

Document Owner	Executive Manager Customer Delivery
Document Contacts	Treatment Plant Permit to Work: Manager Treatment Plants Network Permit to Work: Manager Network Operations WIS Permit to Work: Manager Infrastructure Services Safety Permits: Head of Health Safety Environment and Quality

Contents¹

1.	Purpose	5
2.	Scope	5
2.1	Limitations and dependency on LOTO procedure	6
3.	Permit system governance	6
3.1	Permit systems	6
3.2	Permit governance	6
3.3	Beakon - electronic Permit to Work system	6
3.3.1	Beakon user access for Unitywater team members	8
3.3.2	Beakon user access for contractors and other users	8
3.4	Risk management requirements	8
4.	Permit to Work system	9
4.1	When a Network Permit is required	11
4.1.1	Network and WIS Permit types	11
4.2	When a Wamuran Irrigation Scheme (WIS) Permit is required	13
4.3	When a Wastewater Treatment Plant (WWTP) Permit is required	14
4.4	Network, WIS and WWTP interface requirements	15
4.4.1	Concurrent live permits	16
4.4.2	Multi-permit management plans (Network/ WIS)	17
4.5	Communication and coordination of planned works	18
4.6	Planning and pre-works	19
4.6.1	Site inspection	19
4.6.2	Unattended sites	19
4.6.3	Personnel and resources	20
4.6.4	Complex works scheduling	20
4.6.5	Network peak demand and scheduling constraints	21

¹ This document and its contents are the property of Unitywater and are subject to copyright laws. No part of this document may be reproduced, distributed or transmitted in any form or by any means including photocopying, recording or other electronic transmission without the prior written consent of Unitywater.

4.6.6	External and third party works	21
4.7	Permit submission	24
4.7.1	Permit information requirements	24
4.7.2	Network permit work and outage times	24
4.7.3	Permit submission timing and confirmation	25
4.7.4	Permit submission rules	25
4.8	Process risk assessment and approval	26
4.8.1	Project meetings	26
4.8.2	Permit processing and assessment times	27
4.8.3	Permit approvals	27
4.8.4	Permit validity and duration rules	29
4.9	Customer notifications (Network/WIS)	30
4.10	Permit activation	31
4.10.1	Control Room requirements	32
4.10.2	Shutdown and outage management	32
4.10.3	Critical control system instruments and controls (Network/WIS)	33
4.10.4	Isolations	36
4.10.5	Monitoring during works	37
4.10.6	Temporary network changes (Network/WIS)	37
4.10.7	Stop work and resolution process	37
4.11	Permit amendments and changes	38
4.11.1	Permit amendments	38
4.11.2	Minor permit changes	38
4.11.3	Weather and operational disruptions	38
4.11.4	Permit cancellation	39
4.12	Permit completion	39
4.12.1	Water quality (Network)	39
4.12.2	Work completion and reinstatement	39
4.12.3	Permit close out	40
4.12.4	After hours completion (WWTP & WIS)	41
4.12.5	Commissioning and return to service (Network/WIS)	41
4.12.6	GIS inaccuracies and changes (Network/WIS)	41
4.13	Permit failure reporting	42
4.13.1	Planned network shutdown failures	42
4.13.2	Permit failures (WWTP and WIS)	42
4.13.3	Unactioned permits	43
5.	Safety Permit system	43

5.1	Safety Permit questions	43
5.2	Permit validity	43
5.3	Safety Permit types	44
5.3.1	Confined Space Entry Permit	44
5.3.2	Excavation Permit	45
5.3.3	High Voltage Electrical Work Permit	45
5.3.4	Hot Work Permit	45
5.3.5	Lifting Permit	46
5.3.6	Working at Heights Permit	46
5.4	Multiple Safety Permit requirements	47
6.	Roles and responsibilities	48
7.	Training and competency requirements	57
8.	Recordkeeping	57
9.	Definitions	58
10.	References and resources	62
11.	Appendices	63
	Appendix A: Permit process flow diagrams	63
	Appendix B: GIS change design map	65
	Appendix C: Description of Works Examples	66
	Example 1 – Simple Work Scope	66
	Example 2 – Multiple Work Scopes	66
	Example 3 – Multi-Day Work Scope	66
	Appendix D: Work and Outage Time Examples	67
	Example 1 – Loss of Water	67
	Example 2 – Sewage Pumping Station (SPS) Pump Down	67
	Example 3 – Reservoir Work	68
	Example 4 – Water Pumping Station (WPS) Filling Reservoir	68
	Appendix E: Multi-Permit Management Plan Examples	69
	Example 1 – Permanent DMA Rezone	69
	Example 2 – SPS Renewal	69
	Example 3 – Reservoir Renewal	69
	Example 4 – Staged Replacement of TWM	69
	Appendix F: Process risk ratings	70
	Appendix G: Maps and shutdown plans	72

Example – Shutdown plan details section	72
Example – Shutdown plan	73
Example – Maps – Identify property type	74
Example – Maps – Legend	75
Example – Shutdown plan – Map with outage properties	76
Example – Shutdown plan – Back feed and test hydrants	77
Work Map Example	80

1. Purpose

This procedure outlines the requirements for planning, approving, undertaking and completing work under Unitywater's Permit to Work system.

It applies to:

- work on Unitywater's water, sewer and recycled water networks, and associated infrastructure
- work performed within Wastewater Treatment Plants (WWTPs)
- work performed within Recycled Water Treatment Plants (RWTPs)
- high-risk work that requires a Safety Permit.

The Permit to Work system is designed to ensure work is performed safely, operational risks are effectively managed, impacts to customers and the environment are minimised and Unitywater assets and infrastructure are protected from damage or disruption.

This procedure supports compliance with Unitywater's [Customer Delivery and the Customer Charter](#) commitments and other applicable legislative, regulatory and organisational requirements.

2. Scope

This procedure applies to:

- Unitywater team members.
- Contractors engaged by Unitywater to perform work on behalf of Unitywater.
- Third party contractors undertaking works under an approved Unitywater development application where the works may affect Unitywater network assets.
- Third party contractors not engaged by Unitywater where the works may affect Unitywater network assets, infrastructure, operations or services.

What this procedure covers

This procedure outlines the requirements for:

- determining when a Permit to Work or Safety Permit is required
- obtaining and managing permits in Beakon
- completing risk assessments associated with permitted work
- planning and coordinating works that may impact Unitywater assets, operations or customers
- managing network shutdowns, outages and operational impacts
- defining permit roles, responsibilities and authorities
- managing permit amendments, cancellations and close out requirements
- maintaining safe separation and coordination of work activities.

Exclusions

This procedure does not apply to work areas that have been formally handed over to a Principal Contractor (PC). In these circumstances, the Principal Contractor's permit system applies until the work area is handed back to Unitywater.

Related exemptions

Permit exemptions and permit-exempt activities are detailed within the relevant permit type sections of this procedure.

2.1 Limitations and dependency on LOTO procedure

This procedure does not authorise isolation of plant or equipment. Where isolation is required, it must be undertaken in accordance with [Pr8182](#) - Isolation – Lock Out Tag Out (LOTO) Procedure.

3. Permit system governance

3.1 Permit systems

Unitywater uses two permit systems within Beakon to manage work activities:

1. **Permit to Work System** – used to manage work that may affect Unitywater's network, treatment plant operations, assets, infrastructure or customers. Refer to Section 4 Permit to Work system.
2. **Safety Permit System** – used to manage specific high-risk work activities that require additional controls. Refer to Section 5 Safety Permit system.

Depending on the scope of work, one or both permit systems may apply.

3.2 Permit governance

All permits must be approved prior to commencement of work. Permit approvals are based on risk assessment, operational impact and system requirements.

Permits must remain valid for the period specified on the permit. Permit validity does not override the requirements for safe execution or operational control.

3.3 Beakon - electronic Permit to Work system

Unitywater uses Beakon, an electronic permit to work software application, to manage the end-to-end permit to work process.

Beakon is used to administer and control all permit activities, including:

- permit applications and approvals
- permit validity dates and times
- work planning and shutdown coordination
- permit risk assessments and reviews
- permit conflict identification and resolution
- contingency planning and special conditions
- associated electronic documentation e.g. electronic shutdown (eSD) plans.

The system provides a controlled workflow for the management, approval, tracking and lifecycle of work permits and Safety permits.

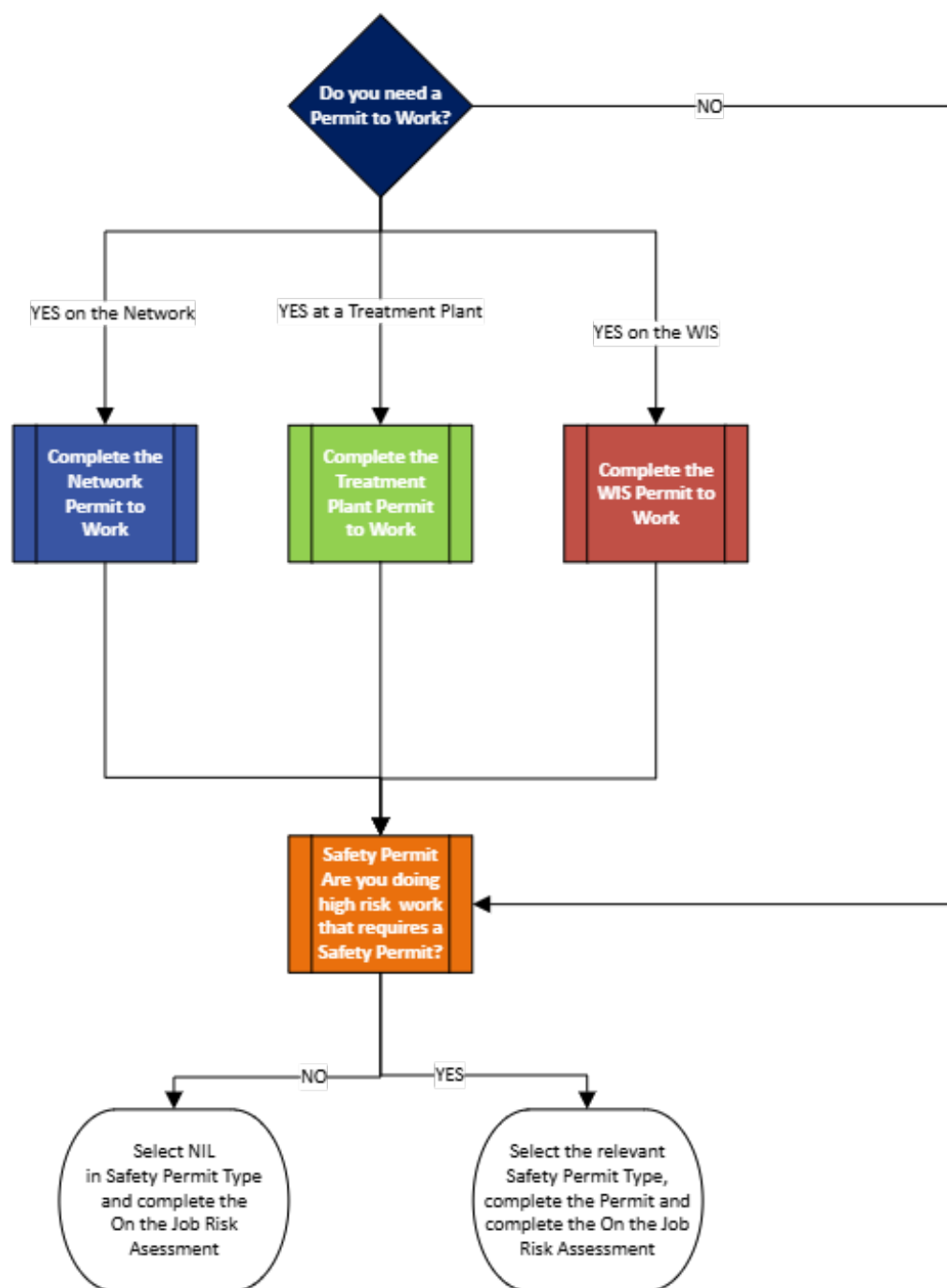


Figure 1: Permit to Work system and Safety Permit system (source file: A9601147)

3.3.1 Beakon user access for Unitywater team members

To create, manage, review or approve permits in Beakon, users must first request access to Beakon via a LogIT request.

Search **Permit to Work Request** in the search function and complete the form.

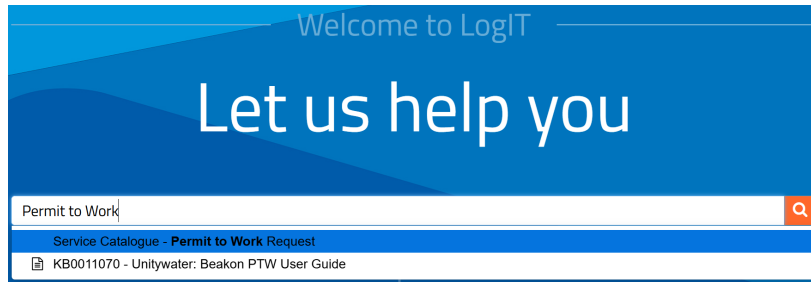


Figure 2: LogIT request

3.3.2 Beakon user access for contractors and other users

Contractors and other users must email pni@unitywater.com to request access to Beakon in order to raise or view permits.

Access to Beakon will not be granted unless the relevant training has been completed in Sitepass.

3.4 Risk management requirements

All Permit to Work and Safety Permits require an on-the-job risk assessment to ensure work is performed safely in accordance with [Pr9306](#) - Risk Management Procedure.

An on-the-job risk assessment must be completed at the work location prior to commencing work and is used to identify hazards associated with the work and implement appropriate controls.

Unitywater team members must complete the on-the-job risk assessment via the Safety Permit in Beakon.

Contractors may either:

- attach their own risk assessment to the safety permit, or
- complete the on-the-job risk assessment via the Safety Permit in Beakon where a contractor's risk assessment is not provided.

External and third party works (refer to Section 4.6.6 External and third party works) are exempt from the requirement to provide an on-the-job risk assessment.

Refer to the relevant Beakon user guides for instructions on completing an on-the-job risk assessment in Beakon.

4. Permit to Work system

The Permit to Work (PTW) system provides a structured process for planning, assessing, approving, coordinating, executing and completing work that may impact Unitywater's assets, infrastructure, operations, customers, or the environment.

The PTW system consists of three separate approval permit approval areas:

1. **Network Permits** – for work affecting Unitywater's water, sewer and recycled water networks.
2. **Wamuran Irrigation Scheme (WIS) Permits** – for work performed within the Wamuran Irrigation Scheme including the recycled water network and the Recycled Water Treatment Plants.
3. **Wastewater Treatment Plant (WWTP) Permits** – for work performed within wastewater treatment plants.

All three permit approval areas follow the permit to work process described within this procedure. Additional requirements may apply depending on the operational area, asset type and risk associated with the work.

Where a work activity requires a permit, the applicable permit must be obtained and approved prior to commencement of works.

The Permit to Work system is structured across the following lifecycle stages:



Figure 3: Permit to Work lifecycle

4.1 When a Network Permit is required

A Network Permit is required for all work on Unitywater's water and sewer network assets unless it is listed as exempt in this section.

The purpose of the Network Permit is to ensure work activities are planned, assessed and coordinated to minimise risks to personnel, network operations, service continuity, customers and regulatory obligations.

The Network Permit follows the permit to work process described within this procedure and is submitted using the Network Permit form in Beakon.

Where a work activity is not identified as an exempt activity in this section, a Network Permit must be obtained prior to commencement of works.

The following activities are exempt from the requirement to obtain a Network Permit:

- **Property maintenance works** that do not affect network assets or operations including activities such as cleaning, gardening and general facilities maintenance.
- **Approved planned maintenance** activities performed by Unitywater Mechanical & Electrical (M&E) Technicians are listed on the Approved Planned Works List which can be supplied on request by emailing planning@unitywater.com or pni@unitywater.com. Activities not listed on the Approved Planned Works list require a Network Permit.

4.1.1 Network and WIS Permit types

Network and WIS activities use the same permit types within Beakon except for the Instant Permit. The applicable permit type is determined by the nature of the work being undertaken and the potential impact to Unitywater assets, infrastructure, operations or service delivery.

Examples of work activities and permit types are provided in Appendices

Appendix A: Permit process flow diagrams.

Table 1: Network and WIS Permit types

Network/WIS Permit type	When required	Examples	Notes
Proximity Works Permit	• Used when work is undertaken near Unitywater assets with no intention to interfere with infrastructure, flows or functionality.	• Locating a pipe. • Working adjacent water, sewer or recycled water network infrastructure.	• Some work scopes may be available in Instant Self Approved Permits.

Network/WIS Permit type	When required	Examples	Notes
Minor Works Permit	Used where work physically interacts with Unitywater assets but does not impact operations, flows or service delivery.	- Single meter replacements. - Infiltration detection (e.g. smoke testing). - Opening switchboards for inspection. - Sewer cleaning and CCTV inspection without flow management or shutdown. - Work on online or standby equipment while still energised or in operation. - Hot tapping (less than 300mm).	Some work scopes may be available under Instant Self Approved Permits.
Planned Shutdown Permit	Used where a work scope is known to, or has the potential to, impact operations, flows, system functionality or service continuity.	- Changes to normal system operation. - Works that impact continuity or quality of service. - Works that affect or have the potential to affect network flows. - Works that affect or have the potential to affect SCADA or control systems. - Valve operations, including valve exercising. - SCADA set point changes.	
Trial Shutdown Permit	Used where there is a need to test, validate or confirm operational limitations, performance or system response under controlled conditions.	- Sewage Pumping Station (SPS) detention testing. - Water pressure drop testing. - Isolating reservoirs or equipment for testing purposes. - SCADA set point or bulk water operational changes.	Water pressure drop testing does not include full system shutdown. Where a complete water outage is required, a Planned Shutdown Permit must be used, including all required customer notifications
Network Information Request Permit	Used to request an assessment for future works to understand operational constraints, isolation complexity and system limitations during early planning stages.	- Bulk water functionality assessments. - Network limitation and constraint reviews. - Determining maximum allowable equipment offline durations.	- No physical works are undertaken under this permit type. - This permit is used to inform the planning of future outage or shutdown permits and should be referenced when submitting subsequent permit applications

Network/WIS Permit type	When required	Examples	Notes
Reactive Shutdown Permit	Used for unplanned or emergency works required to manage reactive incidents affecting operations or service delivery.	Main breaks.	These permits are created and managed by the Control Room in response to operational incidents and events. Reactive Shutdown Permits are not used for planned works or scheduled outages.

4.1.1.1 Instant self-approved permits

Instant Self-Approved Permits are available for selected Network low-risk work scopes that have been pre-approved in accordance with this procedure. This functionality is not a separate permit type. It enables eligible work to be completed under a Proximity Works Permit or Minor Works Permit, with approval automatically granted through the Beakon mobile application.

Permit Applicants must confirm that the selected work scope is eligible for instant approval before attending site. If the required work scope is not available in Beakon as an instant self-approved option, work must not commence until the appropriate permit approval has been obtained.

Examples of eligible work scopes include:

- single water meter replacement (25 mm or less)
- non-intrusive work
- opening switchboards for visual inspection only
- sewer house branch connection to reticulation pipe (<150 mm)
- infiltration detection (smoke testing)
- pre-approved low-risk project work with a unique project number.

4.2 When a Wamuran Irrigation Scheme (WIS) Permit is required

A Wamuran Irrigation Scheme (WIS) Permit is required for all work on Unitywater's WIS network assets unless it is listed as exempt in this section.

The purpose of the WIS Permit is to ensure work activities are planned, assessed and coordinated to minimise risks to team members, irrigation operations, service continuity, water quality and regulatory obligations.

The WIS Permit follows the Permit to Work process described within this procedure and is submitted using the WIS Permit Form.

Where a work activity may impact the operation of the Wamuran Irrigation Scheme, a WIS Permit must be obtained prior to commencement of works.

The following activities **are exempt** from the requirement to obtain a WIS Permit:

- Network exemptions listed in Section 4.1 When a Network Permit is required.
- WWTP exemptions listed in Section 4.3 When a Wastewater Treatment Plant (WWTP) Permit is required.
- General, routine plant operations conducted by WIS team (e.g. safety shower checks, daily tests, chlorine gas drum exchange).

4.3 When a Wastewater Treatment Plant (WWTP) Permit is required

A Wastewater Treatment Plant (WWTP) Permit is required for any work that may affect WWTP assets, operations, or compliance, whether within the treatment plant or on associated assets such as effluent pipelines, wetlands, disposal infrastructure and ocean outfalls.

The purpose of the WWTP Permit is to ensure work activities are planned, assessed and coordinated to minimise risks to personnel, treatment plant operations, the environment and regulatory compliance.

The WWTP Permit follows the Permit to Work process described within this procedure and is submitted using the WWTP Permit form.

Where a work activity is not listed as a permit exempt task in this section, a WWTP Permit must be obtained prior to commencement of works.

The following activities are exempt from the requirements to obtain a WWTP Permit, provided they are undertaken by competent persons using the applicable procedures, controls and equipment.

Table 2: WWTP Permit exempt tasks

Category	Examples of exempt tasks
Routine plant operation and monitoring	• Operating Treatment Plant assets as designed (all protections in place, biogas SMS compliance). • Onsite lab testing. • Sampling. • Cleaning screens/filters/traps. • Low-risk inspections. • Manual handling (low level). • Rubbish/biosolids/grit removal. • General workshop hand tool work. • Pressure washing. • Forklift operation (licensed/checklist). • Gantry crane operation (trained/checklist). • Chlorine drum/bottle changes. • Cleaning/operating equipment with isolation under Standard Operating Procedure. • Routing control system work that can be performed without rebooting the Programmable Logic Controllers (PLC) or disrupting the control network.

Category	Examples of exempt tasks
Property and facility maintenance	• Mowing. • Tree lopping/gardening. • Changing light bulbs. • Plumbing. • Painting. • Fence and gate repairs. • Pest control. • Cleaning offices. • Air conditioning maintenance in offices (unless working at heights). • Road maintenance (no excavation).
Routine safety equipment checks	• Fire extinguisher inspections. • First aid kit checks. • Safety shower and eyewash station checks.
Inspections and site visits (no Treatment Plan equipment interaction)	• Inspectors. • Engineers (markups/ punch listing/ scoping). • Regulators. • Auditors.
General site activities	• Courier pick-up/drop-off. • Vehicle access in plant. • Emergency work (with approved escalation process).

Specific activities requiring a WWTP Permit and any permit exemptions are subject to review and confirmation by the relevant WWTP operational team.

4.4 Network, WIS and WWTP interface requirements

Work activities may impact assets or operations managed by Network Operations, Wastewater Treatment Plants (WWTP) and/or the Wamuran Irrigation Scheme (WIS). Where these interfaces exist, all affected operational areas must be consulted and any required permits obtained prior to commencement of works.

Asset ownership and operational responsibility, rather than physical location, determine permit requirements. Assets associated with Network Operations, WWTPs and the WIS may extend beyond, or be located within, the boundaries of another operational area.

Examples include, but are not limited to:

- Sewage Pumping Stations (SPS) located within WWTP sites
- wastewater and effluent transfer systems between treatment plants
- recycled water infrastructure associated with the WIS
- effluent transfer pipes
- wetlands and effluent disposal infrastructure
- ocean outfalls and associated infrastructure
- shared operational and control system interfaces.

Where a work activity has the potential to impact the assets, operations, capacity, process performance, environmental compliance or service delivery of another operational area, an permit may also be required from that operational area.

Examples include, but are not limited to:

WWTP activities impacting Network or WIS operations

- Restricting, diverting or stopping inflows to a WIS recycled water treatment plant to facilitate maintenance or operational activities.
- Isolating or shutting down infrastructure that receives network flows.
- Changes affecting effluent transfer, disposal or recycled water supply arrangements.

Network activities impacting WWTP or WIS operations

- Flow diversions that redirect flows from one treatment plant to another alter flows to a WWTP.
- Changes to network operations that impact treatment plant capacity, process performance or effluent management.

WIS activities impacting Network or WWTP operations

- Changes to recycled water storage, transfer or distribution arrangements.
- Activities affecting effluent acceptance, reuse capacity or treatment plant operational requirements.

The Permit Applicant is responsible for identifying potential impacts to Network, WWTP and WIS assets and operations and obtaining all required permits prior to commencing work.

Permit Approvers are responsible for verifying that all relevant operational interfaces have been considered and that any associated permits have been obtained and approved prior to approving the permit. Where a Permit Approver identifies potential impacts to another operational area, the Permit Approver must require the Permit Applicant to obtain the relevant permit(s) before approval can be granted.

Where multiple permits are required:

- all related permits must be linked within Beakon by the permit approver
- approval from each affected operational area must be obtained prior to the commencement of work
- permit approvers must verify the status of any dependent permits before approving the permit
- where permit notice periods differ, the longest notice period applies.

4.4.1 Concurrent live permits

A Permit Holder may hold multiple live permits where required to undertake an approved scope of work or where permits are required across multiple operational areas in accordance with Section 4.4 Network, WIS and WWTP interface requirements.

Prior to issuing multiple live permits to the same Permit Holder, the Permit Approver shall consider:

- the complexity of work
- permit dependencies and operational interfaces
- the potential for conflicting controls
- the Permit Holder's capacity to effectively manage the work
- supervision and coordination arrangements
- impacts to plant performance, network operations and service delivery.

The Permit Approver is responsible for determining whether multiple live permits can be safely managed by the Permit Holder.

4.4.2 Multi-permit management plans (Network/ WIS)

A multi-permit management plan is required for Network and WIS works where activities are staged, program-based, or require multiple related permits. This requirement does not apply to WWTP permits unless specifically identified by the Permit Approver or relevant operational manager.

The purpose of the multi-permit management plan is to ensure permit boundaries, operational interfaces, outages and work activities are clearly defined, coordinated and controlled to maintain network operability and service delivery.

The multi-permit management plan may be used to support:

- identification and management of permit conflicts and dependencies
- permit scheduling and coordination
- SMS notifications
- outage table requirements
- operational planning notifications
- isolation planning and coordination.

Plans must be developed in consultation with the Permit Applicant, Isolation Planner, Permit Approver and other relevant stakeholders.

Refer to Appendix E: Multi-Permit Management Plan Examples.

4.4.2.1 Renewal program works and GIS layers (Network only)

For Network program or renewal works affecting multiple assets, GIS layers must be developed to support planning, permit delineation and operational coordination.

GIS layers are used to:

- define and optimise permit boundaries
- support multi-permit management plans
- identify operational interfaces and permit dependencies
- minimise disruption to network operations and customers
- prepare accurate maps and supporting information for permit applications.

Examples of program and renewal works include:

- maintenance hole replacement and coating programs
- Sewer Gravity Mains Replacement Program (SGMRP)
- pipe relining programs
- Valve and Hydrant Replacement Program (VHRP)
- Trunk Valve Inspection Programs (TVIP)
- Fire Flow Testing (FFT)
- Mains cleaning programs
- CCTV inspection and cleaning works.

4.5 Communication and coordination of planned works

Planned works must be communicated and coordinated to ensure the safe management of activities that may affect Unitywater operations, assets, customers or the environment.

Communication processes support coordination between operational teams, including:

- Control Room
- Isolation Planning
- Network Engineering
- Wastewater Treatment Plants (WWTP)
- Wamuran Irrigation Scheme (WIS)
- Customer Service
- Other relevant stakeholders.

To support operational awareness:

- permit information must be maintained accurately within Beakon
- permits must be approved prior to commencement of work
- permit schedules and conflict reviews must be completed in accordance with the requirements of the relevant operational area
- associated documentation, including shutdown plans, must be attached to and referenced within permits where applicable.

Potential conflicts between planned works must be identified, assessed and managed to maintain safe separation between activities and protect the operational integrity of Unitywater assets and services

For Network Permits, conflict identification is supported through Beakon's automated conflict management functionality.

For WIS and WWTP permits, conflict identification must be undertaken manually through review of permit information, Beakon dashboards operational schedules and consultation with affected operational areas.

Permit Approvers are responsible for ensuring actual or potential conflicts with other planned works, outages, isolations or operational activities have been identified and appropriately managed prior to permit approval.

4.6 Planning and pre-works

Prior to submitting a Permit to Work application, the Permit Applicant must ensure the proposed work is fully defined and suitable for assessment.

This includes:

- confirming the scope, methodology and intended outcome of the work
- verifying asset information, GIS records and available drawings
- identifying interfaces with Network, WWTP or WIS assets
- confirming access requirements and site constraints
- identifying potential operational, safety and customer impacts
- determining whether additional permits, approvals or stakeholder engagement are required.

Where discrepancies exist between site conditions, GIS records or as-constructed information, these must be investigated and resolved prior to submission of a permit application.

Planning activities must be sufficiently developed to allow accurate permit assessment, risk evaluation and scheduling.

4.6.1 Site inspection

Site inspections prior to submitting a Permit to Work should be undertaken to confirm that GIS maps, drawings and asset information accurately reflect site conditions and that equipment is operable and accessible.

Site inspections help reduce the risk of rework, permit delays, shutdown failures and impacts to customers and operations.

Where undertaken, site inspections should also consider the operational environment, including:

- live operational conditions (e.g. treatment plant processes, active network systems)
- access restrictions or safety constraints on operational sites
- temporary operational arrangements not reflected in GIS or drawings
- any factors that may influence safe execution of the planned work.

4.6.2 Unattended sites

Where practicable, the Permit Applicant should contact the Permit Approver prior to attending an unattended site to discuss the planned scope of work and confirm site conditions. This is preferred due to the remote nature of these sites and the potential for works not to proceed or permits not to be approved.

Where there is uncertainty regarding the safe completion of isolations without a relevant Unitywater team member present, the relevant Unitywater team member must attend the site to assist with isolations in accordance with [Pr8182](#) - Isolation – Lock Out Tag Out (LOTO) Procedure.

Where there is any doubt regarding the adequacy of controls or the safety of the isolation process, the relevant Unitywater team member must attend the site prior to commencement of works.

4.6.3 Personnel and resources

The Permit Holder must ensure all personnel, equipment, contractors and resources required to safely complete the work scope have been identified, arranged and are available prior to permit commencement.

All resources must be suitable for the proposed work and available for the full duration of the permit activity.

Examples of personnel and resources that may be required include:

- electricians
- valve operators
- tankers
- traffic management
- specialist contractors
- plant and equipment.

Where specific personnel, equipment or technical resources are required as a condition of permit approval, the Permit Holder must ensure these requirements are met prior to commencement of works.

In some circumstances, the Permit Approver or technical specialists may specify that certain personnel or resources are mandatory for specific activities. Where this occurs, it is the responsibility of the relevant Unitywater Officer to coordinate and provide those resources where they are not the responsibility of the Permit Holder.

4.6.4 Complex works scheduling

Works assessed as having a **High** process risk rating in accordance with Appendix F: Process risk ratings should, where practicable, be scheduled to commence between Monday and Wednesday. This reduces the risk of operational issues extending into weekends or public holidays when resource availability may be reduced.

High-risk works identified through operational planning and scheduling processes should be reviewed to ensure adequate operational support, contingency planning and recovery arrangements are available.

Where high process risk works are scheduled outside this timeframe, the Permit Applicant must consider:

- resource availability
- contingency and recovery arrangements
- specialist support requirements
- operational impacts
- the potential consequences of delayed restoration activities.

The Permit Approver must be satisfied that appropriate controls and contingency arrangements are in place prior to approving the permit.

4.6.5 Network peak demand and scheduling constraints

Planned works affecting network flows, inlet flows or customer services must be scheduled to minimise impacts on network demand where applicable.

Works should be planned to avoid peak demand periods unless operationally required and approved later through the permit process.

Preparation and pre-work activities may occur during peak periods provided they do not impact:

- network flows
- pressure
- customer service levels.

Table 3: Peak demand periods

Network	Morning Start	Morning End	Afternoon Start	Afternoon End
Water	05:00	08:00	16:00	20:00
Sewer	05:00	09:00	16:00	20:00

4.6.5.1 WWTP considerations

Works affecting WWTP inlet flows should be scheduled outside sewer peak demand periods where practicable.

4.6.5.2 WIS considerations

Works affecting recycled water supply, transfer, storage or distribution within the Wamuran Irrigation Scheme (WIS) should be scheduled to minimise impacts on customer supply requirements, water availability and seasonal demand.

Permit Applicants must consult the WIS Recycled Water Scheme Coordinator, or delegate, when planning works that may affect customer supply, storage levels or scheme operations.

4.6.6 External and third party works

4.6.6.1 Third party works – intake and assessment (Network/ WIS)

Third party work requests are works undertaken by organisations or individuals not engaged by Unitywater where activities may affect Unitywater Network or WIS assets, infrastructure, operations or services. This includes, but is not limited to:

- Energex power outages
- Before You Dig Australia (BYDA) related service isolations associated with civil construction works
- Council works
- Developer works
- Transport and Main Roads (TMR) works
- Works within leased Unitywater sites, including telecommunications infrastructure
- Railway directional drilling and associated construction activities.

Third party work requests must be submitted to the relevant operational area for assessment.

Table 4: Third Party works contacts

Operational Area	Contact
Network (drinking water and sewer)	pni@unitywater.com
Wamuran Irrigation Scheme (WIS) (recycled water)	wisrtoperations@unitywater.com

The operating area identified in Table 4 is responsible for assessing the proposed works for potential impacts to Unitywater assets, operations and service and determining whether a Permit to Work or additional controls are required.

Where the proposed works may impact another operational area, the affected operational area must also be consulted as part of the assessment process.

Where a third-party requests onsite assistance from Unitywater, the request must be referred to privateworks@unitywater.com for commercial assessment and quotation.

4.6.6.2 Development works (Council, TMR, developers and external parties)

Development works include works undertaken by developers, councils, Transport and Main Roads (TMR), private certifiers and other external organisations that involve modification, connection to, or construction of Unitywater Assets.

The following information must be provided to pni@unitywater.com for review:

- evidence of Unitywater approval
- name of the responsible Unitywater Officer
- GIS mapping identifying the work area, proposed network changes and affected assets (refer to Appendix B: GIS change design map for example format)
- proposed work dates and duration
- anticipated network impacts
- organisation and site contact details.

The Isolation Planner will review the proposed works and determine the appropriate permit management approach. Depending on the scope, complexity and number of permits required, the Isolation Planner may:

- create and manage permits on behalf of the requestor, or
- arrange access to Beakon for the requestor to manage their own permits, subject to training and competency requirements.

Where development works are undertaken under a Proximity Works Permit, the Isolation Planner must assess whether contingency shutdown arrangements are required, particularly where critical infrastructure may be affected and services cannot be restored within one (1) hour.

4.6.6.3 Work at leased sites

Work undertaken on leased Unitywater sites may be completed without a Network Permit where activities are expressly permitted under the lease agreement and do not affect Unitywater assets, operations or access requirements.

These activities are typically routine “walk-in, walk-out” activities undertaken by the lessee.

A Network Permit is required where works:

- impact or have the potential to impact Unitywater assets
- restrict access to Unitywater assets or infrastructure
- introduce additional operational or safety risks.

Examples include:

- crane operations that restrict site access
- excavation works
- use of Elevating Work Platforms (EWPs).

Where works are not covered by the lease agreement, a conditional approval letter must be obtained from facilities@unitywater.com, and submitted with the permit request to pni@unitywater.com together with:

- relevant maps and drawings
- proposed work dates, times and duration
- site contact details
- any other supporting documentation required for assessment.

4.6.6.4 Third party connections (private certifiers)

Third party connection works are typically simple sewer connections completed under the Unitywater Accreditation Network Connection (ANC) process.

Network Permit requests must be submitted through Beakon.

4.6.6.5 Third party approvals

Where works are undertaken within third-party controlled areas, including Transport and Main Roads (TMR) corridors, local council property, national parks or private property, all required approvals must be obtained prior to commencement of works.

The Permit Holder is responsible for obtaining and verifying all required approvals.

Evidence of approvals must be attached to the permit application and recorded in Beakon prior to permit activation or commencement of works.

No works may proceed until all required approvals have been obtained.

4.7 Permit submission

Permit applications must contain sufficient information and be submitted in accordance with required timeframes and system rules to enable safe assessment, coordination, approval and execution of works.

4.7.1 Permit information requirements

Permit applications must contain sufficient and accurate information to enable assessment, approval coordination and safe execution of the proposed works.

All permit applications must be completed in Beakon and include, at a minimum:

- a clear work description
- the location of the works
- the proposed work scope and methodology
- the assets or infrastructure affected, where known.

Permit information must be sufficiently detailed to allow the Permit Approver to assess:

- the nature and extent of the proposed works
- potential operational impacts
- potential customer impacts
- any shutdown, isolation or service interruption requirements
- any interface requirements with Network, WWTP or WIS operations.

Where applicable, additional supporting information may be required, including:

- maps or drawings
- risk assessments
- commissioning plans
- flow management or outage planning information
- GIS changes or as-constructed information
- any other documentation requested by the Permit Approver or operational representative.

Permit applications that are incomplete, inaccurate or unclear may be returned for amendment prior to approval.

Examples of acceptable permit descriptions are provided in Appendix C: Description of Works Examples.

4.7.2 Network permit work and outage times

Network Permits must include both work times and outage times, where applicable.

- **Work times** identify the period during which the approved works are being undertaken.
- **Outage times** identify the period during which network operations, asset functionality or customer services are affected. Work and outage times must accurately reflect all stages of the activity, including any pre-operational activities, network outages, restoration activities and post-outage works.

The Permit Holder is responsible for confirming permit work times. Responsibility for outage times must be assigned in accordance with the applicable permit type and operational requirements.

Accurate work and outage times are necessary to support conflict management and the communication of planned works.

Where work and outage times are unknown at the time of permit submission, the permit may be submitted without dates by selecting “No” in the “Are work dates known?” field. Once approved, the permit will display an **Unscheduled** status until work and outage times have been confirmed. The Permit Holder must submit a date amendment request when work and outage times are known and obtain approval prior to commencing works.

Examples of work and outage time arrangements are provided in Appendix D: Work and Outage Time Examples.

4.7.3 Permit submission timing and confirmation

Permit applications must be submitted with sufficient lead time to allow assessment, coordination and approval prior to commencement of works.

Minimum notice requirements:

- **Network and WIS works:**
 - Proximity Works Permit: minimum three (3) business days
 - Minor Works Permit: minimum five (5) business days
 - Planned Shutdown Permit: minimum ten (10) business days
 - Trial Shutdown Permit: minimum ten (10) business days
 - Network Information Request Permit: discuss with Isolation Planner.
- **WWTP works:** may be submitted on the day of works but must be approved prior to commencement. Works that may impact treatment processes, environmental compliance, regulatory obligations or plant operations must be discussed with relevant stakeholders prior to permit submission in accordance with Section 4.8.1 Project meetings.

All permits must be approved prior to commencement of works.

4.7.4 Permit submission rules

All permit to work applications must be submitted via Beakon.

Applications must be fully completed prior to assessment and approval.

Incomplete or unclear applications will not be processed and may be returned to the Permit Applicant for amendment.

If additional information is required, the permit will be placed in **Request for Information** status. Assessment will resume once the requested information has been provided. The applicable notice period may restart from the date the information is received.

4.8 Process risk assessment and approval

Permit applications are subject to process risk assessment by the Permit Approver to determine whether the proposed works can proceed safely, in compliance with operational requirements and with acceptable risk to operations, assets, customers and the environment.

A process risk rating is applied during assessment to determine the level of review, approval and controls required.

All permits are assigned one of the following risk ratings:

- Low Risk
- Medium Risk
- High Risk.

The risk rating is determined based on the potential impact to:

- operational systems
- safety
- environment
- compliance
- customers
- critical assets.

Refer to Appendix F: Process risk ratings for specific scenarios.

Note: The assessment process is undertaken in addition to the standard safety risk assessment required for all permitted work. Refer to [Pr9306](#) - Risk Management Procedure for further requirements.

4.8.1 Project meetings

Project meetings are required prior to permit approval for selected work types to support coordination, risk identification and confirmation of operational requirements.

Project meetings are required for:

- works assessed as having a High process risk rating in accordance with Appendix F: Process risk ratings
- complex or costly work scopes
- renewal program works and GIS layer updates.

The purpose of project meetings is to:

- confirm the work methodology
- identify operational risks and constraints
- determine shutdown and operational requirements
- identify customer and service impacts
- confirm roles and responsibilities.

Attendees may include relevant stakeholders such as:

- Permit Applicant and Permit Holder
- Permit Approver and Isolation Planner
- Unitywater Officer
- Network or Process Engineers
- Control Room representatives
- Treatment Plant representatives
- WIS representatives
- other relevant stakeholders.

Project meetings should be held sufficiently in advance to allow outcomes to be incorporated into permit planning and assessment. This requirement may be waived for emergency or incident response works.

4.8.2 Permit processing and assessment times

Permit assessment timeframes vary depending on the permit type and complexity:

Network and WIS Permits:

- Proximity Works Permit: three (3) business days
- Minor Works Permit (no shutdown plan): five (5) business days
- Planned Shutdown Permit (with shutdown plan): 10 business days
- Trial Shutdown Permit (with shutdown plan): 10 days
- Information Request Permit – timeframe to be confirmed with the Isolation Planner or WIS operational team.

WWTP Permits:

- Works assessed as having a High process risk rating in accordance with Appendix F: Process risk ratings - 10 business days. Additional time may be required where project meetings, stakeholder consultation or operational reviews identify further assessment requirements
- All other permits: five (5) business days.

Timeframes commence upon receipt of a complete and valid application. Incomplete or incorrect submissions may result in delays to assessment and approval. If additional information is required during assessment, the permit will be placed in **Request for Information** status. Once the requested information is received, assessment will recommence and the applicable timeframe may restart.

Where additional coordination is required (including project meeting outcomes), timeframes may be adjusted based on operational complexity.

4.8.3 Permit approvals

The Permit Approver is responsible for reviewing the Permit to Work to ensure the proposed work can be safely undertaken and that appropriate controls have been identified.

As part of the approval process, the Permit Approver must determine the appropriate permit boundary. The permit boundary defines the scope of work, work area, assets and/or locations that may be safely managed under a single Permit to Work.

When determining the permit boundary, the Permit Approver must consider:

- the nature and complexity of the work
- the risks associated with the work
- the work area and operational environment
- interactions with other work activities, including simultaneous operations (SIMOPS)
- the effectiveness of the proposed controls
- whether the scope of work can be safely managed under a single Permit to Work.

Where the Permit Approver determines that the proposed scope cannot be effectively managed under a single Permit to Work, the Permit Applicant must revise the permit scope prior to approval.

The permit boundary is independent of any isolation requirements. Isolation activities must be managed in accordance with [Pr8182](#) - Isolation – Lock Out Tag Out (LOTO) Procedure.

The Permit to Work must clearly identify the approved scope and any associated work areas, assets and/or locations covered by the permit.

The Permit Approver will review the permit and either:

- **Approve the permit:** whereby the Permit Approver and Permit Holder confirm the permit conditions and agree to comply with them. The permit and conditions cannot be modified without Permit Approver approval.
- **Request additional information:** and provide the Permit Holder with clear details of additional information or changes required before resubmission.

4.8.3.1 Instant self-approved permits (Networks/WIS)

Instant self-approved permits are a controlled exception to the standard Network Permit and WIS Permit approval process. They allow selected low-risk, pre-approved work scopes to be generated and approved automatically within Beakon.

Where an instant self-approved permit is not available for the required work scope, a standard Network Permit or WIS Permit must be obtained.

Examples of pre-approved work scopes include:

- replacement of a single water meter (25mm or less)
- non-intrusive site attendance
- opening switchboards for inspection only
- sewer hose branch connection to reticulation pipe (less than 150mm)
- infiltration detection (e.g. smoke testing)
- pre-approved low-risk project work with a defined project number.

Note: Work must not commence unless the permit has been successfully generated and approved within the application.

4.8.4 Permit validity and duration rules

Permit validity and duration must reflect the approved scope of work and be limited to the time reasonably required to safely complete the work.

Permit dates and times must accurately represent the approved work window and must not exceed what is required for the approved scope.

Permit duration must be actively managed to support:

- safe execution of works
- coordination of planned activities
- communication of operational impacts
- minimisation of operational disruption.

4.8.4.1 System validity

A permit is valid for the period specified on the permit from the date of issue.

Beakon does not override the stated validity period. At expiry, the permit automatically transitions from **Open** to **Closed** status.

During the validity period, permits may be amended or replaced where operational requirements change.

4.8.4.2 Operation Duration Controls (Network/ WIS)

Additional duration controls apply depending on the type of work being undertaken:

Shutdown Permit duration (planned/trial shutdowns)

Shutdown durations must be limited to the minimum time required to safely complete the approved work scope.

Shutdown periods must be actively managed during execution to:

- minimise network disruption
- maintain operational control
- ensure timely restoration of services.

Proximity and Minor Works Permits

Proximity and Minor Works Permits may remain open for extended durations where required to support delivery of the approved work scope.

However, duration must not exceed what is reasonably required to complete the approved works and must align with operational delivery requirements.

4.9 Customer notifications (Network/WIS)

Customer notifications associated with planned works must be managed in accordance with the applicable customer notification requirements, agreements and communication obligations relevant to the operational area.

This includes, but is not limited to:

- **Network Operations:** Unitywater's Customer Delivery and the Customer Charter.
- **Wamuran Irrigation Scheme (WIS):** Applicable Recycled Water Supply Agreements and WIS operational requirements.

Particular consideration must be given to sensitive and critical customers, including customers with life support or essential service requirements, hospitals, healthcare facilities, schools and critical commercial or industrial operations.

For Network planned interruptions, notification timeframes must be managed in accordance with the Customer Delivery and the Customer Charter, including:

- a minimum of two (2) business days' notice for planned interruptions
- a minimum of four (4) business days' notice for sensitive and critical customers.

The Permit Approver is responsible for identifying sensitive and critical customers that may be impacted by the proposed works and advising the Permit Applicant of any customer notification requirements.

The Permit Applicant and/or Permit Holder are responsible for ensuring all required customer notifications are completed prior to commencing work and for engaging the appropriate Unitywater support functions where required.

Planned outages affecting more than five hundred (500) properties or works with the potential to generate significant customer or community interest, must be referred to media@unitywater.com for review and determination of any communication requirements.

Where Media review is required, permit processing will not be completed until the review has been undertaken and any required actions have been addressed. Permit Applicants must allow sufficient time for Media review when scheduling works.

For assistance with customer notifications, customer engagement activities, or impacts to sensitive or critical customers, contact customer.relations@unitywater.com.

For WIS planned works, customer notifications must be undertaken by the WIS Recycled Water Scheme Coordinator or their delegate in accordance with the applicable Recycled Water Supply Agreement.

4.10 Permit activation

Permit activation is the process of placing an approved permit **live** in Beakon and authorising the commencement of work.

Permit Activation = Permit Live = Work Can Start

A permit must not be made live until all permit conditions, approvals, controls and pre-work requirements have been completed.

Prior to activating a permit and making it **live**, the Permit Holder must confirm:

- the permit has been approved in Beakon
- permit conditions and supporting documentation remain valid
- any operational requirements specified within the permit have been completed
- all pre-work activities have been completed
- required risk assessments have been completed
- all required isolations and controls are in place in accordance with [Pr8182](#) - Isolation – Lock Out Tag Out (LOTO) Procedure.
- required resources are available
- communication arrangements have been established.

Where required by the permit conditions, the Permit Holder must complete any required notifications or communications with the Control Room, operational representative or other nominated contact prior to activating the permit.

Once the permit has been activated and made **live**, work may commence and must be carried out in accordance with the approved permit conditions and associated controls.

The Permit Holder is responsible for ensuring ongoing compliance with permit conditions while the permit remains live.

For permits requiring live period management:

- **Permit Live Period** commences when the work party arrive on site and concludes when the work party leaves the site.
- **Outage Live Period** commences immediately prior to implementation of the outage and concludes once normal operations have been restored.

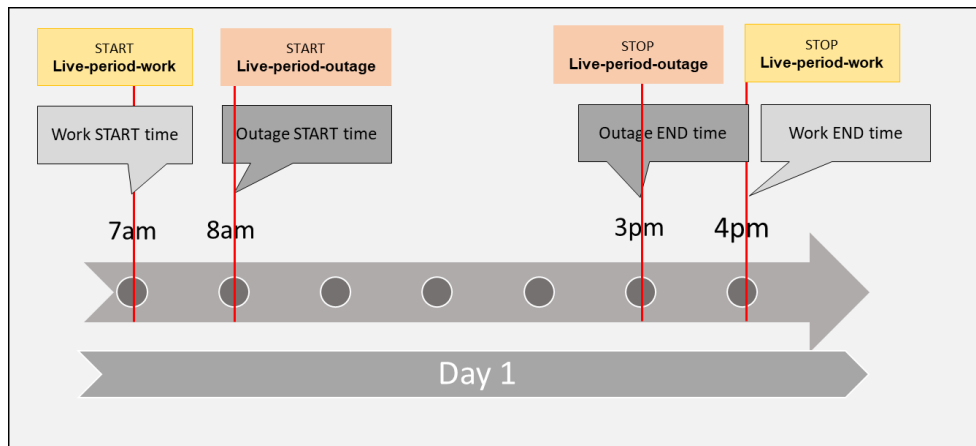


Figure 4: Example of when live period and live outage periods commence and conclude

Where a permit is designated **Self-Live Permit**, the Permit Holder is responsible for activating and deactivating the applicable live periods in Beakon.

Where a permit is designated a **Control-Live Permit**, the Permit Holder must contact the Permit Approver to request activation and deactivation of the applicable live periods.

The applicable live requirements will be specified within the permit conditions.

4.10.1 Control Room requirements

Some permits require coordination with the Control Room prior to commencing work.

Where Control Room involvement is required, the requirement will be specified within the permit conditions.

Where operational conditions change due to unplanned incidents, emergency works or other operational constraints, the Control Room may direct that work be delayed, suspended or rescheduled.

The Permit Holder must comply with all Control Room requirements and instructions specified within the permit prior to commencing work.

4.10.2 Shutdown and outage management

Planned shutdowns and outages must be assessed and coordinated to minimise impacts to customers, operations and regulatory obligations.

Shutdown planning must consider:

- customer impacts
- network resilience
- storage capacity
- environmental risks
- contingency arrangements
- outage duration.

Where required, a shutdown plan must be developed.

For Network works, shutdown plans must be developed and managed in accordance with [Pr11213](#) - Unitywater Valve Management Procedure.

During execution of the works, the Permit Holder must actively manage outage durations against approved outage windows and communicate potential delays as soon as practicable.

4.10.2.1 Shutdown plans

Shutdown plans are a separate record attached to Network Permits where shutdown activities are required, typically for Planned Shutdown, Trial Shutdown and Reactive Shutdown permits. Refer to Appendix G: Maps and shutdown plans for examples.

Approved shutdown plans must be followed as written. Deviations from an approved shutdown plans must not occur unless authorised by the appropriate Permit Approver.

Where a shutdown plan is supplied with a Network Permit, the following requirements apply:

- shutdown plans must be reviewed for accuracy prior to commencing work
- shutdown plans must be used onsite when supplied with a Network Permit
- shutdown plans must be followed in the exact sequence provided
- each step must be marked as completed when undertaken
- only one shutdown plan is permitted per Network Permit.

Deviation from shutdown plan

Deviation from a shutdown plan is only permitted following approval from the Control Room, Isolation Planner or Network Engineer.

Where a shutdown plan is deviated from, the Control Room or Isolation Planner must update the shutdown plan by adding, amending or removing steps.

The Permit Holder must refresh the shutdown plan in the field to reflect the updated version prior to continuing work.

4.10.3 Critical control system instruments and controls (Network/WIS)

Critical control system instruments and controls are operational measures used to manage network performance, maintain continuity of service and minimise risk to customers, team members, contractors, the environment and Unitywater assets during planned works. These controls support safe shutdown planning and execution by establishing the operational requirements for managing flows, storage capacity, isolations and temporary system configurations.

4.10.3.1 Detention tests

Detention testing may be used to determine the available storage capacity and maximum outage duration for a sewer catchment or sewage pumping station (SPS).

A detention test measures the time taken for an SPS to fill from low level to the nominated spill mitigation level after pumping has ceased.

The following requirements apply to detention tests:

- Detention test results are valid for two (2) years from the date of testing.
- Detention times must not be used where sewer plugs, critical level controls or other isolation arrangements prevent the full catchment or SPS storage volume from being utilised.
- Where practical, detention testing should be undertaken during dry weather conditions and outside peak network demand periods.
- Daytime and night-time detention periods may vary due to differences in network flows and should be considered during outage planning.
- Where the planned outage duration exceeds the available detention time, an approved flow management or tankering plan must be implemented.

4.10.3.2 Sewer Plugs and Critical Levels

Sewer plugs may be used as a temporary isolation method during planned network shutdowns and maintenance activities. The use of sewer plugs introduces an increased risk of sewer overflows and environmental or public safety impacts.

To manage the risk, critical levels must be established prior to installation of sewer plugs and maintained for the duration of the works.

The following requirements apply:

- Critical levels must be set at least 750mm below the lowest upstream overflow point or surface level.
- Critical levels must be continuously monitored while sewer plugs are installed to ensure the system remains within safe operating levels.
- All sewer plug isolation points must be clearly identified on the work map submitted with the permit application.
- Critical level calculations, monitoring requirements and associated controls must be included in the shutdown plan and supporting documentation.

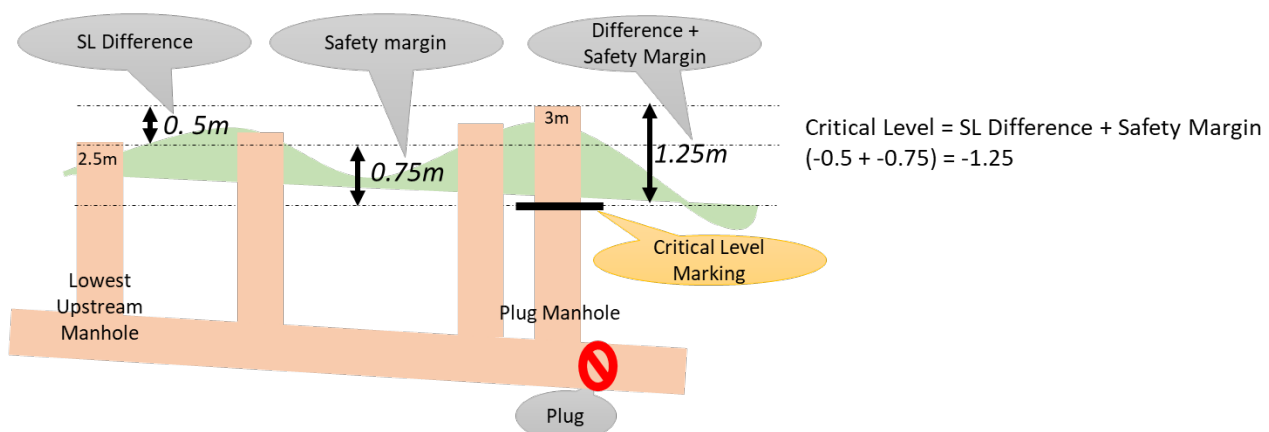


Figure 5: Example of sewer plug location

4.10.3.3 Tankering plans

Tankering is the use of tanker trucks to transport sewage between sections of the network during shutdowns where available system storage and detention capacity is insufficient to maintain safe operation.

Tankering is required where planned outage duration exceeds available sewer catchment storage, including SPS detention capacity and upstream system storage.

Calculating Tankering Volume

Tankering requirements are calculated based on detention time, working duration and system inflows.

Tankering plans are embedded within the shutdown plan and specify the required volume to be removed from the system per hour of the outage, commencing from time zero (0).

When work exceeds the approved outage duration, the tankering plan becomes invalid. Sewer catchment storage is used in conjunction with tankering capacity to support system balance. Once catchment storage is fully utilised, all additional inflows must be removed via tankering, or the system must be returned to service.

Tankering locations and responsibilities

Shutdown plans will nominate approved tanker pickup and discharge locations based on system locations and shutdown configuration.

The Permit Holder is responsible for:

- ensuring the required number and capacity of tankers is available
- confirming safe and suitable access at pickup and discharge locations
- considering tanker travel time and turnaround efficiency
- ensuring tankers can maintain required removal rates per hour
- managing environmental and noise impacts at all locations.

4.10.3.4 Water pressure drop tests

Water pressure drop tests are used to verify isolation integrity during planned shutdown activities without causing complete loss of water supply to customers.

These tests allow isolation boundaries to be confirmed while maintaining service to properties outside the isolation section.

The following requirements apply:

- **Trial Shutdown Permits** must be used for water pressure drop tests.
- **Inside isolated section:** Pressure within the isolated section is confirmed using a pressure gauge fitted to a hydrant at the highest point of the isolated section. Isolation is considered successful when a pressure drop is observed.
- **Outside isolated section:** Pressure outside the isolated section must be monitored to confirm there is no change in supply pressure. Each isolation boundary must be tested for back feed when closing each valves.

- **Failed test:** If a pressure drop test fails and cannot be resolved onsite, the Control Room or Isolation Planner must be contacted for direction, which may include valve verification or shutdown plan revision.
- **Water quality and closed valves:** Where closed valves are identified a flushing plan must be considered prior to reopening.
- **Water pressure drop tests and notifications:** Customer notifications are not required for pressure drop tests, as supply is not intended to be fully interrupted. If full shutdown is required, a Planned Shutdown Permit must be submitted and Customer Notification requirements apply.

4.10.3.5 Sewer bypass pumps

Where sewer bypass pumping is required to bypass sewage pumping stations (SPS) or sewage gravity mains (SGM), temporary flow must be managed in accordance with [Pr10661](#) - Specification for Sewer Temporary Pumped Bypass.

Flow management must ensure continuity of service and protection of downstream assets.

The following requirements apply:

- Flow management plans must be prepared and approved by an RPEQ engineer.
- Flow management plans must be submitted as part of the network permits application.
- A commissioning plan, including alarms configuration and monitoring requirements, must be developed and implemented prior to bypass activation.

4.10.4 Isolations

All isolations must be undertaken in accordance with [Pr8182](#) - Isolation – Lock Out Tag Out (LOTO) Procedure.

Work must not commence until all required isolations, and associated controls are in place.

Where required, isolation plans or other supporting isolation documentation must be completed and approved in accordance with the relevant operational requirements.

If there is any doubt regarding the adequacy of controls or the integrity of an isolation, work must not commence until the isolation has been reviewed by the relevant operational area.

4.10.4.1 Control system instrument isolations

Where SCADA input/output instruments are removed from service during planned works, the instruments must be isolated from the SCADA control system in accordance with [Pr8182](#) - Isolation – Lock Out Tag Out (LOTO) Procedure.

This is required to prevent unintended SCADA inputs that may result in uncontrolled system responses including inadvertent reservoir filling, pump operation or nuisance alarms.

Control system instruments include, but are not limited to:

- reservoir level instruments
- pressure instruments.

4.10.5 Monitoring during works

The Permit Holder, Permit Approver and Control Room will monitor plant and network conditions during execution.

The Permit Holder must:

- report any changes in conditions or scope to the Permit Approver
- request permit amendments where required
- escalate operational deviations immediately.

Continuous monitoring of plant performance is required during works.

Any unexpected condition changes must be escalated immediately.

4.10.6 Temporary network changes (Network/WIS)

Where temporary network changes are implemented and remain in place for more than one shift, the work permit must remain open for the entire duration that the temporary condition remains in place until the network is returned to normal operating configuration.

Temporary network changes include, but are not limited to:

- valve position changes (open/closed)
- District Metered Area (DMA) rezoning
- Pressure Reducing Valve (PRV), set point adjustments
- SCADA input/output changes including level or pressure adjustments
- use of temporary equipment, including sewer bypass pumping
- network diversions.

4.10.7 Stop work and resolution process

The Control Room or Permit Approver may stop or cancel work at any time where operational conditions, network performance, treatment processes or safety considerations indicate that the works should not continue.

Where a stop work direction is issued, work must cease immediately.

If the Permit Holder does not agree with the stop work decision, a 15-minute resolution period will apply to complete a joint risk assessment.

The following process applies:

1. A Stop Work dispute is raised and the 15-minute resolution period commences.
2. The Permit Holder notified the Unitywater Officer, where required.
3. The Permit Holder, Unitywater Officer and the Control Room or Permit Approver jointly identify and assess the risks associated with continuing the works.
4. The outcome of the risk assessment is reviewed.

If agreement cannot be reached within the 15-minute resolution period, the default outcome is the Stop Work direction remains in place.

4.11 Permit amendments and changes

Any change to the approved permit scope, timing, conditions or operational requirements must be managed through the approved amendment process.

Work must not proceed outside approved permit conditions.

The Permit Approver will determine whether the proposed change:

- may be managed through a permit amendment
- requires additional controls or conditions
- requires cancellation of the existing permit
- requires a new permit application.

4.11.1 Permit amendments

Where changes are required, the Permit Applicant or Permit Holder must submit an amendment request through Beakon. Amendments may require further assessment and may restart the applicable permit processing timeframes.

The amendment request must identify the proposed change and provide sufficient information to enable reassessment by the Permit Approver.

Changes to an approved permit must not be implemented until the amendment has been reviewed and approved.

4.11.2 Minor permit changes

Once a permit has been approved and a permit live period has commenced, permit details including the permit job description and work scope must not be changed except for approved minor permit changes.

Minor permit changes may include:

- adding an asset using the same isolation methodology
- minor clerical or contact detail corrections
- changes to a shutdown plan resulting from the network not responding as intended.

Any changes that affect the work scope, isolation methodology or operational risks are not minor changes and must be referred to the Permit Approver for reassessment and may require a new permit.

4.11.3 Weather and operational disruptions

Weather events or changing operational conditions may affect approved works and may require permits to be delayed, amended or cancelled.

Permit Holders are responsible for monitoring conditions in the lead up to the planned works.

Sewer works may be particularly affected following heavy rainfall events where catchments require time to return to normal operating conditions.

Where weather or operational conditions may affect the approved works, advice must be sought from the Control Room or Permit Approver.

Cancelled or delayed works will be communicated as soon as practicable.

4.11.4 Permit cancellation

A permit may be cancelled where:

- the approved work scope changes
- permit conditions are not complied with
- an emergency alarm or operational emergency occurs
- the Permit Approver or Permit Holder determines that the work cannot safely proceed
- any other circumstance arises that significantly changes the approved risk profile.

If a permit is cancelled:

- work must cease immediately, and
- the worksite must be made safe, and
- the permit must be closed in Beakon, and
- a new permit must be obtained where required before work recommences.

4.12 Permit completion

Permit completion includes completion of the approved work scope, reinstatement of normal operations, removal of temporary controls, permit close out and completion of any required post-work activities.

Permits must not be closed until all work activities have been completed and all permit conditions satisfied.

4.12.1 Water quality (Network)

Where work has the potential to impact drinking water quality, the Permit Holder must ensure applicable water quality controls are implemented in accordance with [Pr9032](#) - Procedure for Managing Water Quality During Mains Commissioning and [F9785](#) - Water Hygiene Field Guide.

Any required water quality controls, commissioning, recommissioning, disinfection, flushing, sampling or testing activities must be completed before the asset is returned to service.

For assistance with drinking water quality requirements, contact uwsecwaterquality@unitywater.com.

4.12.2 Work completion and reinstatement

The Permit Holder is responsible for:

- completing the approved scope of work
- managing permit timeframes
- promptly advising the Permit Approver of any changes once it is safe to do so
- confirming the operational status of assets covered by the permit.

Upon completion of the works, the Permit Holder must:

- confirm the approved work has been completed in accordance with the Permit to Work
- confirm the network or treatment process/equipment has been safely returned to service
- remove isolations, unless they are required for another approved permit, or authorised to remain in place in accordance with [Pr8182](#) - Isolation – Lock Out Tag Out (LOTO) Procedure and operational requirements
- report to the Permit Approver any isolations that remain in place and confirm whether the associated asset is returned to service, or out of service
- confirm the work area has been left in a safe condition
- report any permit failures, incidents or non-conformances.

4.12.3 Permit close out

Upon completion of the approved works, the Permit Holder must liaise with the Permit Approver to confirm the operational status of all assets covered by the permit and that all permit conditions have been satisfied.

Examples of asset status include:

- Work Complete
- Back on Line (BOL)
- Ready for Return to Service (RTS)
- Out of Service (OOS).

Permits must not be closed until:

- the approved work scope has been completed or otherwise authorised
- the final operational status of all assets covered by the permit has been confirmed
- any assets remaining Out of Service (OOS) have been identified and communicated to the Permit Approver and managed in accordance with [Pr8182](#) – Isolation – Lock Out Tag Out (LOTO) Procedure
- affected assets have been returned to the required operational state, or appropriate controls have been implemented
- all permit live periods have been ended
- permit records have been completed and updated as required
- the Permit Approver has confirmed that the permit may be closed.

Where the approved works cannot be completed, the assets cannot be returned to the required operational state, or additional works are required, the Permit Holder must notify the Permit Approver and:

- maintain any required operational controls or isolations
- update the permit records
- submit a permit amendment where required
- arrange for any additional works to be managed in accordance with this procedure.

4.12.4 After hours completion (WWTP & WIS)

Where the Permit Holder and Permit Approver have agreed that work may continue after hours, the following requirements apply:

- The Permit Holder must advise the Permit Approver of:
 - current work progress
 - any ongoing work requirements
 - the isolation status of the asset/s.
- The Permit Holder and Permit Approver must jointly determine whether:
 - the permit remains open to allow work to continue, or
 - the permit is closed and all work ceases.

Where the permit remains open, a suitable and reliable communication method must be agreed for ongoing coordination.

4.12.5 Commissioning and return to service (Network/WIS)

Commissioning plans are required where assets are installed, modified, refurbished or returned to service and commissioning activities have the potential to impact operations, service delivery or asset performance.

Examples include:

- new assets being connected to the network
- commissioning of new SPS, WPS or recycled water infrastructure
- return to service following major refurbishment or renewal works
- SCADA configuration changes affecting operational assets
- other works identified by the Permit Approver as requiring a commissioning plan.

Commissioning activities must be completed in accordance with the approved commissioning plan and any associated permit conditions.

Where commissioning extends beyond the planned work activities, the permit must remain active until commissioning has been completed or alternative operational arrangements have been approved.

4.12.6 GIS inaccuracies and changes (Network/WIS)

GIS inaccuracies and permanent GIS changes identified during permit planning, execution or completion of the works must be reported to pni@unitywater.com.

Reports must include sufficient information to support assessment and update of GIS records, including:

- a GIS map extract or screenshot
- a marked-up drawing, map or sketch identifying the inaccuracy or change
- any relevant site information, photographs or supporting documentation.

Examples of GIS inaccuracies and changes include:

- asset locations not matching field conditions
- missing or incorrectly identified assets
- incorrect valve, pipe or asset attributes
- permanent asset modifications resulting from completed works.

Refer to Appendix B: GIS change design map for an example of the required GIS change markup and supporting information.

4.13 Permit failure reporting

Permit failures, non-compliances, planned network shutdown failures, and unactioned permits must be recorded in Unitywater's incident reporting system, Intelex in accordance with [Pr8202](#) - Incident Reporting and Notification Procedure where relevant. This is to ensure operational integrity, traceability and continuous improvement.

All events must be investigated and followed by appropriate corrective and/or preventative actions.

4.13.1 Planned network shutdown failures

Planned network shutdown failures must be reported in Unitywater's incident management system, Intelex in accordance with [Pr8202](#) - Incident Reporting and Notification Procedure. Reported incidents are managed in accordance with [Intelex User Guide – Control Room](#).

A planned network shutdown failure is any event where the intended outcome of a Network Permit is not achieved or is compromised during planning, execution or reinstatement of the network.

Failures are classified as:

- Field Failure
- Infrastructure Failure
- GIS Failure
- Planning Failure
- Control Room Failure
- Soft Failure.

4.13.2 Permit failures (WWTP and WIS)

Treatment Plant and WIS Permit failures must be recorded in Intelex as a Near Miss.

Each failure must be reviewed and appropriate corrective and/or preventative actions implemented.

Treatment Plant and WIS failures include:

- failure to obtain a permit before commencing work
- failure to comply with permit conditions during work
- failure to complete the permit as per the work conducted.

4.13.3 Unactioned permits

An unactioned permit occurs where a permit reaches its end date without a recorded Permit Live Period or Outage Live Period.

This may occur where:

- work has not been properly scheduled, or
- work has been completed without a recorded Permit Live Period or Outage Live Period.

All permits must have accurate Permit Live Period and Outage Live Period records to ensure system integrity, operational traceability and compliance with audit requirements.

Accurate recording of permit lifecycle data is critical to support historical reporting, regulatory compliance and investigation of incidents or complaints.

5. Safety Permit system

Safety Permits provide additional controls for high-risk work activities and are managed through Beakon.

Safety Permits do not replace the requirements of a Network Permit, WIS Permit or WWTP Permit. Where multiple permit types apply, all applicable permit requirements must be met.

5.1 Safety Permit questions

When a Safety Permit is selected in Beakon, a set of Safety Permit questions specific to the selected Safety Permit activity will automatically be generated.

The Safety Permit questions represent Unitywater's critical controls for managing work activities requiring a Safety Permit and identify the essential controls that must be implemented and verified before work commences.

Safety Permit questions do not replace the requirement to complete an on-the-job risk assessment or to prepare a Safe Work Method Statement (SWMS) where required by legislation. They provide an additional layer of control to verify that critical controls are in place before work commences.

Completion of the Safety Permit questions confirms that the required critical controls are in place at the worksite.

The permit will not proceed to the next stage until all Safety Permit questions have been confirmed.

5.2 Permit validity

Safety Permits are valid for one shift only, recognising that the work scope, associated risks and required controls may change between shifts.

Limiting a Safety Permit to a single shift ensures that hazards and controls are reassessed and remain appropriate and effective before work recommences.

Where work is to continue into a subsequent shift, the existing permit may be duplicated in Beakon.

When duplicating a permit:

- the Permit Holder must ensure the work scope, hazards, risks and controls are reviewed prior to work recommencing
- where the work scope, hazards, risks and controls remain valid, the existing permit may be duplicated
- the permit and associated on-the-job risk assessment must be reviewed and updated to reflect any changes to the work scope, hazards, risks or controls for the new shift.

The permit validity period must accurately reflect the duration of the work being undertaken. Where work is expected to continue beyond the nominated finish time, the Permit Holder must update the permit prior to expiry to ensure the permit remains active and reflects the current work status.

5.3 Safety Permit types

A Safety Permit is required for the following high-risk work activities:

- Confined Space Entry
- Excavation
- High Voltage Electrical Work
- Hot Work
- Lifting
- Working at Heights.

5.3.1 Confined Space Entry Permit

A Confined Space Entry Permit is required for any work involving entry into a confined space.

The purpose of the permit is to ensure confined space hazards are identified and controlled to minimise risks associated with hazardous atmospheres, engulfment, entrapment and restricted access or egress.

A confined space is an enclosed or partially enclosed space that:

- is not designed or intended primarily to be occupied by a person, and
- is, or is designed or intended to be, at normal atmospheric pressure while any person is in the space, and
- is, or is likely to be, a risk to health and safety from:
 - an atmosphere that does not have a safe oxygen level
 - contaminants, including airborne gases, vapours and dusts, that may cause injury from fire or explosion
 - harmful concentrations of any airborne contaminants
 - engulfment.

A confined space does not include a mine shaft or the workings of a mine.

Refer to [Pr8174](#) - Confined Space Procedure and [Confined Space Code of Practice 2021](#) for more information.

5.3.2 Excavation Permit

An Excavation Permit is required for:

- any excavation below 300mm
- any work involving mechanical excavation equipment (e.g. excavator)
- any work requiring access beneath existing concrete or road surfaces.

The purpose of the permit is to ensure appropriate controls are implemented to manage risks associated with excavation activities, including underground services, ground stability, adjacent infrastructure and personnel safety.

Refer to [Pr11313](#) - Excavation Procedure and [Excavation work Code of Practice 2021](#) for further guidance.

5.3.3 High Voltage Electrical Work Permit

A High Voltage Electrical Work Permit is required for work involving high voltage electrical installations or equipment.

The purpose of the permit is to ensure high voltage electrical hazards are identified and controlled to minimise risks associated with electric shock, arc flash, equipment damage and unplanned outages.

High Voltage (HV) means an electrical installation or equipment operating at voltages greater than 1000V AC RMS or 1500V ripple-free DC.

Where work involves isolation of high voltage equipment, isolations must be completed in accordance with [Pr8182](#) - Isolation – Lock Out Tag Out (LOTO) Procedure.

Refer to [Pr9743](#) - Electrical Safety Procedure, [Electrical Safety Code of Practice 2020 – Works](#) and [Electrical Safety Code of Practice 2021 – Managing electrical risks in the workplace](#) for further guidance.

5.3.4 Hot Work Permit

A Hot Work Permit is required for work involving a naked flame or ignition source that may create a fire or explosion risk.

The purpose of the permit is to ensure ignition sources are identified and controlled to minimise risks to personnel, plant, equipment and the environment.

A Hot Work Permit is required for:

- any work that includes a naked flame.
- any work that includes a naked flame or an ignition source in the following areas:
 - Hazardous Area
 - Gas Type Authorisation Area
 - Biogas Hazardous Area
 - Within 10 metres of where gas may be present.

Examples of ignition sources may include welding, cutting, grinding, heat-producing equipment, internal combustion engines, and electrical equipment capable of generating sparks.

Refer to [Pr11485](#) - Hot Work Procedure for further guidance.

5.3.5 Lifting Permit

A Lifting Permit is required for lifting activities where comprehensive documented lifting procedures are required.

The purpose of the permit is to ensure lifting activities are planned, assessed and controlled to minimise risks to personnel, plant, equipment, infrastructure and the surrounding environment.

A Lifting Permit is required for the following activities:

- tilt-up or spin-up panel jobs
- plant recovery (e.g. overturned plant)
- multiple crane lifts, where more than one crane is used to lift a load at any one time
- lifting of workboxes with people in the boxes
- installation of bridge beams during bridge installation work
- working near live overhead powerlines
- lifting large pressure vessels or tanks
- using a crane for demolition
- complex rigging arrangements (e.g. where additional chain blocks are attached to lifting gear so the load can be rotated or maneuvered while it is suspended on the crane hook)
- the use of mobile cranes on barges
- erection of tower cranes
- heavy lifts where the load is 50 tonnes or more.

Refer to [Pr11312](#) - Lifting Procedure and the [Mobile Crane Code of Practice 2024](#) for further guidance.

5.3.6 Working at Heights Permit

A Working at Heights Permit is required when there is a risk of a person falling two (2) metres or more.

The purpose of the permit is to ensure fall hazards are identified and controlled to minimise risks to personnel working at height.

A Working at Height Permit is required unless the work is being undertaken from:

- a compliant scaffold
- a platform ladder.

Refer to [Pr8191](#) - Working at Height Procedure and [Managing the risk of falls at workplaces Code of Practice 2021](#) for further guidance.

5.4 Multiple Safety Permit requirements

Some work activities may require multiple Safety Permit requirements. Where multiple high-risk work activities are undertaken, all applicable Safety Permit requirements must be identified, assessed and approved before work commences.

Table 5: Examples of multiple safety permits required

Work Activity	Safety Permit Requirements
Hot work undertaken within a confined space	- Hot Work Permit - Confined Space Entry Permit
Excavation or trenching activities that also meet the definition of a confined space	- Excavation Permit - Confined Space Entry Permit
Excavations deeper than two (2) metres where there is a risk of a person falling	- Excavation Permit - Working at Heights Permit
High voltage electrical work undertaken at height	- High Voltage Electrical Permit - Working at Heights Permit
Personnel undertaking work from a crane-suspended work box	- Lifting Permit - Working at Heights Permit
Major pipework repair or replacement requiring a deep excavation, crane lifting activities, personnel access into the excavation and welding of pipework	- Excavation Permit - Lifting Permit - Working at Heights Permit - Hot Work Permit

Applicable Safety Permit requirements may be managed within a single Safety Permit or across multiple Safety Permits, depending on the work scope and permit configuration.

Where multiple Safety Permit requirements apply, all applicable Safety Permit questions, controls and approvals must be completed prior to commencing work.

Where a Safety Permit activity also impacts Unitywater assets or operations, a Network Permit, WIS Permit and/or WWTP Permit may also be required in accordance with Section 4.4 Network, WIS and WWTP interface requirements.

6. Roles and responsibilities

Table 6: Roles and responsibilities

Role	Responsibility
Executive Manager Customer Delivery	As Document Owner responsible for: - Conducting and/or delegating regular reviews to ensure this procedure and related resources (e.g. forms, website content) remain fit for purpose, consistent and current. - Approving this procedure for publication. - Ensuring all relevant stakeholders and team members have been consulted and feedback is captured and actioned (where applicable). - Ensuring appropriate communication and/or training is provided to relevant team members when implementing a new, amended or obsolete document (where applicable). - Monitoring compliance with internal/external requirements (e.g. monitor legislation changes and assess/update this procedure when required).
Branch Managers: Manager Network Operations Manager Treatment Plants Manager Infrastructure Services (for Wamuran Irrigation Scheme)	Within their respective areas of responsibility, Branch Managers are expected to: - Ensure shutdown and operational activities are managed to maintain a safe system of work, protect customers from unnecessary service interruptions, prevent environmental harm, and meet regulatory requirements. - Ensure safe execution of the Permit to Work system in accordance with approved permits, shutdown plans, and operational controls. - Ensure adequate operational resources are available and coordinated, including Control Room, Isolation Planning functions, and field teams. - Ensure teams are trained, informed, and supported in relation to Permit to Work and shutdown processes. - Ensure planned works are communicated effectively through appropriate operational channels. - Ensure coordination between operational areas (Networks, Treatment Plants, WIS, Control Room, and others) during shutdown planning and execution. - Ensure lessons learned and improvement opportunities from permit and shutdown activities are captured and addressed.
Safety Operations Manager	The Safety Operations Manager is responsible for: - Monitoring compliance with Safety Permit requirements across operational areas. - Leading audits, inspections and assurance activities relating to permit governance. - Supporting investigation of permit failures, incidents and high-risk non-conformances. - Identifying systemic trends and driving continuous improvement opportunities in permit systems and procedures. - Providing safety advice and interpretation of legislative and code of practice requirements relevant to permit systems. - Supporting development, review and improvement of Safety Permit procedures and tools. - Advising operational leaders on risk management expectations and control effectiveness.
Isolation Planner	The Isolation Planner is responsible for:

Role	Responsibility
	- Assessing third-party works to determine impacts on Unitywater assets and whether a Network Permit is required. - Reviewing planned Network/WIS works and providing technical input into shutdowns, isolations and operational feasibility. - Approving Network Permits as the Network Permit Approver in accordance with this procedure. - Supporting development and validation of flushing plans where required for water quality management. - Providing technical input into commissioning plans, shutdown sequencing, detention testing and tankering assumptions. - Reviewing GIS discrepancies raised during planning or execution and coordinating correction through the relevant GIS management process. - Identifying operational constraints and advising on risks during early planning and permit assessment stages. - Supporting coordination with Control Room, Engineering and operational teams to ensure safe and workable shutdown planning.
WIS Operational Team	Within their respective areas of responsibility, the Wamuran Irrigation Scheme (WIS) Operations Team is responsible for the safe operation, coordination and control of all activities affecting the Wamuran Irrigation Scheme. They are responsible for: - Acting as the operational authority for all works affecting WIS assets, infrastructure, operations and service delivery. - Acting as the Permit Approver for WIS Permits, including assessment, risk acceptance and approval of planned works. - Coordinating WIS operational requirements, including shutdowns, isolations, flows and system constraints. - Providing technical and operational input into planning, sequencing and execution of works affecting WIS infrastructure. - Identifying and managing operational risks associated with planned and unplanned works within the WIS. - Determining WIS-specific operational controls, including access requirements, system limitations and service continuity considerations. - Ensuring appropriate site attendance where isolation integrity or operational safety requires WIS operational presence. - Managing WIS-related permit failures in accordance with Intalex reporting requirements. - Determining WIS customer and stakeholder communication requirements in coordination with Brand, Communications and Media Team where required. - Supporting investigation and continuous improvement following permit failures, non-compliances or operational incidents.

Role	Responsibility
Treatment Plant Team	Within their respective areas of responsibility, the Treatment Plant Operations Team is responsible for the safe planning, coordination and execution of all works within WWTPs. They are responsible for: - Coordinating WWTP operational planning for works affecting treatment processes, assets or compliance obligations. - Acting as the Permit Approver for WWTP Permits, including assessment, approval and operational risk acceptance. - Providing operational input into shutdowns, isolations, sequencing and plant constraints. - Ensuring appropriate attendance on site where isolation integrity or operational safety requires Treatment Plant presence. - Supporting identification and management of WWTP operational interfaces (including Network and shared assets). - Determining WWTP-specific operational controls and requirements, including shutdown conditions and site constraints. - Managing WWTP-related permit failures in accordance with Intelex reporting requirements (recorded as Near Miss events). - Determining WWTP customer and operational communication requirements, with support from Media/Communications where required. - Supporting investigation and continuous improvement following permit failures, non-compliances or operational incidents.
Control Room Team	Within their respective areas of responsibility, the Control Room Team is responsible for: - Executing Control-Live permits, including activation and deactivation of Permit Live Periods for non-self-live permits. - Coordinating and executing SCADA operations in accordance with approved eSD-Plans, in conjunction with the Permit Holder. - Managing real-time operational system changes to ensure safe and reliable network operation during planned and unplanned works. - Coordinating SCADA resources to ensure sufficient personnel are available to support eSD-Plan execution. - Initiating, managing and updating Reactive Shutdown Permits in response to operational incidents or network events. - Authorising or coordinating reactive works without a Network Permit where permitted under this procedure. - Requiring a Network Permit for high-risk reactive works where operational risk warrants formal control. - Providing operational direction during work execution where network conditions, incidents or system stability require intervention. - Directing delay or rescheduling of works where required to manage operational risk or system constraints. - Initiating or managing Control-Live Permit live periods where assigned under permit conditions. - Stopping or cancelling works where operational risk, system instability or safety concerns are identified. - Participating in stop work resolution processes in accordance with this procedure.

Role	Responsibility
	- Recording operational notes in Beakon where permits do not proceed as planned to support traceability and continuous improvement. - Raising incident reports in Intellex in accordance with Pr8202 - Incident Reporting and Notification Procedure when permit failures occur. - Supporting investigations into shutdown or operational failures by providing operational system information and event history.
Unitywater Officer	The Unitywater Officer is a Unitywater representative who engages or oversees the delivery of works undertaken by external parties or internal permit holders. The Unitywater Officer is responsible for: - Acting as the Unitywater point of contact for external permit holders and overseeing third-party works. - Ensuring all required approvals are obtained prior to work commencing, including TMR, Council, RPEQ designs, landholder and other third-party approvals. - Confirming that any works resulting in permanent asset or design changes have been appropriately approved by Unitywater. - Ensuring Permit Holders have identified and arranged suitable personnel, equipment, materials and resources required to complete the work. - Ensuring personnel undertaking the work are appropriately qualified, inducted and authorised (including Sitepass compliance where applicable). - Coordinating early engagement with the Permit Approvers, Isolation Planners and Process Engineers where required for complex or multi-stage works, including initiation of site visits, project meetings and multi-permit management plans where required. - Supporting the scheduling and coordination of project meetings with relevant operational stakeholders. - Ensuring GIS data requirements (including renewal program GIS layers where applicable) are provided and coordinated in accordance with this procedure. - Providing advance notice to operational teams (including Treatment Plants where applicable) for complex works. - Assisting with investigations into permit failures where required.
Network Engineer	The Network Engineer is responsible for: - Providing technical assessment of third-party works and advising on impacts to Unitywater assets, infrastructure and operations. - Providing technical input to determine whether Network Permit requirements or controls are required (final permit determination remains with the Isolation Planner). - Developing or providing input into flushing plans, water quality considerations and associated operational controls. - Providing technical input into commissioning activities, shutdown methodology and isolation requirements. - Reviewing GIS discrepancies and supporting investigation and correction through the GIS management process. - Identifying technical and operational constraints during planning and supporting mitigation strategies. - Providing input into detention testing and tankering assumptions, including capacity, flow and operational feasibility.

Role	Responsibility
Permit Applicant	The Permit Applicant is responsible for: - Preparing and submitting Permit to Work applications in accordance with this procedure via Beakon. - Defining the work scope, methodology and intended outcomes of the proposed work. - Verifying relevant asset information, GIS records and drawings prior to submission. - Identifying interfaces with Network, Wastewater Treatment Plant (WWTP) or Wamuran Irrigation Scheme (WIS) assets. - Identifying access requirements, site constraints and operational limitations. - Identifying potential safety, operational, environmental, and customer impacts. - Determining whether additional permits, approvals or stakeholder engagement are required. - Ensuring all required supporting documentation (e.g. RPEQ designs, flow management plans, third-party approvals) is included with the application. - Identifying where multiple permits are required for a single scope of work and submitting accordingly. - Ensuring permit applications are complete, accurate, and suitable for assessment prior to submission. - Participating in project meetings where required. - Submitting permit amendment requests where changes to approved scope or conditions are required. - Monitoring planned work conditions (including weather and operational constraints) leading up to commencement of works. - Identify where Safety Permits are required for the proposed scope of work. - Ensure Safety Permit requirements are considered during planning and included in submissions. - Ensure appropriate Safety Permit types are nominated where known at time of application. - Ensure supporting documentation reflects Safety Permit requirements where applicable.
Permit Holder	The Permit Holder is responsible for the safe coordination, execution and close-out of approved works in accordance with this procedure. Pre-Start and Readiness - Confirming permit details, conditions and supporting documentation are accurate prior to commencing work. - Ensuring all pre-start requirements are completed, including risk assessments, isolations confirmation, and site readiness checks. - Ensuring all required approvals, permits, and supporting documentation are in place prior to commencement. - Ensuring all personnel, contractors, and resources are available, competent, qualified, and appropriately inducted (including Sitepass or equivalent requirements).

Role	Responsibility
	Execution of Works - Completing works strictly in accordance with the approved permit scope, methodology, and conditions. - Ensuring compliance with all permit conditions throughout execution. - Coordinating implementation of isolations in accordance with Pr8182 - Isolation (LOTO), ensuring isolations are in place prior to work commencing. - Coordinating with the Control Room for Control-Live permits, SCADA activities, and operational system interactions. - Activating and deactivating Permit Live Periods (Self-Live permits) and ensuring accurate recording in Beakon. - Managing outage duration during execution and escalating delays, risks, or deviations as soon as practicable. - Complying immediately with any stop work direction issued by the Control Room or Permit Approver. Coordination and Communication - Maintaining communication with the Control Room, Isolation Planner, Permit Approver, and other stakeholders as required. - Reporting changes in conditions, risks, or non-conformances when safe to do so. - Ensuring customer notifications are completed in accordance with approved requirements and timing. - Coordinating permit-related notifications in line with the approved permit schedule. Operational and Technical Controls - Ensuring commissioning activities are completed in accordance with approved commissioning plans. - Ensuring flushing and water quality requirements are completed prior to returning assets to service (where applicable). - Ensuring flow management, tankering, and access requirements are implemented where required. - Ensuring SCADA, shutdown, and operational constraints are managed in accordance with approved plans. Asset Restoration and Close-Out - Confirming assets are safely returned to service or remain under approved operational controls. - Ensuring the work area is left in a safe and reinstated condition. - Ensuring all permit close-out requirements are completed prior to closure. - Confirming GIS inaccuracies and permanent GIS changes are recorded in Beakon. - Participating in stop work resolution or dispute processes where required. Safety Permits - Ensure all required Safety Permits are in place prior to commencing applicable work activities. - Verify Safety Permit conditions are understood and implemented on site. - Ensure work is undertaken in accordance with all Safety Permit requirements throughout execution.

Role	Responsibility
Permit Approver	Permit approvals are undertaken by the relevant operational authority based on asset ownership: Network assets: Isolation Planner (Network operational authority). Wastewater Treatment Plants (WWTP): Treatment Plant Operations Team. Wamuran Irrigation Scheme (WIS): WIS Operations Team. After-hours escalation: Control Room (where delegated in accordance with operational arrangements). The Permit Approver is responsible for determining whether planned works can proceed safely, that risks are appropriately controlled, and that operational impacts are acceptable prior to approval and during execution. Planning and Pre-Works Responsibilities Within the planning and pre-works phase, the Permit Approver is responsible for: - Reviewing permit applications to assess operational impact, risk and suitability for approval. - Confirming that appropriate risk assessments have been completed by the Permit Applicant/Permit Holder. - Verifying that work teams and contractors are appropriately qualified and approved (e.g. Sitepass). - Identifying and communicating known operational hazards and constraints. - Providing input into isolation requirements where required. - Attending Project Meetings for high-risk or complex works where required. - Liaising with the Permit Applicant/Permit Holder to clarify risks, scope or controls where necessary. - Determining whether permits are suitable for approval or whether additional information is required. - Determining whether multiple concurrent permits are acceptable for the proposed scope of work. Approval Responsibilities The Permit Approver is responsible for: - Approving or rejecting permit applications based on risk and operational suitability. - Confirming that permit conditions, controls and operational requirements are appropriate and clearly defined. - Determining permit risk ratings in accordance with this procedure. - Confirming whether a permit amendment is appropriate or whether a new permit is required. - Confirming operational risk acceptability prior to authorisation of work. Execution (Live Permit) Responsibilities During active permits, the Permit Approver is responsible for: - Monitoring permit status and reviewing operational impacts where required. - Providing authority to stop or suspend work where safety or operational risk is identified. - Supporting Control Room escalation and operational coordination during live works.

Role	Responsibility
	- Participating in stop work resolution processes and making final determination where required (following the 15-minute review process in coordination with the Control Room). - Escalating or intervening where permit conditions are not being met or operational risk changes. Closure Responsibilities The Permit Approver is responsible for: - Confirming that works have been completed in accordance with the approved permit scope. - Confirming that operational conditions and assets are safe for return to service or remain appropriately controlled. - Approving permit closure once all conditions have been satisfied. - Confirming that any required post-work actions (e.g. amendments, investigations or follow-up permits) are initiated where required. Safety Permit Responsibilities - Ensures Safety Permit requirements are considered as part of permit approval where applicable. - May verify that required Safety Permits have been identified for high-risk activities prior to approval (where visible).
Team Members and Contractor Personnel	Applies to all personnel (Unitywater employees and contractor workers) undertaking or supporting work under the Permit to Work system. They are responsible for: - Working in accordance with this procedure and all approved Permit to Work requirements. - Complying with all permit conditions, site controls, and operational requirements at all times - Following instructions issued by the Permit Holder and authorised Unitywater representatives - Ceasing work immediately if a stop work direction is issued - Only undertaking work within their competency, qualifications, and authorisation - Maintaining required site inductions, licences, and competencies for the work being undertaken - Using required PPE and complying with site safety requirements - Reporting hazards, incidents, and non-conformances through appropriate reporting channels - Identify and comply with all applicable Safety Permit requirements for the work being undertaken - Ensure work does not commence without required Safety Permits being in place - Work in accordance with all Safety Permit conditions, controls and limitations - Stop work immediately if required Safety Permits are not in place or are invalid - Only undertake Safety Permit activities where competent, qualified and authorised

Role	Responsibility
Brand, Communications and Media Team	The Brand, Communications and Media Team is responsible for the development, coordination and oversight of external communications relating to planned and unplanned operational impacts. They are responsible for: • Determining the appropriate communications approach for planned and unplanned works that may impact customers or the community (particularly sewer, water outages, odour, noise or extended duration works). • Reviewing and providing advice on outages or impacts affecting more than 500 properties, including escalation to broader public communications where required. • Developing and coordinating communication materials, including media releases, website content, SMS messaging frameworks and call centre scripts. • Approving deviation from standard Unitywater customer notification templates and messaging content. • Coordinating with operational teams and the Permit Holder to ensure communication timing aligns with confirmed and approved permit information. • Providing guidance on media risk, reputational considerations and public messaging during complex or high-impact works.
Facilities and Property Management Team	Facilities and Property Management Team is responsible for ensuring Unitywater-owned and leased sites are maintained, accessible, and suitable for safe operational use. They are responsible for: • Managing access, leasing arrangements and property conditions for Unitywater facilities, including leased sites and shared-use assets. • Providing approval or conditions for works undertaken on leased sites where required under lease agreements. • Assessing and issuing conditional access approvals where works fall outside standard lease arrangements. • Coordinating property maintenance activities that do not impact operational assets or require a Network, WIS or WWTP Permit. • Ensuring site infrastructure (buildings, grounds, fencing, access controls and utilities) is maintained in a safe and serviceable condition. • Supporting operational teams with access requirements for planned works on Unitywater property where Facilities control applies. • Liaising with operational teams where property-related works may interface with Network, WWTP or WIS assets. • Providing input into site constraints, access limitations and property-related risks during planning of works.

Role	Responsibility
Customer Relations / Account Managers	Customer Relations and Account Managers support customer engagement activities associated with planned and unplanned operational works. They are responsible for: - Supporting the Permit Holder with engagement for sensitive and critical customers, including escalation where required. - Assisting with complex or high-risk stakeholder engagement activities where standard notification processes are not sufficient. - Coordinating with operational teams and Brand, Communications and Media Team to ensure consistent customer messaging. - Providing advice on customer impact risks, particularly where works may affect vulnerable customers, key accounts or critical services. - Facilitating engagement with body corporates, major customers and other key stakeholders where required.
External Third Parties	External third parties include developers, councils, utility providers, contractors, and any other organisations undertaking works that may affect Unitywater assets, infrastructure, operations or services. They are responsible for: - Obtaining all required third-party approvals prior to commencement of works (including Council, TMR, private property or other authority approvals). - Submitting all required documentation to Unitywater for assessment in accordance with the Permit to Work requirements. - Ensuring works are planned and executed in accordance with approved Unitywater permits, conditions and associated controls (where applicable). - Ensuring all personnel, contractors and subcontractors engaged are suitably qualified, inducted and authorised to undertake the works. - Complying with all Unitywater operational, safety and access requirements while working near or on Unitywater assets. - Ceasing work immediately if required approvals or permits are not in place or if directed by Unitywater.

7. Training and competency requirements

Personnel required to participate in the Permit to Work process must complete:

- Permit to Work Awareness* eLearning module.

The module is delivered to relevant Unitywater team members through uLearn and to contractors through Sitepass.

Successful completion of the *Permit to Work Awareness* eLearning module is required before receiving a user account in Beakon.

8. Recordkeeping

Work permits and all associated documentation created in Beakon constitute official records. These records are stored within the Beakon software application.

Permit records and associated documentation must be retained for a minimum of seven (7) years in accordance with Unitywater's [Pr11464](#) - Records Retention and Disposal Standard.

9. Definitions

Table 7: Definitions and acronyms

Term	Meaning
15-Minute Resolution Period	A defined timeframe to review and resolve disagreements following a stop work direction, refer Section 4.10.7 Stop work and resolution process.
ANC	Unitywater's Accreditation Network Connection process.
Beakon	Unitywater's digital software application to submit, approve, manage and close permits.
Biogas Hazardous Area	Designated area at Kawana, Maroochydore and Redcliffe WWTPs where biogas is present.
BYDA	Before You Dig Australia www.byda.com.au
Commissioning	The process of returning assets to service following installation, modification or maintenance to ensure safe and correct operation.
Competent Person	A person with training, qualification and experience to perform specific permit-related tasks.
Complex Works	Works with a high-risk permit risk rating meaning the work will be a major impact on operations.
Confined Space	As defined in Work Health and Safety Regulation 2011
Control Room	Operational team responsible for real-time monitoring and control of network systems including SCADA operations and live permit support.
Critical Property	These are properties listed as critical indicating there are life-threatening or reputation risk associated if water services are turned off.
Demolition	As defined in Work Health and Safety Regulation 2011
Detention Test	Per Section 4.10.3.1 Detention tests.
DMA District Metered Area	A defined section of the water network used for monitoring and managing flows and pressure.
Electrical Work	As defined in Electrical Safety Act 2002
Excavation	As defined in Work Health and Safety Regulation 2011
FFT	Fire Flow Testing
Flushing Plan	A documented plan used to restore water quality following isolation or stagnation in the network.
GIS	Geographic Information System - System used to record and manage spatial asset data for network infrastructure.

Term	Meaning
High Voltage Electrical	As defined in Electrical Safety Regulation 2013
Hot Work	Work in a restricted area that involves potential ignition sources, e.g. batteries, engines, power tools, vehicles or welding equipment and may produce sparks or flames.
H₂S Hydrogen sulphide	A highly toxic, flammable and colourless gas known for it's pungent "rotten egg" odour. Found naturally in sewers, it is a dangerous asphyxiant that can paralyse breathing and cause death within second of exposure to high concentrations.
Instant Self Approved Permit	Per Section 4.8.3.1 Instant self-approved permits (Networks/WIS) Instant self-approved permits (Networks/WIS).
Intelix	Unitywater's incident management software application used for reporting permit failures, incidents and non-conformances.
Isolation	A safety control method used to isolate energy sources or assets to ensure work can be carried out safely. Refer to Pr8182 - Isolation – Lock Out Tag Out (LOTO) Procedure
Isolation Planner	The function responsible for planning and approving isolations and providing technical input into network shutdowns and operational feasibility.
LOTO Lock Out Tag Out	The process used to isolate and control hazardous energy to enable work to be undertaken safely. LOTO requirements are managed in accordance with Pr8182 - Isolation – Lock Out Tag Out (LOTO) Procedure.
Minor Permit Change	Per Section 4.11.2 Minor permit changes.
Minor Works Permit	Per Section 4.1.1 Network and WIS Permit types.
Multi-Permit Management Plan	Per Section 4.4.2 Multi-permit management plans (Network/ WIS).
Network Engineer	Provides technical assessment and input into network impacts, shutdown planning and operational controls.
Network Permit	A permit used to control planned or unplanned work on Unitywater network assets (water or sewer systems). Per Section 4.1 When a Network Permit is required.
On the job risk assessment	An "on-the-job" risk assessment is a risk assessment completed at the work location before any work commences. It identifies hazards present at the site and those arising from the work to be performed, and documents the controls implemented to eliminate or minimise risk so far as is reasonably practicable. An on-the-job risk assessment is required whenever a permit is created in Beakon and is completed through the Beakon Safety Permit module. Refer to Pr9306 - Risk Management Procedure for more information and the relevant Beakon user guides detailed instructions.
Outage Live Period	This is a field in Beakon that shows the status of the shutdown plan when the outage is in progress.
Permit Amendment	A formal change to an approved permit requiring reassessment and approval before implementation.
Permit Applicant	The person responsible for preparing and submitting a permit application, including defining scope, risks, and required documentation.

Term	Meaning
Permit Approver	The operational authority responsible for reviewing and approving permits and accepting operational risk.
Permit Cancellation	Termination of an approved permit due to safety, operational, or compliance reasons. Per Section 4.11.4 Permit cancellation.
Permit Completion	Finalisation of a permit after work completion, including return to service and system closure. Per Section 4.12 Permit completion.
Permit Holder	The person responsible for coordinating and ensuring safe execution of work in accordance with the approved permit.
Permit to Work (PTW)	A formal authorisation that defines the approved scope, conditions, timing, and controls required to safely undertake work that may impact network, treatment, or operational systems.
Planned Shutdown Permit	Per Section 4.1.1 Network and WIS Permit types.
PNI	Planned Network Isolation
Pressure Reducing Valve (PRV)	A valve used to control and reduce water pressure within the distribution network.
Principal Contractor	A person conducting a business or undertaking (PCBU) that is appointed to have management or control of a construction project workplace and to discharge the duties of a Principal Contractor in accordance with the Work Health and Safety Regulation 2011 .
Reactive Shutdown Permit	Per Section 4.1.1 Network and WIS Permit types.
Reactive works	Urgent work required to be undertaken immediately to restore services or make safe.
RES	Reservoir
Risk Assessment	A structured process used to identify hazards, assess risks and define controls before work begins.
RPEQ	Registered Professional Engineer of Queensland per www.bpeq.qld.gov.au
RWTP	Recycled Water Treatment Plant
Safety Permit	A permit required for high-risk work activities such as confined space entry, excavation, hot work, lifting, working at heights and high voltage electrical works. Per Section 5 Safety Permit system.
Safe Work Method Statement	A document that identifies the high-risk construction work activities to be carried out, the hazards and risks arising from those activities, and the measures to be implemented to control those risks. A SWMS must be prepared and used in accordance with the Work Health and Safety Regulation 2011 .
SCADA	Supervisory Control and Data Acquisition system used to monitor and control water, sewage and recycled water network assets.
Sensitive Property	These are properties listed as sensitive indicating there are life-threatening or reputation risk associated if water services are turned off.

Term	Meaning
Sewer Bypass Pumping	Per Section 4.10.3.5 Sewer bypass pumps.
Sewer Catchment	A portion of the sewer network that drains to a single SPS.
SGM	Sewer gravity main
SGMRP	Sewer gravity mains replacement program
Shutdown Plan	A shutdown plan is an instruction that details the exact sequence or steps for how to safely shut down the network assets or equipment. Refer Appendix G: Maps and shutdown plans.
SPS	Sewage Pumping Station
SRM	Sewer Rising Main
Stop Work Direction	An instruction requiring work to cease immediately due to safety or operational risk. Per Section 4.10.7 Stop work and resolution process.
Tankering	Per Section 4.10.3.3 Tankering plans.
Tankering Plan	Per Section 4.10.3.3 Tankering plans.
TMR	Department of Transport and Main Roads
Trial Shutdown Permit	Per Section 4.1.1 Network and WIS Permit types.
TVIP	Trunk Valve Inspection Programs
Unactioned Permit	Per Section 4.13.3 Unactioned permits.
Unitywater Officer	A Unitywater representative responsible for overseeing external works and ensuring required approvals and coordination are in place.
VHRP	Valve and Hydrant Replacement Program
WWTP	Wastewater Treatment Plant
Wastewater Treatment Plan Permit WWTP Permit	A permit type used by WWTP operations areas, this permit type is managed WWTP. Per Section 4.3 When a Wastewater Treatment Plant (WWTP) Permit is required.
Water Pressure Drop Test	Per Section 4.10.3.4 Water pressure drop tests.
WIS	Wamuran Irrigation Scheme – includes the WIS network and treatment plants at Morayfield and Moodlu Quarry.
WIS Permit	A permit used for works affecting the Wamuran Irrigation Scheme. Per Section 4.2 When a Wamuran Irrigation Scheme (WIS) Permit is required.
Proximity Works Permit	Per Section 4.1.1 Network and WIS Permit types.

Term	Meaning
Working at height	Per Section 5.3.6 Working at Heights Permit.
WPS	Water pumping station

10. References and resources

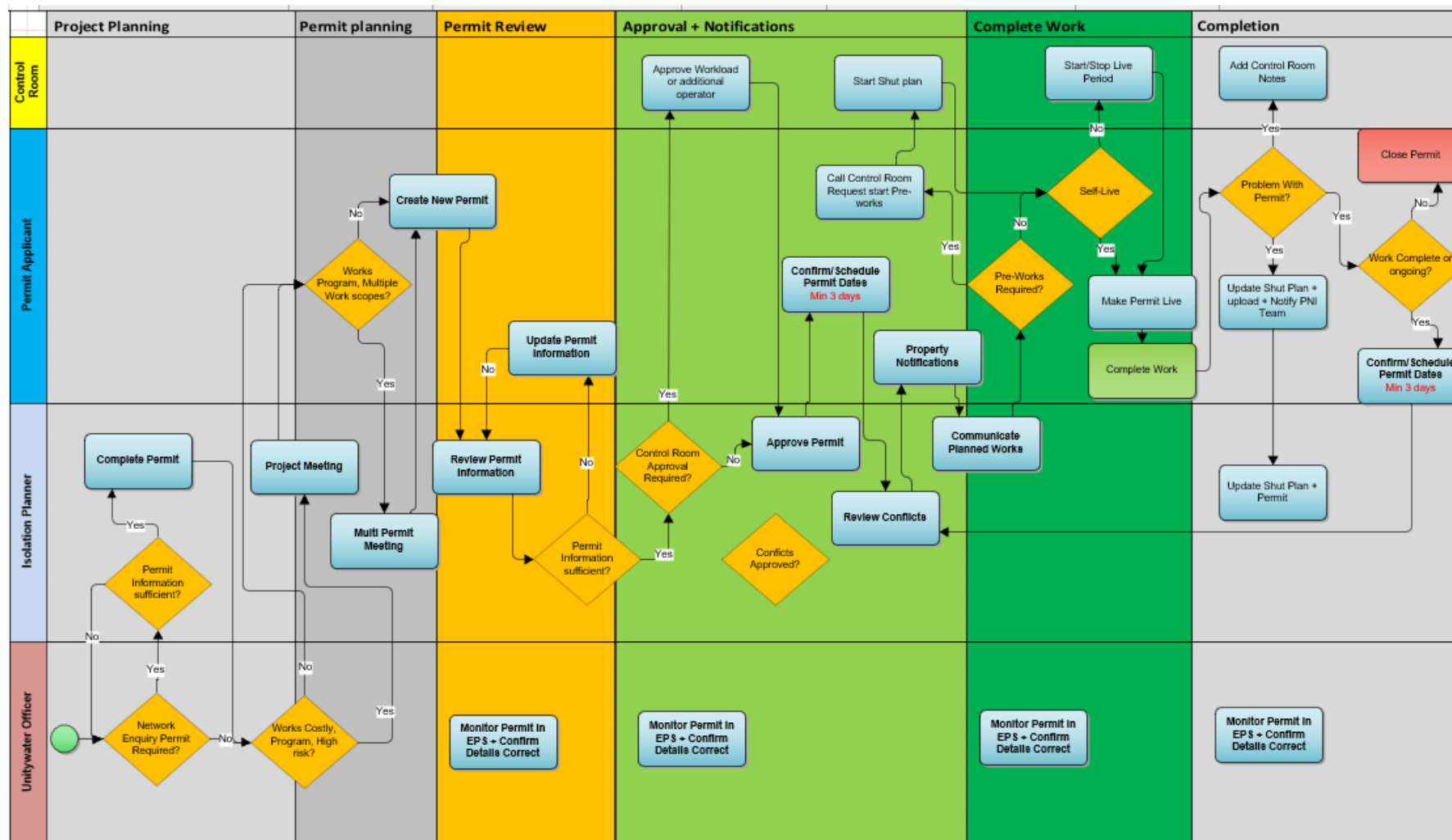
Table 8: References and resources

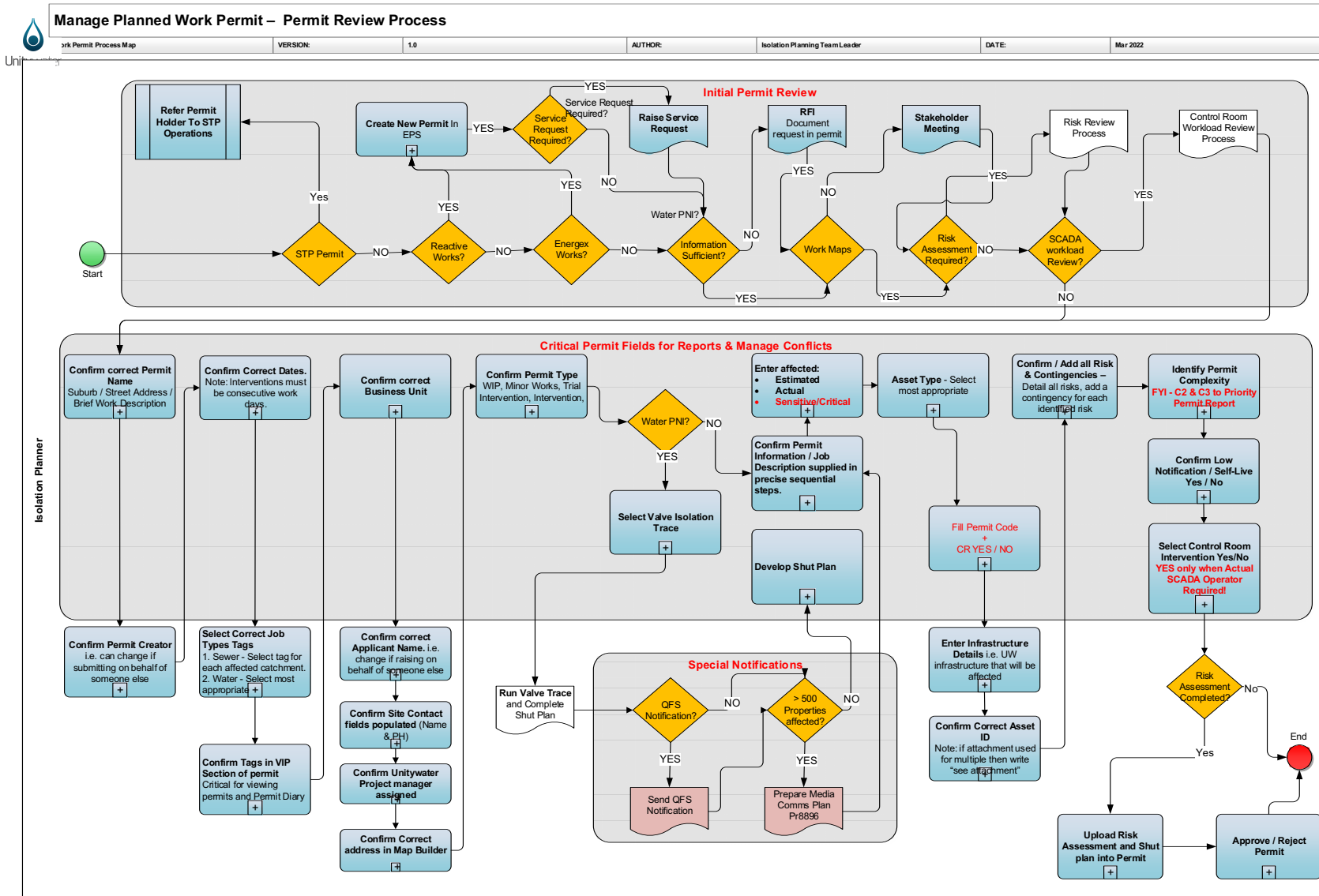
Source	Reference
External	Electrical Safety Act 2002 (Qld) Electrical Safety Regulation 2013 (Qld) Work Health and Safety Regulation 2011 (Qld) Confined Space Code of Practice 2021 , WorkSafe QLD Electrical Safety Code of Practice 2020 – Works , WorkSafe QLD Electrical Safety Code of Practice 2021 – Managing electrical risks in the workplace , WorkSafe QLD Excavation work Code of Practice 2021 , WorkSafe QLD Managing the risk of falls at workplaces Code of Practice 2021 , WorkSafe QLD Mobile Crane Code of Practice 2024 , WorkSafe QLD
Internal	Pr8174 - Confined Space Procedure Pr8182 - Isolation – Lock Out Tag Out (LOTO) Procedure Pr8191 - Working at Height Procedure Pr8202 - Incident Reporting and Notification Procedure Pr9032 - Procedure for Managing Water Quality During Mains Commissioning Pr9306 - Risk Management Procedure Pr9743 - Electrical Safety Procedure Pr10661 - Specification for Sewer Temporary Pumped Bypass Pr11095 - Work Management Standard Pr11213 - Unitywater Valve Management Procedure Pr11312 - Lifting Procedure Pr11313 - Excavation Procedure Pr11464 - Records Retention and Disposal Standard Pr11485 - Hot Work Procedure F9785 - Water Hygiene Field Guide Customer Delivery and the Customer Charter (A7683356) Intelix User Guide – Control Room (A9291514)

Contractors may access relevant Permit to Work procedures, standards and supporting documents via the [Reference Library](#) on the Unitywater website. Where a referenced document is not publicly available, contractors must contact their Unitywater representative to obtain a copy.

11. Appendices

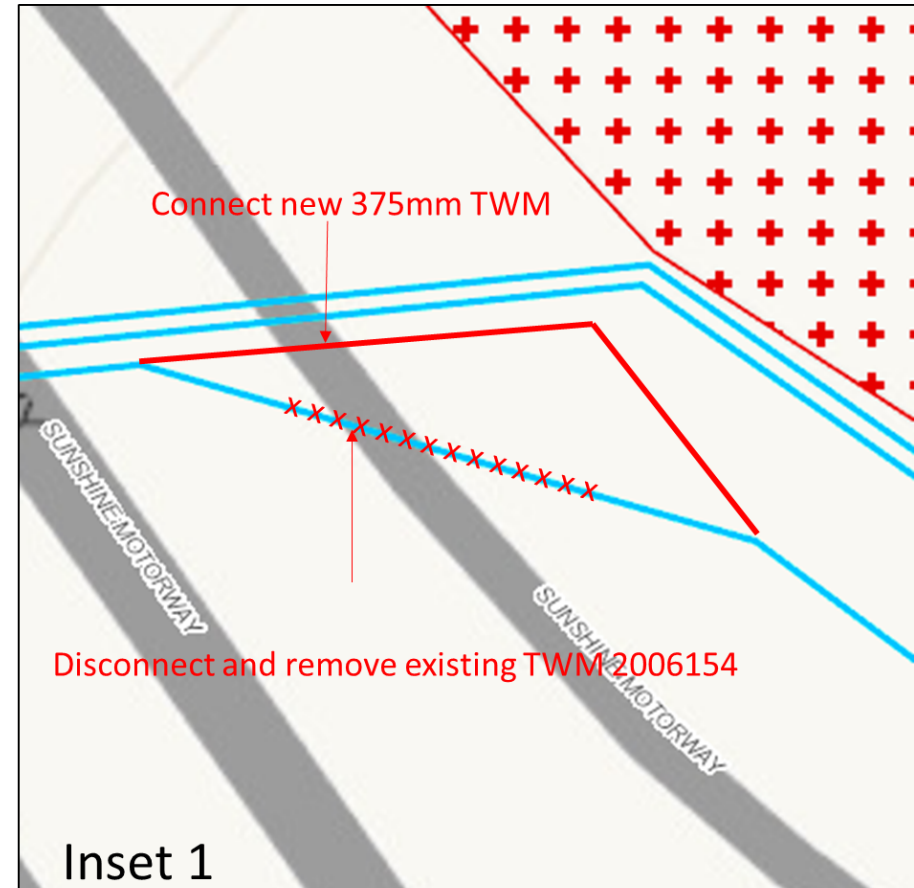
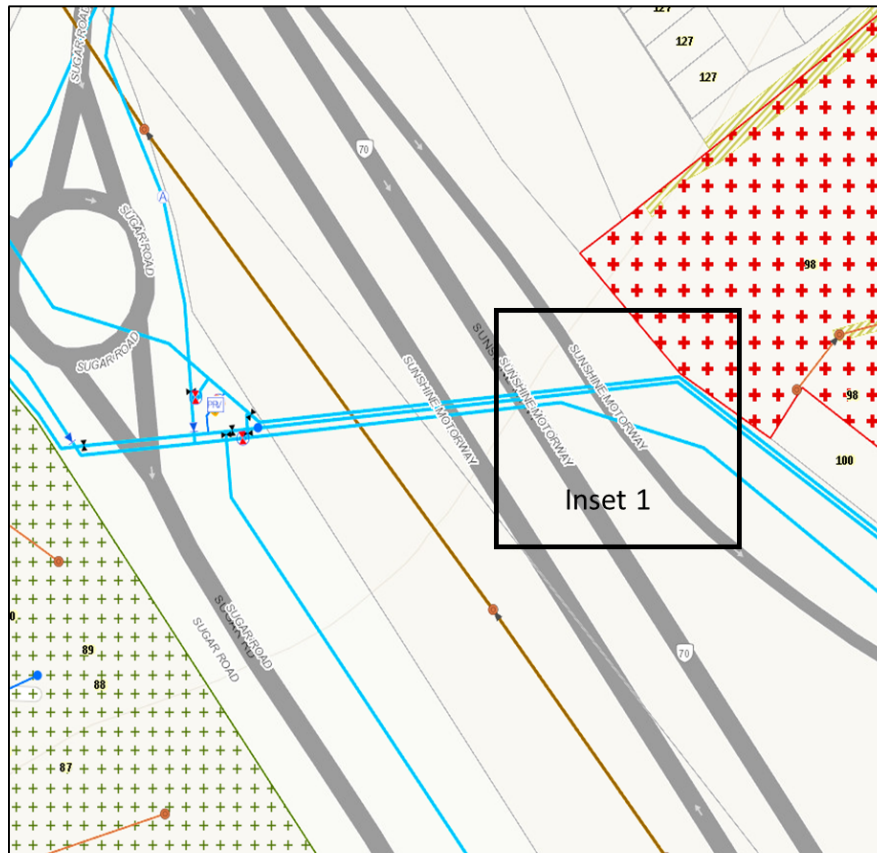
Appendix A: Permit process flow diagrams





Appendix B: GIS change design map

Example of GIS change design map depicting add new water pipe and remove old water pipe.



Appendix C: Description of Works Examples

Example 1 – Simple Work Scope

Description of Works

1. Isolate the reticulation main at valves 100123, 200123, 300123.
2. Install a new service connection at the approved location (refer attached work map).
3. Re-pressurise the main and flush through hydrant 12345 at the end of Smith Street.
4. Return the reticulation main to normal service.

Example 2 – Multiple Work Scopes

Description of Works

The following works will be completed under this permit:

1. Work Scope 1 – Install pressure monitoring equipment at DMA-PRNGH.
2. Work Scope 2 – Commission the pressure reducing valve (PRV) and remove the reservoir from service.
3. Work Scope 3 – Complete a test run of WPS-NAM035.
4. Work Scope 4 – Complete a test run of WPS-ROS001.
5. Work Scope 5 – Complete a test run of the Nambour Showgrounds Tank Filler Station.

Example 3 – Multi-Day Work Scope

Description of Works

24 hours prior to isolation:

1. Lower the reservoir level in RES-ACK002 from 45% to 25%.
2. Complete site preparation works under Minor Works Permit MWP-12345.

Day of Isolation:

1. Close inlet valve 2185008 to RES-ACK002 (Level in RES-ACK002 will lower when WPS-ACK002 operates)
2. When RES-ACK002 reaches 15%:
 - a) Open new DN300 bypass valve A (refer attached work map).
 - b) Close outlet valve 2186089 from RES-ACK002.
3. Notify the Control Room and remove RES-ACK002 from service in SCADA.
4. Return WPS-ACK002 from SCADA control to Decerto control.
5. Monitor network performance and confirm WPS-ACK002 is operating as intended.

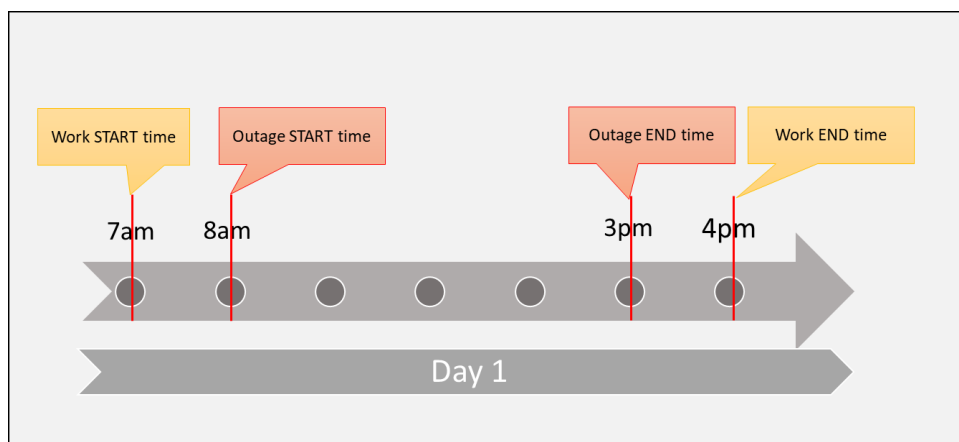
Appendix D: Work and Outage Time Examples

Example 1 – Loss of Water

In this example, civil works commence at 7:00am, the water outage occurs between 8:00am and 3:00pm and remediation works continue until 4:00pm.

Additional requirements:

- Loss of water to the same property must be separated by a minimum of one (1) week unless otherwise approved by pni@unitywater.com.
- The Permit Holder is responsible for recording both work and outage times.

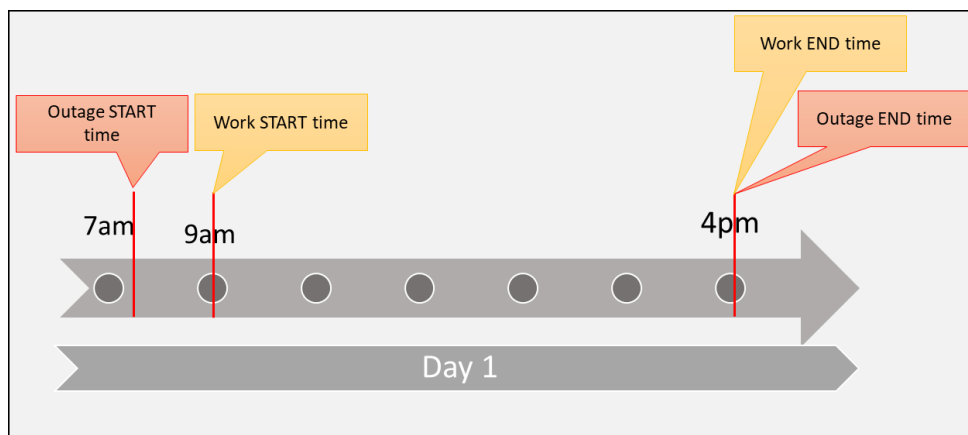


Example 2 – Sewage Pumping Station (SPS) Pump Down

In this example, the Sewage Pumping Station (SPS) requires approximately 1.5 hours to pump down before works commence. The approved works are undertaken between 9:00am and 4:00pm

Additional requirements:

- The Permit Holder is responsible for recording the work times.
- The Isolation Planner is responsible for recording the outage times.



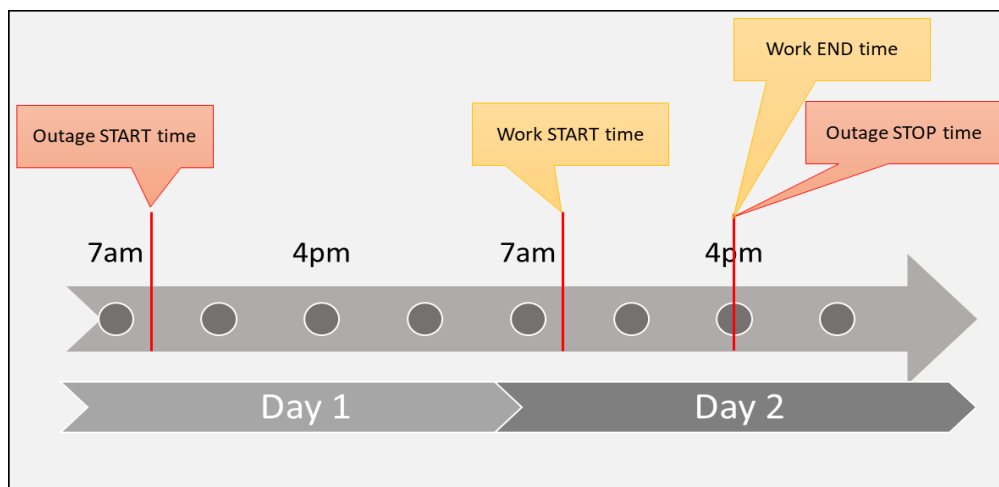
Example 3 – Reservoir Work

In this example, reservoir levels must be increased 24 hours before the planned works commence.

The approved works start at 7:30am on Tuesday (Day 2), therefore the permit work times and outage times should reflect the activities required to raise reservoir levels on Monday (Day 1) and undertake the approved works on Tuesday (Day 2).

Additional requirements:

- The Permit Holder is responsible for recording the work times.
- The Isolation Planner is responsible for recording the outage times.

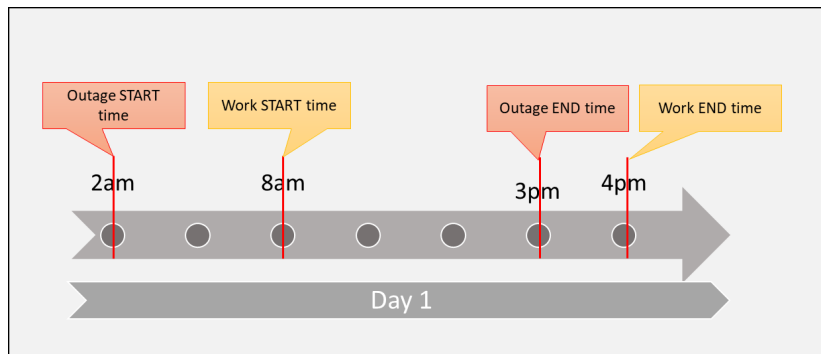


Example 4 – Water Pumping Station (WPS) Filling Reservoir

In this example, the reservoir must begin filling at 2:00am to ensure sufficient storage is available for the Water Pumping Station (WPS) to be taken offline for works between 8:00am and 3:00pm.

Additional requirements:

- The Permit Holder is responsible for recording the work times.
- The Isolation Planner is responsible for recording the outage times.



Appendix E: Multi-Permit Management Plan Examples

Example 1 – Permanent DMA Rezone

1. Permit #1 – Install valve and hydrant (Alpha Street) - Planned Shutdown Permit.
2. Permit #2 – Install valve and hydrant (Bravo Street) - Planned Shutdown Permit.
3. Permit #3 – Commission Flow meter - Planned Shutdown Permit.
4. Permit #4 – Apply new DMA zone - Planned Shutdown Permit.

Example 2 – SPS Renewal

1. Permit #1 – Install bypass connection to SRM discharge - Planned Shutdown Permit.
2. Permit #2 – Install and operate Sewer Bypass Pumps (SPS & SGM) - Planned Shutdown Permit.
3. Permit #3 – Complete wet well renewal and pump replacement - Minor Works Permit.
4. Permit #4 – Commission new pumps (48 hour proving period) – Planned Shutdown Permit.

Example 3 – Reservoir Renewal

1. Permit #1 – Trial Isolation - Trial Shutdown Permit.
2. Permit #2 – Install PRV- Planned Shutdown Permit.
3. Permit #3 – Remove Reservoir from service - Planned Shutdown Permit.
4. Permit #4 – Complete offline maintenance works - Minor Works Permit.
5. Permit #5 – Commission / return reservoir and TWM to service – Planned Shutdown Permit.

Example 4 – Staged Replacement of TWM

1. Permit #1 – Trial Isolation – Trial Shutdown Permit.
2. Permit #2 – Stage 1 and 2 isolation, install/remove temporary valve and temporary supply (Stage 1) – Planned Shutdown Permit.
3. Permit #3 – Lift & Lay pipe – Minor Works Permit.
4. Permit #4 – Stage 2 isolation, install/remove temporary supply (stage 2) – Planned Shutdown Permit.
5. Permit #3 – Lift & Lay pipe – Minor Works Permit.
6. Permit #5 – Flush and commission new pipe – Planned Shutdown Permit.

Appendix F: Process risk ratings

Scope of Work			Permit Assessment Required	Consider	Outcomes
Impact	Examples	Risk Rating			
Network & WIS Process Risk Rating					
Minimal or no impact on normal network operations	- Meter replacements - Single-property works - Sewer cleaning and CCTV inspections (no flow management) - Works with no network pressure or customer impacts - No impact to sensitive or critical customers	Low	Permit Approver discretion	Typically managed under a Proximity Works or Minor Works Permit.	
Localised impacts to network flows, pressure or customer supply	- Changes to network pressure or flows - SCADA monitoring or configuration changes - Work on control assets (PRVs, actuated valves, level instruments) - Temporary loss of power to network equipment - Sewer plug and release works (≤150 mm) - Water quality activities, including flushing - Trial shutdown activities	Medium	Permit Approver discretion	Typically managed under a Proximity Works or Minor Works Permit.	
Impacts to bulk assets, critical infrastructure or widespread customers	- DMA rezoning (>10 m HGL differential pressure) - Flow management, sewer bypass pumping and tinkering plans - Sewer plug and release works (>150 mm) - Reservoir isolations or bulk water supply changes - Seqwater interface works - Customer impacts exceeding 500 properties - High-risk water quality activities - High-risk hot tapping (>300 mm or designated mains) - Activities affecting WWTP operations - Bulk water SCADA or Aquadapt set point changes	High	Yes	Typically managed under Planned Shutdown or Trial Shutdown Permits.	All high-risk permits must be assessed by, at a minimum, the Isolation Planner and a Network Engineer.
Wastewater Treatment Plant Process Risk Rating					
No impact on normal operations	- No or minimal process impact - No loss of redundancy - No impact to effluent quality	Low	No		

Scope of Work			Permit Assessment Required	Consider	Outcomes
Impact	Examples	Risk Rating			
Minor or temporary impact on operations	• SCADA, setpoint or process changes • Control instrument work • Temporary loss of redundancy (including critical plant) • Minor effluent quality impacts with rapid recovery and no EA non-compliance • Chemical or hazardous area maintenance • Draining of inground tanks	Medium	TPTM discretion	• Impacts to biosolids or effluent quality • Flow management requirements • Safety and asset risks • Duration and criticality of outages • Regulatory and reporting obligations • Odour impacts	
Complex works or major operational impacts	• Risk of exceeding licence limits • Risk of dry weather bypass • Significant disinfection impacts • Major process changes or non-like-for-like replacement of critical equipment • Chemical or hazardous area modifications • Network intervention or flow limiting • Works involving excessive or high instantaneous flows with potential for non-compliance	High	Yes		Where practicable, hold a project meeting to confirm the scope, risks and operational impacts before work begins.

Appendix G: Maps and shutdown plans

Example – Shutdown plan details section

General Information	
Type:	Sewer
Sub Type:	SPS_Off
Status:	Closed
Attachments:	
Outage Plan Details	
Permit:	PTW83651; Buderim Street Currimundi QLD, 4551 Australia; Isolate SPS-CAL007 for VSD INSTALL
Permit Name:	PTW83651; Buderim Street Currimundi QLD, 4551 Australia; Isolate SPS-CAL007 for VSD INSTALL
Permit Type:	Planned Shutdown
Shut Down Sequence Explanation:	1. Pump Down Network 2. Electrically Isolate SPS-CAL007 3. Connect Temporary generator to Run one Pump 4. Monitor levels or the duration of works 5. Complete Scope of Works 6. De-isolate SPS-CAL007 7. Return Catchment back to Normal Operation
Pre-Works Explanation:	
Network Outage Start Time:	31/10/2023 06:30
Network Outage End Time:	31/10/2023 16:30
Outage Duration Time:	10h:00m
Live Period by:	
Shutdown Plan Revision #:	1
Permit Risk Rating:	Medium
Critical Properties Affected:	
Sensitive Properties Affected:	
Total Properties Affected:	0
Planning Code:	SPS-CAL007; Isolate SPS-CAL007 for VSD INSTALL; SPS-CAL008, SPS-CAL009, SPS-CAL010, SPS-CAL011
Permit Approver / Planner:	
SPS Pump Down	
SPS ID:	SPS-CAL007
Detention time:	3.00
Day / Night outage:	Day
SPS pump down network response explanation:	Pump Down Sequence SPS Name 2 Tier/Node SPS-CAL009 2 Tier/Node SPS-CAL010 2 Tier/Node SPS-CAL011 1 Tier/Node SPS-CAL008 0 Tier (Work Area) sps-cal007
SPS criticality:	
Pump Down Required by Control Room:	Yes
SPS expected operation status:	Operational
SPS additional information:	SPS Name Est KL/Day Detention Time Detentions Test Date SPS-CAL009 , KL/Day=22.2 , DT Time=15 , DT Date=09/02/2023 08:00-23:00 (reached 52%) SPS-CAL010 , KL/Day=83.2 , DT Time=15 , DT Date=09/02/2023 08:00-23:00 (reached 60%) SPS-CAL011 , KL/Day=222.5 , DT Time=4 , DT Date=09/02/2023 08:00-12:00 SPS-CAL008 , KL/Day=639.8 , DT Time=7 , DT Date=09/02/2023 08:00 - 15:00 sps-cal007 , KL/Day=947 , DT Time=3 , DT Date=09/02/2023 08:00-11:00 (reached 62%)
SPS will be offline for detention test:	No

Example – Shutdown plan

▲ Shutdown Steps

Create ▾

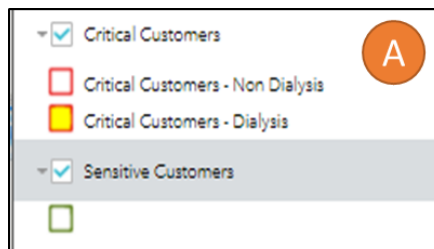
« < (1 - 10 of 10) > »

SEQUENCE	STEP TYPE	RESPONSIBLE TO COMPLETE STEP	DIAMETER / CRITICAL / OWNER / OPERATIONAL / DRAWING	ASSET ID	ASSET TYPE	ASSET ADDRESS	NORMAL POSITION	REQUIRED POSITION	ACTION / COMMENT	COMPLETED	COMPLETED BY	COMPLETED DATE/TIME	GENERAL + VALVE OPERATION COMMENTS	ATTACHMENTS
1	Step Forward / 1 / SPS-CAL007	Control Room Operator	//Unitywater//CS1341	SPS-CAL007	Pump Station	Battery Hill	n/a	Closed	Pump Down SPS listed in Pump Down Table, pump, follow sequen ⓘ	☐				edit ▾
2	Step Forward / 2 / SPS-CAL007	Control Room Operator	//Unitywater//CS1341	SPS-CAL007	Pump Station	Battery Hill	n/a	Closed	Monitor SCADA SPS levels for the duration of work.	☐				edit ▾
3	Step Forward / 3 / SPS-CAL007	Permit Holder	//Unitywater//CS1341	SPS-CAL007	Pump Station	Battery Hill	n/a	Closed	Power Off and Electrically ISOLATE asset as per LOTO:	☐				edit ▾
4	Step Forward / 4 / SPS-CAL007	Permit Holder	//Unitywater//CS1341	SPS-CAL007	Pump Station	Battery Hill	n/a	Closed	? Control Room Operator to monitor network to ensure it reac ⓘ	☐				edit ▾
5	Step Forward / 5 / SPS-CAL007	Permit Holder	n/a	SPS-CAL007	Temporary generator	Battery Hill	Not Connected	Connect Temporary Generator to Run one Pump	Confirm is ON, and is in STANDBY/RUN position	☐				edit ▾
6	Step Forward / 6 / n/a	Control Room Operator	n/a	n/a	n/a	n/a	n/a	n/a	Monitor SCADA SPS levels for the duration of work.	☐				edit ▾
7	Step Forward / 7 / n/a	Permit Holder	n/a	n/a	n/a	n/a	n/a	n/a	Start Work Scope as per Permit.	☐				edit ▾
8	Step Reverse / 8 / SPS-CAL007	Permit Holder	//Unitywater//CS1341	SPS-CAL007	Pump Station	Battery Hill	n/a	n/a	Electrically DEISOLATE and turn power ON as per LOTO:	☐				edit ▾
9	Step Reverse / 9 / SPS-CAL007	Control Room Operator	//Unitywater//CS1341	SPS-CAL007	Pump Station	Battery Hill	n/a	n/a	Controlled Pump down: view SPS levels in SCADA, start with h ⓘ	☐				edit ▾
10	Step Reverse / 10 / SPS-CAL007	Control Room Operator	//Unitywater//CS1341	SPS-CAL007	Pump Station	Battery Hill	n/a	n/a	Permit holder can leave site when: Review control system con ⓘ	☐				edit ▾

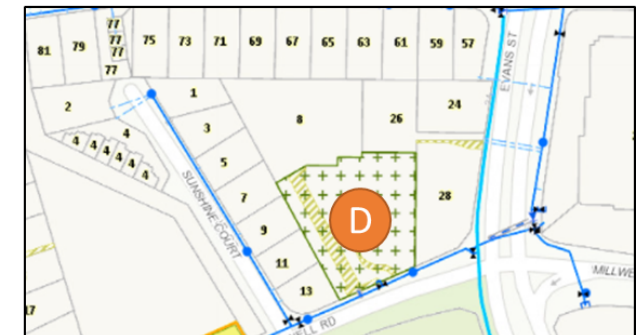
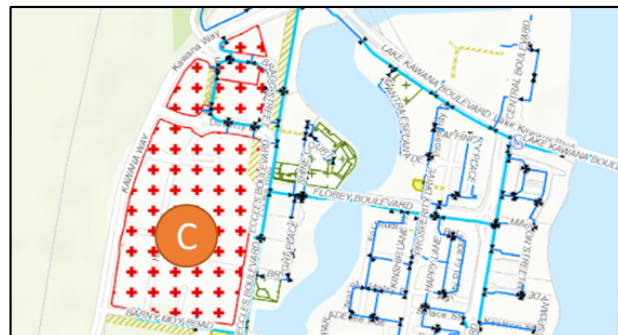
Example – Maps – Identify property type

Each property category is identified using a unique colour and pattern as shown in the legend:

- The legend defines all shading and pattern references
- Critical properties with dialysis are identified with a red pattern and yellow shading
- Critical properties are identified with a red pattern
- Sensitive properties are identified with a green pattern
- General properties are shown with no shading or pattern.



- A. Example of Legend used in GIS
 B. Example of Critical Customer – Dialysis
 C. Example of Critical Customer – Non Dialysis
 D. Example of Sensitive Customer



Example – Maps – Legend

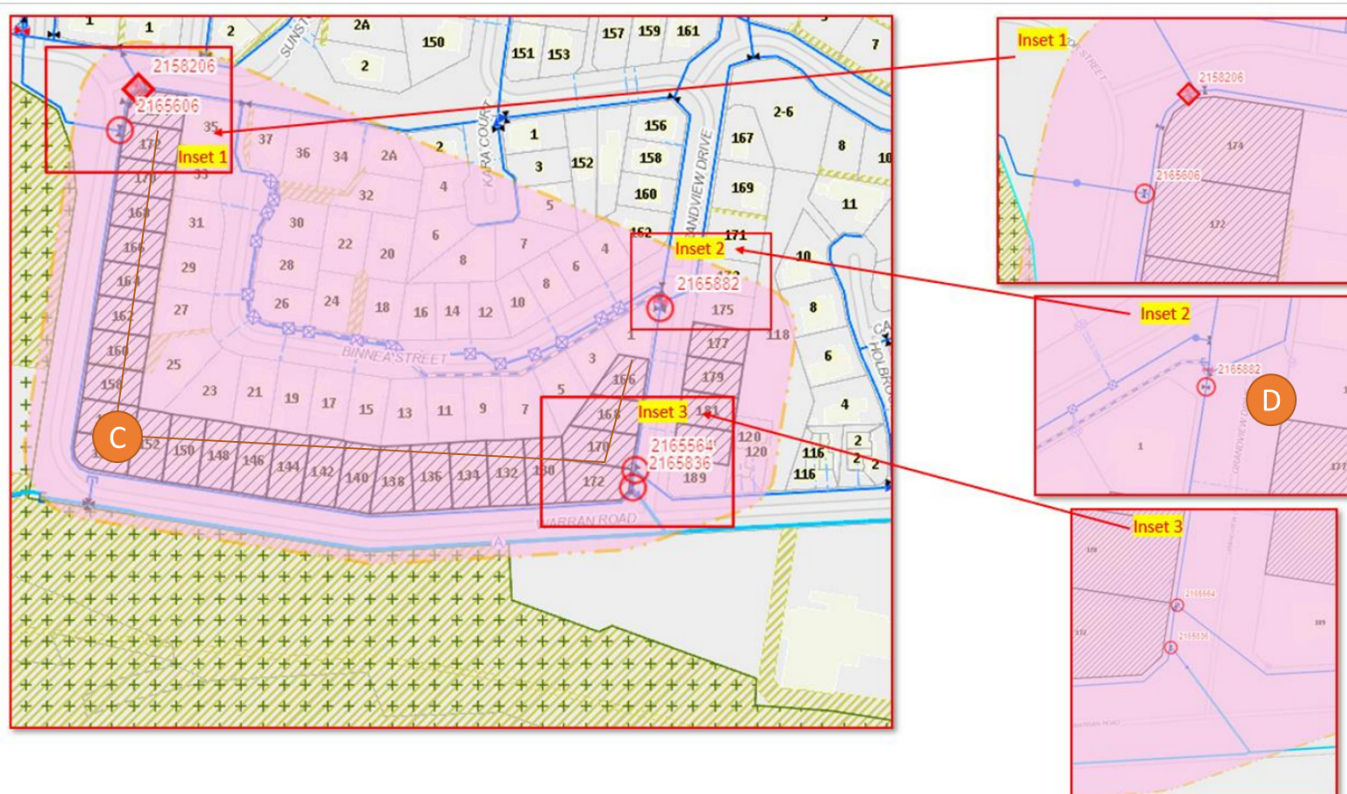
UW Infrastructure Water Infrastructure Water WTP and Reservoirs - WTP Treatment Plant - Reservoir Water Pump Station - Pump Station Water Network Meter - Network Meter Water Control Valve - Pressure Reducing Valve - Pressure Sustaining Valve Water System Valve - Stop, Closed - Stop, Open - Zone Boundary, Closed - Zone Boundary, Open Water Fill Station - Paid Filling Point - Mobile Hydration Point - Personal Hydration Point - Tanker Filling Station Water Sampling Station - Sampling Probe - Sampling Tap - Water Quality Monitoring Device Water Raw & Trunk Main - Raw Water Main - Trunk Main Water Reticulation and Scour Pipe - Reticulation Main - Scour Pipe Water Structure Footprint - Reservoir Tank Water Catchments Water CP DMA Sub Zone Water CP DMA Zone - ARONA - AmamoorDMA	Network Intervention Valves - Shut Off Valve - Unmapped Valve - Boundary Valve - Unclassified Valve	Network Intervention Properties	Sewer Infrastructure Sewer STP - Treatment Plant Sewer Pump Station - Pump Station Sewer Network Structure - Storage Facility - Manifold Storage Facility - Overflow Point Sewer System Valve - Stop Sewer Sampling Station - Sampling Station Sewer Gravity Flow Direction Arrows - Overflow Main - Reticulation Main - Siphon Main - Trunk Main Sewer Trunk Gravity Main - Trunk Main Sewer Gravity Main - Reticulation Main - Overflow Main - Siphon Main Sewer Pressure Main - Pressure Sewer - Rising Main - Vacuum Main - Vent Pipe Sewer Abandoned Pipe Sewer Storage Facility Footprint - Storage Footprint - Well Footprint Sewer Catchments Sewer SPS Catchment - SPS- - SPS-BEW001
	Recycled Water Infrastructure Recycled Water Pump Station and Reservoir - Reservoir - Pump Station Recycled Water Control Valve - Pressure Reducing - Pressure Sustaining Recycled Water System Valve - Stop - Zone Boundary Recycled Water Fill Station - Tanker Filling Station Recycled Water Sampling Station - Sampling Probe - Sampling Tap Recycled Water Main - Trunk Main - Reticulation Main - Scour Pipe Recycled Water Abandoned Pipe Recycled Water Structure Footprint - Reservoir Tank	Facility Site	Property Information Critical Customers - Critical Customers - Dialysis - Critical Customers - Non Dialysis Sensitive Customers UW Owned Land Easements Parcels Dissolved UW Area Mask

Example – Shutdown plan – Map with outage properties

The following is an example of a water shutdown plan map. The items below explain how to interpret the map.

- The shutdown plan ID number corresponds to work permit ID number.
- The map legend defines valve types and network shutdown property classifications. The map legend in this procedure must always be referred to when interpreting shutdown plan maps.
- Properties with diagonal lines indicate properties affected by the outage and require notification. Consider whether properties are sensitive or critical.
- Map insets provide a zoomed view of the exact asset location.

Shut Plan PTW	PTW: 73314	A	Yaroomba, Warran Rd VHRP202122 Routing Map VHRPP048_Intervention
Revision #	No. 1		Shut Planner Name: Brett O'Sullivan



Map Legend

Network Intervention Valves

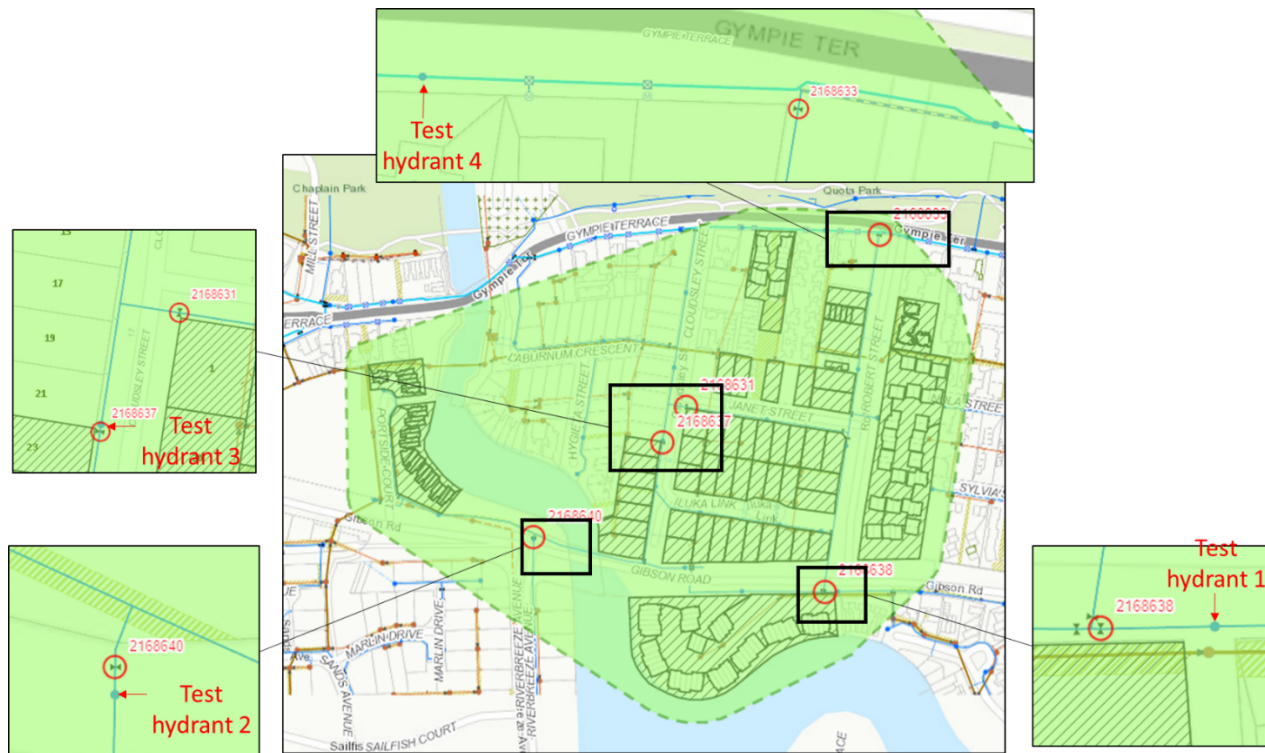
- Shut Off Valve
- ⊞ Unmapped Valve
- ◊ Boundary Valve
- Unclassified Valve

Network Intervention Properties



- The shutdown plan map shows the nearest hydrants outside the isolation area used as test back feed points.
- Testing hydrants outside of isolation boundary confirms whether water is back feeding during valve isolation.
- Each test point must be checked for back feed as isolation valves are closed. Any loss of water must be investigated immediately.

1. Close valve 2168638 + test hydrant 1
2. Close valve 2168640 + test hydrant 2 – if water loss is experienced, check for closed valves on River breeze Ave.
3. Close valves 2168631 and 2168637 + test hydrant 3
4. Close valve 2168633 + test hydrant 4.



Permit Code Matrix

[illegible]

SEWER												
If Long Term Isolation - Ensure permit dates capture duration of change If Long Term Isolation - Ensure permit dates capture duration of change												
Infrastructure	Retic Works		Trunk Works			SPS Works		Diversion (Trunk & SPS)	Bypass Pumps (Retic, Trunk, SPS)	STP affecting Network		Power Outages
Online / OFFLINE?	Online	OFFLINE (with Plug)	Online	OFFLINE		Online	OFFLINE			Online	OFFLINE	OFFLINE
How Infrastrure affected				Plug only	Plug with SPS OFF							
Valve Trace	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Low Notification	Self-live	Self-live	Self-live	Self-live <300	NO	Self-live	NO	NO	NO	N/A	NO	NO
Complexity	C2	C2	C2	C2	C2	C2	C2	C3	C3	N/A	C3	C2
Shut Plan #	NO	NO	NO	S/Plan	S/Plan	NO	S/Plan	S/Plan	S/Plan	N/A	S/Plan	S/Plan If >5 SPS
Asset Type	SELECT	SELECT	SELECT	SELECT	SELECT	SELECT	SELECT	SELECT	SELECT	N/A	SELECT	SELECT
Job Description	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	N/A	FILL	FILL
3 x property fields	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	N/A	FILL	FILL
Permit Type	MWP	INT	MWP	INT	INT	MWP	INT	INT	INT	INT	INT	INT
CR Intervention	NO	NO	NO	NO	CR	NO	CR	CR	CR	CR	CR	CR
Permit Holder Conditions												
Supply Assets Map to show												
• Exact work location	NO	Yes	Yes	Yes	Yes	NO	NO	NO	Yes	N/A	N/A	
• Exact plug locations (if applicable)												
• Show multiple (if applicable)												
Live Period Conditions - Add St address to Comments box	Yes	Yes	NO	Yes	N/A	NO	NO	NO	NO	N/A	N/A	
Live Period Conditions - Add Plug location to Comments box	N/A	NO	N/A	Yes	NO	NO	NO	NO	NO	N/A	N/A	
Special Information i.e.												
•RPEQ Flow Management Plan	NO	NO	NO	NO	NO	NO	NO	Yes	Yes	NO	Yes	NO
•Project plan												

Work Map Example

A map of the work area must be provided.

The GIS map must be clearly marked up to show:

- the work location
- proposed isolation points.

Work map displaying critical Information:

- Proposed Isolation boundary – Asset ID assist where
- Work area

Simple work map and isolation points

