409.339	3.4	0.22	66.2	OK
SW PIPE 50-9	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 50-9	SWMH 50-8	131.313	129.870	0.123	606.699	3.6	0.32	98.3	OK
SW PIPE 53-4	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 53-4	SWMH 53-3	133.833	132.310	0.285	1899.076	3.2	0.82	288.9	OK
SW PIPE 58-9	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 58-9	SWMH 58-8	127.882	126.598	0.097	443.955	3.6	0.22	70.9	OK
SW PIPE 58-8	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 58-8	SWMH 58-7	122.368	120.970	0.117	660.790	4.1	0.31	105.0	OK
SW PIPE 58-7	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 58-7	SWMH 58-6	118.023	116.758	0.155	1048.287	4.5	0.51	166.9	OK
SW PIPE 58-6	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 58-6	SWMH 58-5	113.258	111.843	0.300	1339.372	3.0	0.75	213.1	OK
SW PIPE 525	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 58-4	SWMH 58-3	110.135	109.396	0.375	1410.003	2.0	0.89	220.4	Surcharged
SW PIPE 526	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 58-3	SWMH 58-2	109.625	108.811	0.153	1406.375	5.2	0.32	220.4	OK
SW PIPE SUMP-183-B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-183-B	SUMP-183-DBL	109.973	109.397	0.197	0.000	0.0	0	0.2	OK
SW PIPE SUMP-183	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-183-DBL	SWMH 58-4	109.973	109.397	0.255	72.701	1.2	0.06	11.2	OK
SW PIPE SUMP-182	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-182	SWMH 58-6	113.314	112.513	0.051	39.713	0.9	0.1	6.1	OK
SW PIPE SUMP-181	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-181	SWMH 58-6	113.273	112.498	0.076	51.158	0.7	0.24	7.9	OK
SW PIPE SUMP-179	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-179	SWMH 58-8	122.613	121.815	0.036	34.058	1.3	0.05	5.3	OK
SW PIPE SUMP-180	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-180	SWMH 58-8	122.484	121.682	0.032	25.487	1.1	0.04	3.9	OK
SW PIPE SUMP-178	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-178	SWMH 58-9	128.031	127.280	0.028	41.675	2.2	0.03	6.4	OK
SW PIPE SUMP-177	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-177	SWMH 58-9	128.031	127.237	0.036	48.092	1.8	0.05	7.4	OK
SW PIPE SUMP-170	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-170	SWMH 53-4	133.702	132.968	0.076	49.088	0.6	0.26	7.5	OK
SW PIPE 54-2	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 54-2	SWMH 54-1	136.216	134.636	0.138	404.863	2.2	0.29	63.0	OK
SW PIPE 54-1	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 54-1	SWMH 53-4	133.783	132.490	0.227	548.067	1.5	0.86	83.4	OK
SW PIPE 54-3	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 54-3	SWMH 54-2	139.138	137.861	0.046	88.484	2.0	0.05	13.9	OK
SW PIPE SUMP-169	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-169	SWMH 53-5	134.067	133.317	0.071	44.177	0.6	0.21	6.8	OK
SW PIPE 53-5	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 53-5	SWMH 53-4	134.148	132.881	0.268	1301.918	2.4	0.8	198.4	OK
SW PIPE 53-6	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 53-6	SWMH 53-5	139.224	137.825	0.197	1257.727	3.9	0.64	191.3	OK
SW PIPE SUMP-173	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-173	SWMH 53-6	139.293	138.517	0.057	47.918	0.9	0.13	7.4	OK
SW PIPE SUMP-172	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-172	SWMH 53-6	139.414	138.626	0.046	40.658	1.1	0.09	6.3	OK
SW PIPE 53-8	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 53-8	SWMH 53-7	143.397	142.017	0.164	567.219	2.2	0.57	86.8	OK
SW PIPE 53-7	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 53-7	SWMH 53-6	141.997	140.580	0.176	975.102	3.4	0.63	148.5	OK
SW PIPE 56-1	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 56-1	SWMH 53-8	143.836	142.542	0.140	230.652	1.1	0.44	35.4	OK
SW PIPE 53-9	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 53-9	SWMH 53-8	143.935	142.552	0.065	93.164	1.3	0.1	14.8	OK
SW PIPE SUMP-174	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-174	SWMH 53-7	142.053	141.294	0.091	72.533	0.7	0.35	11.1	OK
SW PIPE SUMP-175	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-175	SWMH 53-7	142.119	141.344	0.078	71.186	0.9	0.24	10.9	OK
SW PIPE SUMP-176	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-176	SWMH 53-8	143.519	142.554	0.066	56.792	0.9	0.18	8.7	OK
SW PIPE 42-5	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 42-5	SWMH 42-4	118.418	117.275	0.166	262.589	1.0	0.6	41.3	OK
SW PIPE 42-4	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 42-4	SWMH 42-3	118.233	116.920	0.167	621.571	2.4	0.58	97.6	OK
SW PIPE 42-3	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 42-3	SWMH 42-2	116.679	115.225	0.300	1096.519	2.9	0.65	171.3	OK
SW PIPE 43-1	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 43-1	SWMH 42-3	117.678	116.422	0.121	248.627	1.5	0.33	39.7	OK
SW PIPE SUMP-138-B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-138-B	SUMP-138-DBL	116.449	115.718	0.106	0.000	0.1	0	0.1	OK
SW PIPE SUMP-138	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-138-DBL	SWMH 42-3	116.449	115.717	0.114	129.082	0.8	0.29	19.8	OK
SW PIPE SUMP-186	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-186	SWMH 54-2	136.284	135.339	0.063	36.164	0.6	0.17	5.5	OK
SW PIPE SUMP-188	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-188	SWMH 57-7	130.323	129.551	0.058	58.466	1.1	0.13	9.0	OK
SW PIPE 57-7	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 57-7	SWMH 57-6	130.281	128.954	0.053	145.582	2.7	0.07	22.5	OK
SW PIPE 57-6	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 57-6	SWMH 57-5	128.648	127.371	0.071	275.871	3.4	0.12	43.5	OK
SW PIPE 57-5	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 57-5	SWMH 57-4	122.482	121.203	0.101	533.924	4.1	0.24	85.4	OK
SW PIPE 57-4	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 57-4	SWMH 57-3	118.957	117.687	0.167	969.934	4.0	0.43	155.1	OK
SW PIPE 57-3	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 57-3	SWMH 57-2	110.639	108.997	0.235	1118.257	3.0	0.91	175.3	OK
SW PIPE 57-2	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 57-2	SW-OUT-57-1B	108.689	107.507	0.296	1254.999	4.4	0.29	195.7	OK
SW PIPE SUMP-187	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-187	SWMH 57-7	130.323	129.561	0.070	56.582	0.8	0.19	8.7	OK
SW PIPE SUMP-189	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-189	SWMH 57-4	119.185	118.392	0.041	44.189	1.4	0.07	6.8	OK
SW PIPE SUMP-190	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-190	SWMH 57-4	119.185	118.392	0.040	54.641	1.8	0.06	8.4	OK
SW PIPE SUMP-191-B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-191-B	SUMP-191-DBL	109.733	109.033	0.138	0.000	0.1	0	0.1	OK
SW PIPE SUMP-191	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-191-DBL	SWMH 57-2	109.733	109.033	0.131	136.744	0.7	0.77	20.7	OK
SW PIPE 59-5	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 59-5	SWMH 59-4	126.891	125.490	0.525	4670.852	3.5	0.92	687.8	Surcharged
SW PIPE SUMP-211B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-211-B	SUMP-211-DBL	125.927	124.379	0.078	0.000	0.0	0	0.1	OK
SW PIPE SUMP-211	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-211-DBL	SWMH 59-4	125.926	124.379	0.089	99.946	0.9	0.17	15.4	OK
SW PIPE 60-2	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 60-2	SWMH 60-1	126.731	125.462	0.153	229.973	1.0	0.52	35.7	OK
SW PIPE 59-6	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 59-6	SWMH 59-5	128.110	126.861	0.500	4492.650	4.0	0.67	673.6	OK
SW PIPE 59-7	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 59-7	SWMH 59-6	131.282	129.790	0.368	4118.976	4.5	0.94	628.5	OK
SW PIPE 59-8	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 59-8	SWMH 59-7	133.692	132.267	0.308	2621.725	4.1	0.93	399.4	OK
SW PIPE 59-4	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 59-4	SWMH 59-3	126.093	124.234	0.399	5111.790	4.4	0.55	753.8	OK
SW PIPE 59-2	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 59-2	SW-OUT 59-1B (SD)	123.318	121.890	0.525	5163.140	3.7	0.29	798.5	OK
SW PIPE 59-11	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 59-11	SWMH 59-10	135.352	134.013	0.208	802.169	2.3	0.8	122.1	OK
SW PIPE 59-10	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 59-10	SWMH 59-9	134.064	132.737	0.306	910.909	1.5	0.79	138.9	OK
SW PIPE 59-9	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 59-9	SWMH 59-8	133.846	132.524	0.338	1132.745	1.7	0.98	172.7	OK
SW PIPE SUMP-194	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-194	SWMH 59-11	135.458	134.686	0.061	55.952	1.0	0.15	8.6	OK
SW PIPE SUMP-195	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-195	SWMH 59-11	135.248	134.498	0.081	57.143	0.7	0.28	8.8	OK
SW PIPE SUMP-197-B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-197-B	SUMP-197-DBL	133.759	132.528	0.245	0.000	0.1	0.01	0.4	OK
SW PIPE SUMP-197	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-197-DBL	SWMH 59-9	133.755	132.528	0.262	123.255	0.6	0.27	18.4	OK
SW PIPE 59-12	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 59-12	SWMH 59-11	137.745	136.382	0.147	498.306	2.2	0.4	77.2	OK
SW PIPE 59-13	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 59-13	SWMH 59-12	139.711	138.381	0.082	192.371	2.0	0.16	30.4	OK
SW PIPE SUMP-193	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-193	SWMH 59-12	137.954	137.168	0.048	40.865	1.0	0.1	6.3	OK
SW PIPE SUMP-192	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-192	SWMH 59-12	137.916	137.134	0.051	46.391	1.0	0.11	7.1	OK
SW PIPE SUMP-216	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-216	SWMH 59-7	131.295	130.517	0.068	40.796	0.6	0.2	6.3	OK
SW PIPE SUMP-218-B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-218-B	SUMP-218-DBL	131.339	130.580	0.092	0.000	0.1	0	0.1	OK

SW PIPE SUMP-218	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-218-DBL	SWMH 59-7	131.339	130.580	0.091	88.019	0.7	0.19	13.4	OK
SW PIPE 62-1	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 62-1	SWMH 59-7	133.953	132.310	0.237	1165.574	3.2	0.7	179.7	OK
SW PIPE SUMP-217	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-217	SWMH 59-7	131.371	130.543	0.055	40.436	0.8	0.13	6.2	OK
SW PIPE 62-2	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 62-2	SWMH 62-1	137.036	135.701	0.146	1043.684	4.7	0.45	161.2	OK
SW PIPE SUMP-219	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-219	SWMH 62-2	137.337	136.544	0.040	56.084	1.8	0.06	8.7	OK
SW PIPE SUMP-220	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-220	SWMH 62-2	137.790	136.995	0.039	56.294	1.9	0.06	8.7	OK
SW PIPE 62-4	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 62-4	SWMH 62-3	147.913	146.686	0.104	556.391	4.0	0.25	86.7	OK
SW PIPE 62-3	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 62-3	SWMH 62-2	144.866	143.545	0.131	848.644	4.5	0.38	131.6	OK
SW PIPE SUMP-221	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-221	SWMH 62-4	147.928	147.169	0.072	55.445	0.8	0.2	8.5	OK
SW PIPE SUMP-222	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-222	SWMH 62-4	148.044	147.264	0.052	55.097	1.2	0.11	8.5	OK
SW PIPE 62-5	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 62-5	SWMH 62-4	154.843	153.586	0.085	353.702	3.4	0.17	55.5	OK
SW PIPE 66-3	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 66-3	SWMH 66-2	134.009	132.763	0.162	229.424	0.9	0.54	36.6	OK
SW PIPE 66-2	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 66-2	SW-OUT 66-1	134.814	132.552	0.208	282.389	0.8	0.46	44.1	OK
SW PIPE SD-28	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWSD-28	SWMH 66-2	134.397	133.260	0.071	52.911	0.6	0.12	8.1	OK
SW PIPE 67-3	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 67-3	SWMH 67-2	142.287	141.210	0.195	339.962	1.1	0.78	53.6	OK
SW PIPE 67-2	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 67-2	SW-OUT 67-1	142.171	140.897	0.235	403.611	1.1	0.46	63.1	OK
SW PIPE SD-29	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWSD-29	SWMH 67-2	142.272	141.441	0.065	63.649	0.9	0.1	9.7	OK
SW PIPE 68-3	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 68-3	SWMH 68-2	152.375	151.122	0.120	204.014	1.2	0.33	31.5	OK
SW PIPE 68-2	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 68-2	SW-OUT 68-1	150.642	148.960	0.138	257.236	1.2	0.13	39.6	OK
SW PIPE SD-30	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWSD-30	SWMH 68-2	150.968	150.026	0.039	53.222	1.5	0.03	8.2	OK
SW PIPE 63-2	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 63-2	SWMH 63-1	139.399	137.883	0.178	1397.793	4.9	0.63	212.5	OK
SW PIPE 63-1	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 63-1	SWMH 59-8	135.211	133.522	0.212	1454.891	3.4	0.56	221.3	OK
SW PIPE 63-3	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 63-3	SWMH 63-2	148.774	147.275	0.153	1145.616	4.8	0.51	174.3	OK
SW PIPE SUMP-199	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-199	SWMH 63-2	139.517	138.714	0.043	50.435	1.4	0.07	7.8	OK
SW PIPE SUMP-200	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-200	SWMH 63-2	139.999	139.188	0.037	49.760	1.8	0.06	7.7	OK
SW PIPE SUMP-201	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-201	SWMH 63-3	148.892	148.087	0.042	47.390	1.4	0.07	7.3	OK
SW PIPE SUMP-202	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-202	SWMH 63-3	149.243	148.431	0.037	45.353	1.7	0.06	7.0	OK
SW PIPE 63-4	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 63-4	SWMH 63-3	152.933	151.427	0.124	782.729	4.3	0.35	119.1	OK
SW PIPE 63-5	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 63-5	SWMH 63-4	156.975	155.469	0.116	694.374	4.2	0.31	105.5	OK
SW PIPE 63-7	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 63-7	SWMH 63-6	160.953	159.471	0.167	400.206	1.5	0.58	61.0	OK
SW PIPE 63-6	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 63-6	SWMH 63-5	160.246	158.913	0.111	539.522	3.5	0.28	82.3	OK
SW PIPE 63-8	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 63-8	SWMH 63-7	161.176	159.740	0.137	208.532	1.0	0.41	32.1	OK
SW PIPE SUMP-206	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-206	SWMH 63-5	157.830	156.943	0.035	46.037	1.8	0.05	7.1	OK
SW PIPE SUMP-205	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-205	SWMH 63-5	157.410	156.607	0.038	48.938	1.7	0.06	7.5	OK
SW PIPE SUMP-208	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-208	SWMH 63-7	160.904	160.122	0.063	34.637	0.6	0.17	5.3	OK
SW PIPE SUMP-207	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-207	SWMH 63-7	160.915	160.144	0.074	47.828	0.6	0.23	7.4	OK
SW PIPE SUMP-209	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-209	SWMH 65-3	161.350	160.400	0.067	44.603	0.7	0.18	6.9	OK
Lagged Flow (129)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	EX-SW-OUT-06	POST-SITE OUTLET-TOTAL-T		52.698	1.621	35431.117	0.0		1882.1	
SW PIPE 63-9	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 65-4	SWMH 65-3	161.945	160.628	0.165	298.976	1.2	0.57	45.8	OK
SW PIPE 69-7	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 69-7	SWMH 69-6	155.369	154.085	0.108	186.559	1.3	0.18	29.4	OK
SW PIPE 69-6	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 69-6	SWMH 69-5	154.098	152.857	0.173	908.085	2.8	0.42	138.2	OK
SW PIPE 69-5	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 69-5	SWMH 69-4	152.740	151.167	0.250	1147.488	2.2	0.7	174.7	OK
SW PIPE SUMP-228-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-228-B	SUMP-228-DBL	152.346	151.575	0.067	0.000	0.0	0	0.1	OK
SW PIPE SUMP-228	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-228-DBL	SWMH 69-4	152.345	151.576	0.078	64.409	0.7	0.14	9.9	OK
SW PIPE 71-2	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 71-2	SWMH 71-1	156.915	154.642	0.130	225.460	1.2	0.16	35.2	OK
SW PIPE 71-1	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 71-1	SWMH 69-6	154.421	153.148	0.202	461.235	1.2	0.57	70.4	OK
SW PIPE SUMP-226	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-226	SWMH 71-2	157.662	155.537	0.037	46.214	1.7	0.06	7.1	OK
SW PIPE 70-1	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 70-1	SWMH 69-5	152.643	151.358	0.105	152.807	1.1	0.25	24.1	OK
SW PIPE SUMP-224-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-224-B	SUMP-224-DBL	153.987	153.243	0.093	0.000	0.1	0	0.1	OK
SW PIPE SUMP-224	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-224-DBL	SWMH 69-6	153.987	153.243	0.091	87.341	0.7	0.19	13.3	OK
SW PIPE SUMP-227	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-227	SWMH 69-5	152.841	152.061	0.054	56.357	1.2	0.12	8.7	OK
SW PIPE SUMP-223	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-223	SWMH 69-6	154.017	153.247	0.082	59.441	0.7	0.29	9.1	OK
SW PIPE SUMP-225	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-225	SWMH 71-2	157.662	155.712	0.033	42.500	1.8	0.05	6.6	OK
SW PIPE 69-4	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 69-4	SWMH 69-3	152.390	150.709	0.225	1268.430	2.8	0.35	192.9	OK
SW PIPE 69-3	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 69-3	SWMH 69-2	150.566	149.490	0.269	1268.428	2.3	0.78	193.2	OK
SW PIPE 72-3	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SW-IN 72-3	SWMH 72-2	91.892	92.114	0.585	37855.578	4.9	0.31	2667.4	Flood
SW PIPE 72-2	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 72-2	SW-OUT 72-1	92.950	91.087	1.068	37855.750	3.3	0.09	2667.4	OK
SW PIPE 73-2	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SW-IN 74-2	SW-OUT 74-1	106.178	106.039	0.783	9979.938	2.0	0.35	1171.5	Flood Risk
SW PIPE SUMP-184	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-184	SWMH 54-2	136.288	135.609	0.076	50.084	0.6	0.26	7.7	OK
SW PIPE SUMP-171-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-171-B	SUMP-171-DBL	133.854	133.124	0.300	0.000	0.0	0	0.1	Surcharged
SW PIPE SUMP-171	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-171-DBL	SWMH 54-1	133.814	133.124	0.063	114.493	1.7	0.09	17.7	OK
SW PIPE 53-3	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 53-3	SWMH 53-2	133.038	131.518	0.210	1899.076	4.5	0.57	289.1	OK
SW PIPE 53-2	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 53-2	SW-OUT 53-1B	129.986	128.875	0.375	1923.482	2.7	0.25	293.4	OK
Lagged Flow (46)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	SW-OUT 53-1B	Simple Junction (49)		112.998	0.059	1923.476	0.0		293.8	
Lagged Flow (87)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (81)	Simple Junction (83)		88.526	0.170	136.547	0.0		21.5	
Lagged Flow (97)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (90)	Simple Junction (82)		73.565	0.339	555.886	0.0		85.2	
Lagged Flow (94)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (88)	Simple Junction (89)		65.526	0.169	136.547	0.0		21.4	
Lagged Flow (95)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	SW-OUT 38-1B(SD)	Simple Junction (90)		76.801	0.034	555.885	0.0		84.3	
Lagged Flow (96)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	SW-OUT 6-1	EX-SW-IN-03		53.025	0.368	651.931	0.0		100.6	
Lagged Flow (86)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (80)	Simple Junction (81)		90.026	0.014	136.547	0.0		21.3	
Lagged Flow (85)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (69)	Simple Junction (80)		94.526	0.170	136.548	0.0		21.3	
SW PIPE 60-1	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 60-1	SWMH 59-4	126.504	125.170	0.117	299.311	1.8	0.3	46.1	OK
SW PIPE SD-26	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWSD-26	SWMH 59-2	123.500	122.557	0.056	51.563	1.0	0.07	8.9	OK

SW PIPE SUMP-213	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-213	SWMH 59-6	128.139	127.233	0.060	33.149	0.6	0.16	5.1	OK
SW PIPE 61-2	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 61-2	SWMH 61-1	128.430	127.134	0.128	164.114	0.9	0.37	25.6	OK
SW PIPE 61-1	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 61-1	SWMH 59-6	128.315	126.970	0.210	211.573	0.6	0.34	32.8	OK
Lagged Flow (60)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	SW-OUT 58-1B	SW-IN 73-2		96.770	0.059	1486.071	0.0		234.4	
SW PIPE 673	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 58-2	SW-OUT 58-1B	107.879	106.459	0.450	1486.486	1.5	0.13	234.4	OK
SW PIPE 74-2	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SW-IN 73-2	SW-OUT 73-1	96.536	96.463	0.448	6840.370	2.9	0.33	836.3	Flood Risk
SW PIPE 69-2	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 69-2	SW-OUT 69-1B (SD)	150.183	148.948	0.369	1291.833	1.8	0.16	197.3	OK
SW PIPE SD-27	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWSD-27	SWMH 69-2	150.000	149.043	0.043	23.408	0.7	0.04	4.1	OK
SW PIPE 42-2	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 42-2	SW-OUT 42-1B	114.708	114.354	0.300	1096.527	2.4	1.25	171.4	Surcharged
SW PIPE 48-3	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 48-3	SWMH 48-2	108.816	107.081	0.169	1067.929	4.0	0.54	165.9	OK
SW PIPE 48-2	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 48-2	SW-OUT 48-1B	106.969	105.598	0.300	1080.389	2.4	0.25	168.1	OK
SW PIPE SD-20	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWSD-20	SWMH 48-2	106.500	105.631	0.044	12.462	0.4	0.02	2.2	OK
SW PIPE SD-14	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWSD-14	SW-OUT 42-1B	114.300	113.725	0.300	22.380	0.4	0.04	4.0	Surcharged
SW PIPE 684	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWSD-24	SWMH 58-2	107.500	106.479	0.111	80.144	0.6	0.14	13.9	OK
SW PIPE 44-3	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 44-3	SWMH 44-2	111.330	110.457	0.375	2144.082	3.2	0.93	325.8	Surcharged
SW PIPE 44-2	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 44-2	SW-OUT 44-1B	110.802	109.331	0.375	2173.243	3.0	0.28	330.9	OK
Lagged Flow (93)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (87)	Simple Junction (88)		66.526	0.012	136.547	0.0		21.4	
SW PIPE 50-2	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 50-2	SW-OUT 50-1B	109.127	107.336	0.401	2579.217	3.8	0.34	399.7	OK
SW PIPE 50-1B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SW-OUT 50-1B	SW-OUT 50-1A	106.880	106.207	0.525	2579.220	1.8	0.93	399.9	Surcharged
SW PIPE 49-2	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 49-2	SW-OUT 49-1B	109.715	108.219	0.073	373.207	4.9	0.1	57.3	OK
SW PIPE 49-1B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SW-OUT 49-1B	SW-OUT 74-1	105.130	104.096	0.300	396.822	1.2	0.43	60.7	Surcharged
SW PIPE SD-22	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWSD-22	SW-OUT 49-1B	107.000	106.022	0.022	23.627	1.7	0.01	4.1	OK
SW PIPE SD-23	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWSD-23	SWMH 53-2	130.500	129.544	0.043	24.407	0.7	0.04	4.2	OK
SW PIPE SD-21	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWSD-21	SWMH 44-2	110.800	109.933	0.032	29.162	1.2	0.02	5.1	OK
SW PIPE SUMP-142	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-142	SWMH 32-7	118.385	117.908	0.225	37.227	0.3	0.08	5.5	Surcharged
SW PIPE SUMP-140-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-143-B	SUMP-143-DBL	118.416	117.909	0.300	0.000	0.0	0	0.3	Surcharged
SW PIPE SUMP-140	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-140	SWMH 32-6	118.056	117.260	0.053	30.572	0.6	0.07	4.7	OK
SW PIPE SUMP-141-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-141-B	SUMP-141-DBL	118.058	117.284	0.064	0.000	0.0	0	0.1	OK
SW PIPE SUMP-141	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-141-DBL	SWMH 32-6	118.058	117.284	0.064	45.092	0.6	0.1	6.8	OK
SW PIPE SUMP-143	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-143-DBL	SWMH 32-7	118.387	117.909	0.300	84.704	0.2	0.09	12.7	OK
SW PIPE SUMP-144	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-236	SWMH 41-2	122.148	121.207	0.056	41.624	0.8	0.12	6.4	OK
SW PIPE SUMP-168-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-168-B	SUMP-168-DBL	128.742	127.907	0.003	0.000	0.0	0	0.0	OK
SW PIPE SUMP-168	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-168-DBL	SWMH 50-8	128.784	127.908	0.061	162.983	2.4	0.08	25.2	OK
SW PIPE SUMP-167	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-167	SWMH 50-8	128.543	127.770	0.059	55.664	1.0	0.14	8.6	OK
SW PIPE SUMP-212	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-212	SWMH 60-1	126.452	125.685	0.043	16.694	0.5	0.08	2.6	OK
SW PIPE SUMP-196	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-196	SWMH 59-9	133.763	133.003	0.091	69.947	0.7	0.34	10.8	OK
SW PIPE SUMP-203	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-203	SWMH 64-2	152.727	151.968	0.037	16.223	0.6	0.06	2.5	OK
SW PIPE SUMP-204	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-204	SWMH 64-5	156.751	156.043	0.035	15.026	0.6	0.05	2.3	OK
SW PIPE 46-1	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 46-1	SWMH 44-5	113.493	112.157	0.104	213.595	1.5	0.24	33.3	OK
SW PIPE 59-3	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 59-3	SWMH 59-2	124.000	122.864	0.491	5111.750	3.2	0.91	787.9	OK
SW PIPE SUMP-233	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-233	SWMH 48-5	110.318	109.657	0.093	73.271	0.7	0.36	11.3	OK
SW PIPE SUMP-234	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-234	SWMH 48-5	110.429	109.748	0.077	64.130	0.8	0.23	9.9	OK
SW PIPE SUMP-139	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-139	SWMH 42-3	116.657	115.919	0.058	29.597	0.6	0.14	4.5	OK
SW PIPE SUMP-229	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-229	SWSD-28	133.729	133.262	0.225	53.195	0.2	0.26	8.2	Surcharged
SW PIPE SUMP-230	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-230	SWSD-29	142.095	141.640	0.086	63.650	0.7	0.31	9.8	OK
SW PIPE SUMP-231	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-231	SWSD-30	151.561	150.663	0.039	53.222	1.8	0.06	8.2	OK
SW PIPE SUMP-146	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-146	SWMH 44-7	120.287	119.588	0.059	79.322	1.5	0.14	12.2	OK
SW PIPE SUMP-145	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-145	SWMH 44-7	119.929	119.247	0.074	47.966	0.7	0.23	7.4	OK
SW PIPE SUMP-147	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-147	SWMH 44-7	120.007	119.121	0.043	17.168	0.5	0.08	2.6	OK
SW PIPE SUMP-185	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-185	SWMH 54-2	136.539	135.828	0.048	46.703	1.1	0.1	7.2	OK
SW PIPE SUMP-198	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-198	SWMH 63-1	135.147	134.443	0.053	25.310	0.5	0.12	3.9	OK
SW PIPE 18-1	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 18-1	SWMH 16-7	54.780	53.591	0.158	176.808	0.8	0.2	28.7	OK
SW PIPE SUMP-214	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-214	SWMH 59-6	128.455	127.727	0.032	26.900	1.2	0.04	4.1	OK
SW PIPE SUMP-215	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-215	SWMH 59-6	128.585	127.858	0.034	33.032	1.4	0.05	5.1	OK
SW PIPE 55-3	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 55-3	SWMH 55-2	137.972	135.997	0.140	196.537	0.9	0.44	30.1	OK
SW PIPE 55-2	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 55-2	SW-OUT-55-1B	136.969	135.750	0.049	264.472	5.4	0.06	40.5	OK
SW PIPE 55-1B	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SW-OUT-55-1B	SW-OUT-55-1A	115.822	114.133	0.123	264.471	1.5	0.3	40.6	OK
SW PIPE 727	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 65-3	SWMH 65-2	161.379	160.184	0.181	415.347	1.4	0.66	63.4	OK
SW PIPE 728	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 65-2	SWMH 65-1B	160.802	159.514	0.060	457.728	7.0	0.09	69.9	OK
SW PIPE 729	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 65-1B	SW-OUT 65-1A	152.489	150.863	0.167	457.727	1.7	0.51	70.0	OK
SW PIPE 64-2	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 64-2	SW-OUT-64-1	152.791	151.573	0.149	291.105	1.3	0.47	45.2	OK
SW PIPE 732	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-210	SWMH 65-3	161.343	160.659	0.072	45.401	0.6	0.22	7.0	OK
SW PIPE 64-5	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 64-5	SWMH 64-4	156.802	155.397	0.094	92.149	0.8	0.21	14.3	OK
SW PIPE 64-4	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 64-4	SWMH 64-3	156.444	155.176	0.043	145.618	3.8	0.03	22.8	OK
SW PIPE 64-3	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 64-3	SWMH 64-2	153.411	151.949	0.105	174.375	1.2	0.18	27.2	OK
SW PIPE 736	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 55-5	SWMH 55-4	138.854	136.520	0.079	94.571	1.0	0.15	14.5	OK
SW PIPE 737	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 55-4	SWMH 55-3	137.288	136.098	0.094	94.571	0.8	0.21	14.5	OK
SW PIPE 57-2 (1)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SW-OUT-57-1B	SW-OUT 57-1A	96.937	95.404	0.300	1255.018	2.8	1.43	195.7	Surcharged
SW PIPE 754	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SW-IN 75-2	SW-OUT 75-1	92.434	92.335	0.146	545.805	1.9	0.18	85.7	Flood Risk

SW PIPE 755	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 41-4	SWMH 41-3	123.077	121.863	0.073	92.927	1.1	0.1	14.6	OK
SW PIPE 756	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-237	SWMH 41-2	120.184	119.532	0.081	56.498	0.7	0.27	8.7	OK
SW PIPE 757	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-239	SWMH 41-3	122.283	121.609	0.060	32.705	0.6	0.16	5.0	OK
SW PIPE 758	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-238	SWMH 41-3	122.283	121.600	0.052	24.701	0.5	0.11	3.8	OK
SW PIPE 759	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-144	SWMH 44-8	123.217	122.448	0.086	66.047	0.7	0.31	10.1	OK
No Delay (11)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	No Delay	SW-OUT-01	EX-POND 01-02-POST-COMBINED		51.466	0.240	17661.943	0.0		830.4	
No Delay (12)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	No Delay	EX-POND 01-02-POST-COMBINED	SW-IN-95-NEW		51.382	0.262	17963.727	0.0		825.3	
RET-B-PIPE OUT	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	No Delay	RETENTION B	SW-IN 01-3		55.892	0.128	17661.922	0.0		835.0	
RET-B-SD-OUT	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	No Delay	RETENTION B	SWMH 01-2 (SD-IN)		55.892	0.000	0.000	0.0		0.0	
SW LINE-01 IN	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	No Delay	SW-OUT 2-1	RETENTION B		55.983	0.046	1578.153	0.0		82.7	
RET-A-OUT-SD-OUT	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	No Delay	RETENTION A	SWMH 20-2 (SD-IN)		42.262	0.000	0.000	0.0		0.0	
RET-A-OUT-PIPE	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	No Delay	RETENTION A	SW-IN 20-3		42.262	0.116	10607.728	0.0		716.3	
SWMH 16-2-SD-OUT	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	No Delay	SWMH 16-2	RETENTION A		43.191	0.071	1628.741	0.0		255.0	
SWMH 19-2-SD-OUT	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	No Delay	SWMH 19-2	RETENTION A		45.164	0.053	1450.030	0.0		225.8	
SW LINE-07-SD-OUT	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	No Delay	SWMH 7-2	RETENTION A		46.189	0.062	2692.071	0.0		417.4	
SW LINE-13-GULLY	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (10)	Simple Junction (11)		46.478	0.072	4840.506	0.0		747.6	
SW LINE-13-SD-OUT	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	No Delay	SWMH 13-2	Simple Junction (10)		48.189	0.186	4840.524	0.0		747.6	
SW LINE 13-GULLY-SD	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	No Delay	Simple Junction (11)	RETENTION A		44.478	0.094	4840.488	0.0		747.6	
Lagged Flow	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	SW-OUT 20-1	Simple Junction (12)		37.373	1.047	11741.042	0.0		839.2	
Lagged Flow (1)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (12)	Simple Junction (18)		35.800	0.111	11741.046	0.0		839.2	
Lagged Flow (2)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (18)	Simple Junction (13)		35.300	0.099	11741.050	0.0		839.2	
Lagged Flow (3)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (13)	Simple Junction (14)		34.300	0.105	11741.053	0.0		839.2	
Lagged Flow (4)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (14)	Simple Junction (15)		33.800	0.088	11741.057	0.0		839.2	
Lagged Flow (5)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (15)	Simple Junction (16)		33.300	1.048	11741.047	0.0		839.9	
Lagged Flow (6)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (16)	Simple Junction (17)		32.300	0.090	11741.053	0.0		839.9	
Lagged Flow (7)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (17)	POST-SITE OUTLET-T1		31.900	0.165	11741.057	0.0		839.9	
Lagged Flow (8)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (30)	Simple Junction (31)		110.048	0.020	344.494	0.0		53.5	
Lagged Flow (9)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (31)	Simple Junction (32)		101.548	0.269	344.495	0.0		53.5	
Lagged Flow (10)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (32)	Simple Junction (33)		87.548	0.265	344.496	0.0		53.8	
Lagged Flow (11)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (33)	Simple Junction (34)		83.288	0.035	873.709	0.0		134.5	
Lagged Flow (12)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (34)	Simple Junction (35)		81.120	0.538	1385.792	0.0		215.0	
Lagged Flow (13)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (35)	Simple Junction (36)		76.121	0.531	1385.794	0.0		216.5	
Lagged Flow (14)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (36)	Simple Junction (37)		72.622	0.544	1385.797	0.0		215.5	
Lagged Flow (15)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (37)	RETENTION C		68.221	0.052	1385.793	0.0		215.5	
Lagged Flow (16)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (38)	Simple Junction (19)		105.125	0.545	1649.071	0.0		227.4	
Lagged Flow (17)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (19)	Simple Junction (20)		93.126	0.561	1649.073	0.0		227.5	
Lagged Flow (18)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (20)	Simple Junction (21)		78.126	0.560	1649.075	0.0		227.3	
Lagged Flow (19)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (21)	Simple Junction (22)		71.125	0.558	1649.077	0.0		227.4	
Lagged Flow (20)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (22)	Simple Junction (23)		66.926	0.555	1649.078	0.0		227.5	
Lagged Flow (21)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (23)	Simple Junction (24)		63.426	0.042	1649.077	0.0		227.5	
Lagged Flow (22)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (24)	Simple Junction (25)		62.026	0.042	1649.074	0.0		227.5	
Lagged Flow (23)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (25)	Simple Junction (26)		60.426	0.048	1649.073	0.0		227.5	
Lagged Flow (24)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	SW-OUT 23-1	Simple Junction (29)		60.752	0.080	7480.132	0.0		427.1	
Lagged Flow (25)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (29)	Simple Junction (26)		60.292	0.077	7480.156	0.0		427.1	
Lagged Flow (26)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (26)	Simple Junction (27)		60.143	0.070	9129.250	0.0		611.4	
Lagged Flow (27)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (27)	Simple Junction (28)		59.443	0.894	9129.228	0.0		609.0	
Lagged Flow (28)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (28)	RETENTION B		58.742	0.082	9129.251	0.0		608.9	
Lagged Flow (29)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (39)	Simple Junction (30)		118.048	0.025	344.496	0.0		53.6	
SW-LINE-12-PIPE-SD	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	No Delay	SW-OUT 28-1A	Simple Junction (39)		118.743	0.054	338.229	0.0		41.3	
SW LINE-28-SD-OUT	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	No Delay	SW-OUT 28-1B	Simple Junction (39)		119.987	0.025	6.268	0.0		12.3	
SW-29-SD-OUT	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	No Delay	SW-OUT 29-1B	Simple Junction (38)		107.212	0.108	1649.068	0.0		227.3	
SW-27-SD-OUT	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	No Delay	SW-OUT 27-1B	Simple Junction (33)		85.684	0.035	529.217	0.0		80.6	
SW-26-SD-OUT	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	No Delay	SW-OUT 26-1B	Simple Junction (34)		82.622	0.040	512.079	0.0		78.0	
SW-21-SD-OUT	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	No Delay	SW-OUT 21-1B (SD)	Simple Junction (40)		59.510	0.129	4237.214	0.0		608.3	
SW LINE-21 OUT TO	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	No Delay	Simple Junction (40)	RETENTION B		58.142	0.091	4237.196	0.0		608.3	
SW-24-PIPE-OUT	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	No Delay	SW-OUT 24-1	RETENTION C		67.056	0.071	2724.299	0.0		424.3	
RET-C-PIPE-OUT	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	No Delay	RETENTION C	SW-IN 23-3		65.800	0.080	7480.096	0.0		429.6	
RET-C-SD-OUT	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	No Delay	RETENTION C	SWMH 23-2 (SD-IN)		65.800	0.000	0.000	0.0		0.0	
Lagged Flow (30)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	SW-OUT 74-1	Simple Junction (67)		104.092	0.106	10377.505	0.0		1126.7	

Lagged Flow (31)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	SW-OUT 50-1A	Simple Junction (68)	106.101	0.088	2579.403	0.0	400.1	
Lagged Flow (32)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (68)	Simple Junction (66)	105.130	0.738	2579.436	0.0	404.4	
Lagged Flow (33)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (67)	Simple Junction (66)	103.602	0.108	10377.512	0.0	1126.3	
Lagged Flow (34)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (66)	Simple Junction (75)	103.511	1.316	12956.965	0.0	1314.8	
Lagged Flow (35)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (65)	Simple Junction (64)	103.464	1.477	15130.232	0.0	1598.7	
Lagged Flow (36)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (64)	Simple Junction (63)	99.267	0.110	15130.231	0.0	1598.7	
Lagged Flow (37)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (63)	Simple Junction (62)	98.866	0.124	15130.231	0.0	1598.7	
Lagged Flow (38)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (62)	Simple Junction (61)	98.461	1.441	15130.232	0.0	1573.6	
Lagged Flow (39)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (61)	Simple Junction (59)	97.956	1.429	15130.233	0.0	1579.4	
Lagged Flow (41)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	SW-OUT 48-1B	Simple Junction (60)	101.941	0.039	1080.382	0.0	167.1	
Lagged Flow (42)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (60)	Simple Junction (59)	97.602	0.058	1080.378	0.0	167.1	
Lagged Flow (40)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (59)	Simple Junction (92)	96.974	1.498	16210.613	0.0	1690.5	
Lagged Flow (47)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (49)	Simple Junction (50)	109.749	0.069	1923.468	0.0	293.8	
Lagged Flow (48)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (50)	Simple Junction (51)	108.449	0.062	1923.461	0.0	293.8	
Lagged Flow (49)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (51)	Simple Junction (52)	107.449	0.628	1923.465	0.0	296.3	
Lagged Flow (50)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (52)	Simple Junction (53)	103.950	0.631	1923.469	0.0	298.8	
Lagged Flow (51)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (53)	Simple Junction (54)	101.151	0.081	1923.463	0.0	298.9	
Lagged Flow (52)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (54)	Simple Junction (55)	100.651	0.052	1923.456	0.0	298.9	
Lagged Flow (53)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (55)	Simple Junction (56)	99.651	0.052	1923.450	0.0	298.9	
Lagged Flow (54)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (56)	Simple Junction (57)	98.951	0.052	1923.443	0.0	298.9	
Lagged Flow (55)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (57)	Simple Junction (58)	98.451	0.045	1923.437	0.0	298.9	
Lagged Flow (44)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (92)	Simple Junction (46)	96.233	1.602	18134.059	0.0	1916.4	
Lagged Flow (43)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (58)	Simple Junction (92)	98.051	0.638	1923.441	0.0	300.6	
Lagged Flow (58)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (46)	Simple Junction (45)	95.036	0.145	18134.059	0.0	1916.4	
Lagged Flow (59)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (45)	Simple Junction (44)	94.833	0.129	18134.059	0.0	1916.3	
Lagged Flow (56)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (73)	Simple Junction (93)	94.437	0.129	4309.332	0.0	589.4	
Lagged Flow (61)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	SW-OUT 32-1B (SD)	Simple Junction (72)	99.876	0.087	4309.384	0.0	589.4	
Lagged Flow (62)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (72)	Simple Junction (73)	96.737	0.073	4309.358	0.0	589.4	
Lagged Flow (57)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (93)	RETENTION E	93.679	0.176	22443.363	0.0	2505.6	
Lagged Flow (64)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (47)	Simple Junction (48)	95.775	0.111	6840.310	0.0	737.9	
No Delay (6)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	No Delay	SW-OUT 73-1	Simple Junction (47)	96.240	0.220	6840.330	0.0	738.0	
No Delay (7)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	No Delay	Simple Junction (48)	RETENTION E	95.275	0.118	6840.289	0.0	737.9	
Lagged Flow (45)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (44)	Simple Junction (93)	94.233	0.165	18134.057	0.0	1916.3	
Lagged Flow (65)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (75)	Simple Junction (65)	103.487	1.456	15130.229	0.0	1617.8	
Lagged Flow (66)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	SW-OUT 44-1B	Simple Junction (74)	105.395	0.092	2173.220	0.0	303.4	
Lagged Flow (68)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (74)	Simple Junction (75)	103.652	0.641	2173.225	0.0	303.4	
SW LINE 42-TO RET-	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (76)	RETENTION E	112.606	0.496	1118.908	0.0	178.6	
Lagged Flow (67)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	SW-OUT 42-1B	Simple Junction (76)	113.725	0.077	1118.906	0.0	175.5	
Lagged Flow (69)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	SW-OUT 75-1	Simple Junction (41)	91.767	0.331	545.805	0.0	82.3	
Lagged Flow (72)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	SW-OUT 72-1	Simple Junction (41)	90.890	0.179	37855.613	0.0	2536.2	
Lagged Flow (73)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (41)	Simple Junction (42)	88.495	1.882	38401.313	0.0	2559.8	
Lagged Flow (74)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (42)	Simple Junction (43)	88.283	1.867	38658.461	0.0	2570.6	
Lagged Flow (63)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	SW-OUT 59-1B (SD)	SW-IN 73-2	97.780	0.100	5163.307	0.0	580.6	
No Delay (13)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	No Delay	RETENTION E	SW-IN 72-3	92.902	0.278	37855.594	0.0	2668.2	
No Delay (14)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	No Delay	RETENTION E	SWMH 72-2	92.902	0.000	0.000	0.0	0.0	
Lagged Flow (77)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	SW-OUT 66-1	Simple Junction (78)	132.525	0.247	282.390	0.0	44.8	
Lagged Flow (78)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	SW-OUT 67-1	Simple Junction (78)	140.853	0.299	403.612	0.0	64.5	
Lagged Flow (79)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (78)	RETENTION E	105.577	0.387	686.003	0.0	109.4	
Lagged Flow (80)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	SW-OUT 68-1	Simple Junction (79)	148.583	0.235	257.236	0.0	40.1	
Lagged Flow (81)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (79)	Simple Junction (42)	107.539	0.236	257.236	0.0	39.8	
No Delay (15)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	No Delay	SW-OUT 35-1A	RETENTION D	109.187	0.038	721.864	0.0	45.0	
No Delay (16)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	No Delay	SW-OUT 35-1B (SD)	RETENTION D	110.529	0.042	85.475	0.0	78.5	
No Delay (17)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	No Delay	SW-OUT 36-1	RETENTION D	109.197	0.035	321.679	0.0	49.1	
No Delay (18)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	No Delay	RETENTION D	SW-IN 34-4	109.168	0.059	1128.986	0.0	140.6	
No Delay (19)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	No Delay	RETENTION D	SW-IN 34-3 (SD)	109.168	0.000	0.000	0.0	0.0	
Lagged Flow (82)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	SW-OUT 34-1B (SD)	POST-SITE OUTLET-NORTH	101.506	0.043	1202.721	0.0	152.2	
Lagged Flow (83)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	SW-OUT 39-1B (SD)	Simple Junction (69)	97.731	0.013	136.547	0.0	21.0	

SW PIPE 58-5	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 58-5	SWMH 58-4	110.317	109.645	0.375	1339.125	1.9	0.8	210.6	Surcharged
No Delay (22)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	No Delay	SW-OUT 69-1B (SD)	Simple Junction (91)		120.990	0.094	1291.831	0.0		197.6	
Pipe (3)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SW-IN 95-2	SW-OUT 95-1	56.651	57.843	0.900	25419.180	2.8	0.91	1802.6	Flood
SW PIPE EX-SW-IN-93-3	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	EX-SW-IN-07	SWMH 93-2	58.718	58.720	0.375	4327.667	3.4	0.77	295.6	Flood
SW PIPE 93-3	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SW-IN 93-3	SWMH 93-2	57.900	58.329	0.375	5339.590	4.1	1.15	451.0	Flood
SW PIPE 93-2	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 93-2	SW-OUT 93-1	59.000	58.188	0.600	10230.229	2.3	0.96	647.1	Surcharged
Pipe (7)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SW-IN 90-3	SWMH 90-2	57.500	56.144	0.640	36879.762	4.4	0.36	2735.2	OK
Pipe (8)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 90-2	SW-OUT 90-1	57.306	55.047	1.350	36880.000	2.2	0.3	2730.6	OK
SW PIPE-EX-05	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	EX-SW-IN-06	EX-SW-OUT-06	53.000	53.121	0.900	35431.164	3.0	0.9	1882.1	Flood
No Delay	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	No Delay	EX-POND 04-POST	EX-SW-IN-06		54.398	0.294	35431.152	0.0		1958.0	
No Delay (1)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	No Delay	EX-POND 05	SW-IN 95-2		59.092	0.114	25419.230	0.0		2079.3	
No Delay (2)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	No Delay	EX-POND 07-POST	EX-SW-IN-07		59.714	0.125	4327.935	0.0		295.9	
Lagged Flow (70)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	SW-OUT 37-1B (SD)	Simple Junction (99)		87.235	0.043	1113.873	0.0		173.2	
Lagged Flow (71)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (99)	Simple Junction (98)		85.116	0.484	1113.874	0.0		175.4	
Lagged Flow (76)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (98)	Simple Junction (97)		80.616	0.488	1113.876	0.0		175.1	
Lagged Flow (84)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (97)	Simple Junction (96)		72.114	0.472	1113.877	0.0		172.2	
Lagged Flow (101)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (96)	Simple Junction (95)		69.615	0.488	1113.878	0.0		174.9	
Lagged Flow (102)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (95)	Simple Junction (94)		64.115	0.035	1113.875	0.0		173.8	
Lagged Flow (103)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (94)	Simple Junction (77)		63.114	0.475	1113.876	0.0		168.5	
Lagged Flow (104)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (77)	EX-POND 07-POST		60.614	0.036	1113.874	0.0		171.0	
No Delay (3)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	No Delay	EX-POND 06-POST	SW-IN 93-3		59.238	0.123	5339.563	0.0		324.2	
Lagged Flow (105)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (71)	Simple Junction (100)		61.579	0.046	692.430	0.0		99.2	
Lagged Flow (106)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (100)	Simple Junction (101)		61.079	0.029	692.428	0.0		98.3	
Lagged Flow (107)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (101)	Simple Junction (102)		60.079	0.032	692.425	0.0		98.2	
Lagged Flow (108)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (102)	EX-POND 06-POST		59.579	0.032	692.423	0.0		99.3	
No Delay (5)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	No Delay	POND-08-POST	SW-IN 90-3		56.957	0.358	36881.004	0.0		2736.1	
No Delay (4)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	No Delay	SW-OUT 90-1	EX-POND 04-POST		54.901	0.268	36880.660	0.0		2730.0	
SW PIPE 94-3	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 94-3	SWMH 94-2	60.681	59.453	0.072	159.131	2.0	0.12	26.8	OK
SW PIPE 94-2	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 94-2	SW-OUT 94-1	59.583	57.982	0.117	159.131	1.0	0.16	26.6	OK
SW PIPE SUMP-305-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-305-DBL	SW-OUT 93-1	58.852	58.083	0.300	50.916	0.8	0.03	8.0	OK
SW PIPE 96-3	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 96-3	SWMH 96-2	51.191	50.012	0.051	92.234	1.7	0.06	13.3	OK
SW PIPE 96-2	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 96-2	SW-OUT 96-1	50.652	49.103	0.121	163.875	0.9	0.24	23.4	OK
SW PIPE 91-2	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 91-2	SW-OUT 91-1	55.356	54.940	0.284	809.602	3.0	0.3	133.0	OK
No Delay (8)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	No Delay	SW-OUT 95-1	POND-08-POST		57.507	0.300	25419.127	0.0		1804.6	
No Delay (9)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	No Delay	SW-OUT 94-1	POND-08-POST		57.692	0.037	159.130	0.0		26.3	
No Delay (10)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	No Delay	SW-OUT 93-1	POND-08-POST		57.599	0.248	10491.696	0.0		631.3	
SW PIPE SUMP-301-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-301-DBL	SWMH 91-3	56.720	55.594	0.092	124.235	1.0	0.2	19.1	OK
SW PIPE SUMP-302-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-302-DBL	SWMH 91-3	56.840	55.788	0.135	228.416	1.3	0.4	38.8	OK
SW PIPE SUMP-309	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-309	SWMH 91-2	56.400	55.748	0.048	67.463	1.6	0.05	11.6	OK
Pipe (19)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-303-DBL	SWMH 92-1	57.260	56.143	0.139	236.633	1.3	0.42	40.4	OK
Pipe (20)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-304-DBL	SWMH 92-1	57.180	56.061	0.107	152.780	1.1	0.26	25.0	OK
SW PIPE SUMP-307-DBL	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-307-DBL	SW-OUT SUMP-307	54.703	53.972	0.097	123.126	1.0	0.11	19.1	OK
Pipe (4)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-300-DBL	SWMH 96-2	50.680	49.938	0.071	71.640	0.8	0.03	10.5	OK
No Delay (24)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	No Delay	SW-OUT 91-1	EX-POND 04-POST		53.456	0.064	809.544	0.0		99.4	
SW PIPE 76-5	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 76-5	SWMH 76-4	137.110	135.873	0.073	87.083	1.0	0.13	13.4	OK
Pipe (5)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-241	SWMH 76-4	136.749	136.045	0.071	79.097	1.2	0.2	12.7	OK
Pipe (6)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SUMP-240	SWMH 76-4	136.749	136.119	0.115	139.691	1.1	0.49	22.8	OK
Pipe (9)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 76-4	SWMH 76-3	136.648	135.279	0.076	305.871	3.4	0.13	48.6	OK
Pipe (10)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 76-3	SWMH 76-2	134.960	133.504	0.103	305.870	2.2	0.25	47.8	OK
Pipe (11)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Pipe	SWMH 76-2	SW-OUT 76-1	133.139	131.852	0.140	305.872	1.5	0.07	47.8	OK
Lagged Flow (75)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	SW-OUT 76-1	Simple Junction (103)		110.723	0.024	305.869	0.0		48.0	
Lagged Flow (100)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (103)	Simple Junction (104)		105.520	0.257	305.869	0.0		48.6	
Lagged Flow (109)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (104)	Simple Junction (106)		96.020	0.259	305.870	0.0		49.1	
Lagged Flow (110)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (106)	Simple Junction (107)		89.520	0.256	305.870	0.0		49.1	
Lagged Flow (111)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (107)	Simple Junction (108)		86.720	0.254	305.871	0.0		47.9	
Lagged Flow (112)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (43)	Simple Junction (108)		87.783	1.867	38658.371	0.0		2571.3	
Lagged Flow (113)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (108)	Simple Junction (109)		86.627	1.859	38964.156	0.0		2582.6	
Lagged Flow (114)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (109)	Simple Junction (110)		86.484	1.838	38964.078	0.0		2582.1	
Lagged Flow (115)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (110)	Simple Junction (111)		85.327	1.981	37549.582	0.0		2730.0	
Lagged Flow (117)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (118)	POST-SITE OUTLET-KAKAHO		98.082	0.526	1291.837	0.0		197.1	
Lagged Flow (116)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (111)	POST-SITE OUTLET-KAKAHO		85.138	2.443	31481.371	0.0		3212.9	
Lagged Flow (122)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	Simple Junction (91)	Simple Junction (118)		120.364	0.524	1291.834	0.0		200.7	

No Delay (21)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	No Delay	EX-POND 05	POND-08-POST	59.092	0.094	810.995	0.0	758.3	
No Delay (25)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	No Delay	EX-POND 06-POST	SWMH 93-2	59.238	0.130	562.778	0.0	295.1	
Lagged Flow (124)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	SW-OUT 96-1	EX-SW-IN-03	48.939	0.178	163.874	0.0	23.3	
Lagged Flow (128)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	EX-POND 04-POST	POST-SITE OUTLET-TOTAL-T	54.398	1.010	2489.134	0.0	747.5	
Lagged Flow (125)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	POST-SITE OUTLET-T3	POST-SITE OUTLET-TOTAL-T	48.960	1.074	17963.527	0.0	823.6	
Lagged Flow (126)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	SW-OUT SUMP-307	POST-SITE OUTLET-TOTAL-T	53.784	0.163	123.126	0.0	19.1	
Lagged Flow (127)	10% AEP (1in10yr) - Primary: +20 %: 10% AEP (1in10yr) - Primary720	Lagged Flow	POST-SITE OUTLET-T2	POST-SITE OUTLET-TOTAL-T	45.448	0.107	1457.315	0.0	212.5	

APPENDIX 5 FLOOD RISK REPORT