Lithgow City Council

Review of Water Network Outage

8–16 October 2025

28 November 2025

Contents

1. Executive Summary

Between Wednesday 8 October and Sunday 12 October 2025, Lithgow experienced a catastrophic water network outage beginning with a leaking main on Hassans Walls Road and escalating into the rupture of both a 100mm high-pressure line and 450mm trunk main. Inoperable valves and incomplete network mapping prevented isolation, causing total network drain-down. The Oakey Park Water Treatment Plant (WTP) could not be restarted for nearly 55 hours due to the absence of carrier water, lack of restart procedures, and automated shutdowns process.

Restoration required emergency connection to the Fish River Scheme, sourcing of water supply tankers, RFS support, and construction of a temporary bypass to restore WTP carrier-water flow. Full restoration occurred gradually from 12 October, with reservoirs filled by 16 October.

The Lithgow treated water network provides potable water to a diverse, dispersed, and vulnerable population across residential, commercial, industrial, and institutional areas. Essential services relying on the system include hospitals, Supported Independent Living (SIL) homes, domestic violence shelters, schools, aged-care facilities, emergency services, and community welfare organisations.

Prior to the October 2025 outage, the water network operated under a range of latent vulnerabilities that, while individually manageable under normal conditions, collectively contributed to system fragility when this outage incident occurred.

While some short-term improvements can be achieved at relatively low cost, long-term resilience depends on strategic capital investment, particularly in the WTP, network redundancy, and digital asset management systems.

Failure to implement upgrades is likely to result in continued exposure to extreme and high risks, with greater costs incurred during future critical infrastructure failures.

Investment in communication capability and organisational resilience offers strong cost-benefit returns by improving critical infrastructure resilience, improving community confidence, and supporting legal and governance compliance.

These pre-existing vulnerabilities included:

- Ageing infrastructure across key elements of the water network distribution systems.
- Limited or outdated water network schematics, including incomplete mapping of valves, line connections, and flow paths.

- Lack of formalised valve maintenance records, making it difficult to determine which valves were operable, their direction of closure, or historical service status.
- Incomplete records of previous line repairs, including details of materials used, repair methods, and any follow-up assessments.
- Inadequate inventory of repair materials such as clamps, pipes, fittings, and UV-stabilised components.
- Multiple key plant components exposed to deterioration due to age, sun exposure, or storage in unsuitable environments (e.g., adhesives breaking down inside sealed shipping containers).
- Limited scenario-based training or planning for Water Treatment Plant (WTP) outages, full network drain-downs, or major trunk line ruptures.
- Limited WTP restart procedure for situations where reservoir-fed carrier water was unavailable.

Council's communication systems also exhibited structural constraints prior to the event. Public updates were delivered primarily through the Council's Facebook page. Although effective for many residents, this created significant accessibility barriers for customers who may be elderly, without smartphones or internet access or with limited digital literacy, people living with intellectual disability and homeless residents.

Council's crisis communication capability relied disproportionately on Facebook. Additionally, several communication channels, including the Council website and the Virtual Messenger voicemail system, were dependent in the early stages of the event on a single staff member with the required access and technical expertise. When that individual was unavailable during the early phase of stages of high information demand in the outage, critical updates could not be issued across Councils website or customer facing voice messaging system.

Internal communication flows during the incident also showed signs of strain. There was a noted disconnect between outdoor operational staff and senior management. Outdoor operational staff and field crews reported uncertainty about how to escalate concerns, and some staff felt that raising accurate but unfavourable information might not be well received. This inhibited the timely transmission of essential technical information to the Executive Leadership Team (ELT).

Additionally, the Council's Business Continuity Plan (November 2017) was outdated and did not adequately address asset failure events, major network outages, or protracted WTP shutdowns. No formal incident management system or structure was identified in relevant Council Standard Working Procedures. This gap contributed to a lack of structured escalation, uncertainty regarding decision-making authority, and inconsistent internal coordination during the outage.

In summary, prior to the October 2025 event, the Lithgow water network and organisational systems were operating under known but unmitigated infrastructure, communication, documentation, and cultural weaknesses. These underlying vulnerabilities played a significant role in shaping the impact, duration, and complexity of the outage and recovery efforts.

After Action Review sessions were conducted with outdoors, administration and management staff in the week following the incident. The review of the outage response also evaluated input received from emergency service agencies, community social media feedback and technical specialists.

The Review of the Lithgow Water Network Outage was conducted and reported by the Lithgow City Council Director People and Places.

2. Incident Description

The incident that unfolded between 8 and 16 October 2025 was the most significant failure recorded in Lithgow of the Council treated water network. The sequence of events began on the afternoon of Wednesday 8 October, when Council received a report of minor seepage emerging through the pavement on Hassans Walls Road. A preliminary inspection was conducted at 1630, confirming light seepage but no visible rupture. Further inspection and excavation were scheduled for the following morning.

During the early hours of Thursday 9 October, at approximately 0200, the Water Treatment Plant (WTP) system logged a reduction in network pressure. By 0645, operational staff conducting a follow-up inspection of Hassans Walls Road confirmed that the seepage had intensified, and the sub-pavement materials were saturated. The leak was suspected to involve a major pipeline, potentially the 450mm network main, but confirmation was not possible due to multiple water lines present in that road section and a lack of accurate valve and line location and service documentation.

At 0730, a Council backhoe arrived on site but was unable to safely operate due to pavement subsidence. The pavement was spongy, deforming under the weight of machinery. At 0900, the situation escalated when a column of pressurised water burst through the pavement, ejecting debris and further saturating the immediate area. At this time staff were still unable to confirm which water line had failed, as multiple lines were present and excavation had not yet commenced due to safety considerations arising from the high water pressure.

To enable safe excavation and prevent further damage, the Oakey Park Water Treatment Plant was shut down at 1000 to depressurise the network. Attempts to isolate the broken main using upstream and downstream valves failed. The critical outlet valve at Shaft Street Reservoir was inoperable and could not be activated. No contractor divers or valve installation specialists were available. Staff resorted to a process of elimination, manually closing valves across the network using inconsistent paper schematics. By midday Friday 11 October, all reservoirs feeding the area, including Shaft Street, Cook Street High, and Cook Street Low, had been isolated and depleted of water supply. Once safe site access was obtained excavation revealed that both the 100mm high-pressure line and the 450mm trunk main had ruptured.

By early Friday afternoon (1330–1500), the treated water network had effectively drained. This resulted in the first recorded total treated water system depletion of the Lithgow water network. At the same time, public communication escalated. A Council Facebook post issued at 1527, advised residents of localised impacts. However, the actual extent of the outage was rapidly expanding across Lithgow, and customers were

beginning to report total loss of supply.

Attempts to update public information, other than through social media, via the website and Virtual Messenger failed due to staff unavailability and insufficient IT redundancy.

The most critical challenge emerged when staff attempted to restart the WTP. The WTP relies on a continuous supply of treated 'carrier water' to feed chemical dosing systems. Normally, this carrier water is drawn from the potable reticulation network, which in turn is replenished by reservoir backflow. With the network fully drained, no feed to the WTP was possible. Tankers from RFS attempted to deliver water to maintain flow, but the WTP's automated dosing systems required uninterrupted feed. Any fluctuation caused an automatic shutdown. This cycle repeated from Friday afternoon until early Sunday morning, with no sustained operation achievable.

During this time, Council communications continued to advise residents that water restoration was imminent, initially by Friday evening, then Saturday morning, then Saturday afternoon and evening. These projections were based on incomplete or overly optimistic advice provided to senior management. The misalignment between operational reality and public statements caused significant community confusion and concern, and inhibited necessary water conservation behaviours.

Early Saturday 11 October, the NSW Water Fish River Scheme supply was activated, providing a limited inflow of 35 L/s (compared to the WTP's normal 190 L/s). In the morning of Saturday water distribution points were established at Tony Luchetti Showgrounds by private operators, and later in the afternoon by Council at Emora Park, Bowenfels. Reservoir levels remained insufficient to restart WTP operations.

Late on Saturday night and into early Sunday morning, WTP operators constructed a temporary bypass to redirect water from the clear water tank directly into the potable reticulation connection for the WTP. A RFS potable water pump was connected to this bypass on Sunday morning and successfully provided the continuous carrier water flow required for stabilization of the WTP start up process. At 0900 on Sunday 12 October, the WTP successfully restarted and maintained continuous production for the first time since Thursday. Throughout Sunday morning external assistance intensified with RFS, Fire and Rescue NSW and private water carrying trucks from Sydney and Oberon being deployed.

By Sunday afternoon, pressure returned gradually to most parts of the network, aided by tanker support and Fish River inflows. Residual bursts and pressure fluctuations were addressed throughout Sunday night. By Monday 13 October, most customers had regained supply, and external tankers were stood down. Reservoirs reached operational

levels by 16 October, when automated WTP operation resumed.

The incident highlighted multiple systemic vulnerabilities, including infrastructure fragility, lack of network documentation, communication failures, delayed incident escalation, and inadequate crisis procedures. These lessons identified form the foundation for the recommendations later in this report.

The full event timeline is provided in Appendix A.

3. Impacts Assessment

The treated water network outage presented a range of impacts across the Lithgow community. These impacts affected public health, community wellbeing, essential services, business continuity and infrastructure. This section provides an assessment of those impacts.

Public Health Impacts

Loss of Access to Potable Water:
The outage resulted in the near complete loss of potable water across a large proportion of the Lithgow township networks businesses and residential customers.
Supported Independent Living (SIL) group homes, domestic violence shelters, aged-care facilities, medical clinics, and other high-need residents also lost access to safe drinking water. These groups typically have limited mobility and rely on reticulated water for hydration, hygiene, medication administration, and infection control.

Impact on Hygiene and Personal Care:
Residents were unable to bathe, wash hands, or manage basic hygiene, until limited public shower facilities were opened at the Tony Luchetti Showground and Lithgow Aquatic Centre. Aged residents and people with disability were disproportionately affected.

Impact on Medical and Clinical Services:
Clinics, ambulance stations, and first responders were impacted by the loss of water for sanitation, cooling equipment, and staff hygiene. Bottled water and tanker deliveries were required to maintain minimum operational standards.

Social and Community Impacts

Community Confusion and Information Gaps:
The absence of timely website updates, the reliance on Facebook, and repeated issuance of incorrect restoration timeframes caused significant confusion for residents. Many households did not know how long the outage would last, what protective or resilience measures to take, or where to access water.

Impacts on Vulnerable Populations:
Vulnerable groups—including the digitally disconnected, elderly residents, people experiencing homelessness, and those with cognitive impairments—were disproportionately affected due to the lack of direct notification systems.

Psychosocial Stress:
Uncertainty about water availability created heightened stress across the community. Reports were received of residents expressing frustration and, in isolated cases, directing abuse toward Council staff or their families.

Community Mobilisation:
Despite challenges, community organisations and local businesses mobilised to support water distribution, highlighting strong initial community resilience.

Economic Impacts

Business Disruption:
Many businesses were forced to close or significantly reduce operations, particularly food service outlets, childcare providers, gyms, and accommodation services (the water outage coincided with the high demand commercial accommodation requirements generated by the Bathurst 1000 race weekend).

Emergency Response Costs:
The outage generated substantial unplanned Council expenses, including from:

- Hire and mobilisation of water carts from Sydney, Bathurst, and Oberon.
- Overtime for staff and contractors.
- Road and network repair costs (Infrastructure damage).
- Lost water use charges income from customer base.

Environmental Impacts

Loss of Treated Water:
Large volumes of treated water were lost due to the break, subsequent discharge, and the draining of reservoirs.

Pavement Collapse and Erosion:
Significant ground movement occurred at Hassans Walls Road, including pavement collapse caused by prolonged water saturation. This required reconstruction and posed safety risks.

Flow-On Environmental Risks:
While no major contamination of waterways was recorded, rapid water release posed short-term risks of erosion and sediment movement.

Impact on Emergency Services

Fire and Rescue NSW / RFS:
Firefighting appliances committed substantial time and water tanker assets to support carrier-water supply attempts, reducing availability for bushfire response during a medium-risk period.

Summary of Impact

The breadth of impacts underscores the need for strengthened communication systems, resilient asset management, improved incident management capability, and investments in critical water infrastructure.

4. Root Cause Analysis

The root cause analysis (RCA) of the drinking water outage identifies the technical, operational, organisational, and systemic failures that allowed a localised leak to escalate into a full network collapse.

Immediate Causes

Dual Pipeline Rupture
Both the 100mm high-pressure main and the 450mm trunk main ruptured at Hassans Walls Road. The break caused rapid pressure loss, pavement failure, and uncontrolled water discharge.

Inoperable Critical Valve
The Shaft Street Reservoir outlet valve was found to be inoperable, preventing isolation of the trunk main. No contract divers or valve specialists were available.

Ground Saturation and Pavement Collapse
Water saturation compromised road structure, causing collapse and making excavation difficult.

Water Treatment Plant shut down
The inability to restart the WTP significantly restricted the ability to refill the depleted reservoirs and water network.

Contributing Causes

Incomplete and Outdated Network Mapping
Valve locations, flow directions, and interconnections were poorly documented. Staff relied on multiple aged paper maps with inconsistent markings, and personal knowledge.

No Valve Maintenance Records
Council had no formal records of valve service history. Valve operability and direction of travel could not be determined.

Inadequate Repair Materials
Council lacked essential repair clamps and fittings, particularly 450mm repair clamps, which had to be sourced from Bathurst Regional Council.

WTP Dependency on Reservoir-Fed Carrier Water
The Water Treatment Plant cannot start without clean carrier water to feed chemical dosing systems. When the network drained, carrier water was unavailable.

Lack of WTP Restart Procedures for Zero-Reservoir Events
No standard operating procedure existed for this scenario, resulting in repeated automated shutdowns.

Systemic Organisational causes

No Incident Management Structure (IMS) Implemented
Despite escalating impacts, no Incident Controller was appointed, no formal sections (Operations, Planning, Logistics) were formally structured, and no incident log was maintained.

Cultural Disconnect Between Field Staff and Senior Management
Outdoor staff felt they could not escalate concerns or contradict optimistic restoration estimates issued by senior management.

Inaccurate or Overly Optimistic Information Provided to Leadership
Advice given to senior management overstated likelihood of imminent restoration. This delayed scaling up of response.

Outdated Business Continuity SWP
Council's Business Continuity SWP did not include consideration of asset failures, WTP outage scenarios, or major line ruptures.

Over-Reliance on Facebook
Facebook was treated as the primary communication tool, preventing effective communication with residents not holding respective social media accounts.

Why's Analysis

Problem: The entire Lithgow treated water network drained and the WTP could not restart for 55 hours.

Why 1: Why did the network drain?
Because valves could not isolate the ruptured lines.

Why 2: Why could valves not isolate the lines?
Because critical valves were inoperable or their locations unknown.

Why 3: Why were valves inoperable/unmapped?
Because there was no systematic valve maintenance or mapping program.

Why 4: Why was there no program?
Because formal asset management programs were limited and often reliant on staff memory.

Why 5: Why was asset information reliant on staff memory?
Because Council had no formal detailed asset management system and accurate asset operation documentation.

Failure Pathway Summary

A localised leak escalated into a systemic collapse due to the confluence of:

- Asset fragility (rupture, inoperable valves)
- Lack of documentation and mapping
- Inadequate repair materials
- Organisational communication failures
- Absence of IMS and delayed escalation
- WTP design limitations
- Cultural issues preventing upward communication

These failures were not independent; rather, they compounded each other, resulting in a cascading system failure that significantly prolonged outage duration and increased community impact.

Immediate Causes:

- Rupture of 100mm HP and 450mm mains.
- Inoperable reservoir valve.

Contributing Causes:

- No accurate system schematics.
- No valve maintenance records.
- Insufficient repair stock.
- WTP chemical dosing dependencies.

Systemic Root Causes:

- No Incident Management Structure.
- Overreliance on Facebook.

- Cultural issues inhibiting staff escalation.
- Outdated SWPs and training gaps.

5. Response Evaluation

The response to the water outage involved significant effort from operational staff, contractors, external agencies, and neighbouring councils. However, the overall effectiveness of the response was constrained by structural, procedural, and communication limitations.
This section evaluates the response across four domains: technical response, communication, incident management, and staff welfare/logistics.

Technical Response

Field Operations and Excavation
Field staff responded promptly to reports of a leak on Hassans Walls Road. However, saturated subgrade conditions and pavement instability significantly hindered excavation and repair efforts. The collapse of pavement on 10 October further complicated operations.

Valve Isolation Attempts
Technical staff attempted to isolate the rupture by manipulating upstream and downstream valves. These efforts were obstructed by Inoperable valves (e.g., Shaft Street outlet valve), lack of accurate valve maps and an incomplete understanding of valve direction and service history. As a result, isolation was not achieved and the network drained.

Water Treatment Plant (WTP) Restart Failures
After the WTP was shut down at 1000 on 9 October, repeated attempts to restart it failed due to the lack of continuous treated carrier water. The WTP's chemical dosing systems require uninterrupted flow, and fluctuations trigger automated shutdowns. Efforts to supply carrier water using RFS tankers, potable water carts, backflow from reservoirs (which were empty) were unsuccessful.
A bypass system was eventually engineered late on 11 October, enabling a successful restart at 0900 on 12 October.

Inventory and Equipment Limitations
Key equipment constraints included that no 450mm repair clamps were available locally (sourced from Bathurst regional Council) and ageing plant required increased maintenance.

Support from External Agencies
Bathurst Regional Council, Oberon, Lithgow and Sydney-based carriers, RFS, and Fire

and Rescue NSW all provided support. This assistance was essential for final WTP restart and community water distribution.

Communication Response

Over-Reliance on Facebook
Facebook was used as the primary communication channel throughout the event. This excluded a range of residents and customers.

Inaccurate Restoration Timeframes
Public updates on Friday and Saturday repeatedly stated that water would be restored "within hours" or by a set timeframe, despite technical staff knowing this was not likely to be achieved. These inaccurate estimates increased community frustration and concern, prevented water conservation behaviours and reduced trust in subsequent Council messaging.

Communication with Vulnerable Groups
No structured process existed for contacting SIL homes, DV shelters, aged care, or medical facilities.

Councillor Communication
Councillors contacted media independently, leading to mixed messages and public confusion.

Incident Management Response

No Incident Management Structure (IMS)
Despite the scale of the event, the established Incident Management Structure was not activated.
No Incident Controller was appointed, and senior management continued operating under normal organisational hierarchy.

Lack of Incident Documentation
No incident log, decision register, or operational record was maintained. Key decisions and timelines were tracked only through email chains and MS Teams messages.

Delayed Response Scaling
Despite reservoirs draining and WTP restart failures, escalation did not occur until Sunday morning. This was due to over optimistic internal specialist technical advice, a lack of real-time situational awareness and no established escalation triggers.

Coordination with Emergency Services
LEOCON and LEMO maintained communication but did not activate an Emergency Operations Centre (EOC). While technically appropriate, stronger coordination would have supported logistics and public messaging.

Staff Management and Welfare Response

Fatigue Management
Operational outdoors staff worked excessive extended hours, some using plant and equipment, with limited rest. No formal fatigue management protocols were present, identified or were activated.

Logistics and Resource Access
Gaps included:
Limited access to stores after hours.
Lack of available credit cards for supervisors for immediate purchasing.
Delays in providing food, water, and PPE to operational staff.

Training and Preparedness
New staff reported receiving an induction to incident or crisis management procedures during their time with Council or through an on-boarding process for newer staff.
Training, scenario and emergency exercises are currently not conducted at intervals frequent enough for appropriate application during emergency events.

Psychological and Emotional Impact
Some staff reported community frustration being directed at them and their families.
Structured post-event debriefs were conducted four days following the event.

Overall response Assessment

The overall operational effort was strong and committed, but the response was hampered by:

- Lack of formal Incident Management System (IMS) activation
- Missing asset management documentation and scenario event planning
- Inadequate infrastructure resilience
- Communication system limitations and accuracy

6. Lessons Learned

The October 2025 drinking water outage revealed numerous lessons across operations, communication, planning, governance, incident management, and organisational culture. These lessons identify both the gaps that allowed the incident to escalate and the improvements needed to prevent similar failures in the future.

Operational Lessons

- Accurate and up-to-date network schematics are essential for effective emergency response.
- Valve operability must be known at all times; reliance on undocumented valve status significantly delays isolation.
- WTP processes must include restart procedures for zero-reservoir conditions.
- Emergency carrier-water pathways and redundancy must be engineered in advance, not improvised during a crisis.
- Staff must be trained in WTP failure modes and chemical dosing dependencies.
- Repair materials (e.g., clamps, adhesives, fittings) must be stocked in adequate quantities and stored appropriately.
- Critical tasks such as excavation and plant operation require stable ground conditions; subsidence risks need pre-planning (hyrdo vacuum plant).

Asset management Lessons

- Asset documentation cannot rely on staff memory; a digital asset management system is essential.
- Hard-copy maps degrade, become outdated, and should not be the primary operational reference.
- Online and softcopy mapping must be kept contemporary and updated to ensure information from asset management systems and field based observations are aligned
- Valve maintenance, inspection, and servicing must be performed regularly and recorded formally.
- Repair history and component traceability must be documented to support future troubleshooting.
- Critical inventory must be managed systematically, with minimum stock levels defined for high-risk assets.

Water Treatment Plant Lessons

- The WTP's reliance on reservoir backflow for carrier water is a single-point failure that must be redesigned.
- Bypass systems and redundancy pumps should be designed, tested, and documented in advance.
- SCADA alarm thresholds and trending must reflect operational risk levels.
- Operators and staff must have authority to escalate technical concerns quickly.

Communication Lessons

- Crisis communication cannot rely on Facebook alone.
- Website, phone system, SMS, radio, and TV channels must be available and updated promptly.
- Single-point dependency (one staff member) for website/telecom updates is a major organisational risk.
- Communication to vulnerable groups must be proactive, structured, and supported by a maintained contact database.
- Inaccurate restoration forecasts damage credibility and reduce community resilience. Messaging must reflect known conditions and avoid optimism bias.
- Councillors contacting the media independently creates mixed messages and should be managed through protocol.

Incident Management Lessons

- Failure to activate an Incident Management Structure significantly affects coordination and decision-making.
- Major incidents require an Incident Controller, functional sections, and documented logs. None of these were implemented during the event, resulting in poor situational awareness.
- Response escalation must be tied to formal triggers (reservoir depletion, WTP shutdown, multiple main failures).
- Coordination with emergency services should be formalised and documented.
- MS Teams chat messages are not a substitute for structured situation reports or operational logging.

Organisational Culture Lessons

- Operational staff reported discomfort escalating concerns or challenging inaccurate internal assumptions.
- A culture where issues "flow upward" accurately and without judgment is essential.
- Senior leadership requires more structured access to technical briefings and operational reality checks.

- Decision-making during emergencies must prioritise technical evidence, not assumptions or optimism.
- Staff at all levels need clarity regarding communication pathways during incidents.

Staff Welfare and Logistics Lessons

- Fatigue management protocols must be activated early during potentially prolonged incidents.
- Staff require reliable access to food, water, PPE, and rest facilities.
- Emergency access to stores and purchasing cards must be pre-authorised.
- New and existing staff require incident/crisis-management orientation, including emergency responsibilities and escalation processes.
- Structured post-event debriefing should occur for both operational and psychological wellbeing.

Governance and Planning Lessons

- The approved Business Continuity Safe Work Procedure was outdated and insufficient for asset failures. Essential emergency functions were not included.
- Incident Management process, roles and responsibilities must be defined in policy and procedures.
- Multi-agency incident planning and exercises should occur routinely.

Strategic Lessons

- The outage revealed that multiple systemic weaknesses, asset fragility, poor documentation, cultural barriers, and communication limitations, interacted to produce a cascading system failure.
- The event demonstrates the need for integrated resilience planning, not isolated procedural fixes.
- Long-term capital investment is essential to reduce the likelihood of future catastrophic asset failures.
- Organisational incident response reform and improved communication culture are as important as infrastructure upgrades

7. Compliance and Legislative Alignment

The October 2025 outage revealed several areas where compliance must be strengthened to meet wider legal and relevant agency policy expectations.

NSW Public Health Act 2010 (Water Quality obligations)

Under the NSW Public Health Act and Public Health Regulation, water suppliers must:

- Ensure the safety, wholesomeness, and reliability of drinking water.
- Maintain operational systems to prevent contamination and public health risk.
- Implement Drinking Water Quality Management Systems consistent with the Australian Drinking Water Guidelines (ADWG).
- Notify NSW Health of any significant supply failures that affect safety or access.

Relevance to the incident:

• Prolonged loss of potable supply to essential services increased public health risk.
• Inability to restart the WTP demonstrates vulnerability in achieving safe and continuous supply.
• Communication delays impacted the community's ability to respond safely.

Australian Drinking Water Guidelines (ADWG)

ADWG outlines requirements for safe drinking water, including:

- Multiple barrier protection
- Systematic risk management
- Documented operational procedures
- Incident and emergency response capability
- Community communication during supply issues

Relevance to the incident:

• Lack of WTP restart SOP breached process control expectations.
• Absence of effective incident management structure limited ability to mitigate risks.
• Reliance on a single communications channel contradicted ADWG communication guidance.

NSW Local Government Act 1993

The Act requires Councils to:

- Provide essential services to communities.
- Manage risks to public health and safety.
- Maintain infrastructure and assets.

- Ensure transparency, proper governance, and accountability.

Relevance to the incident:
• Asset management documentation gaps show deficiencies in infrastructure stewardship.
• Communications gaps and inaccurate public statements risk breaching transparency obligations.
• Lack of incident logging reduces accountability.

NSW Work Health and Safety Act 2011 (WHS)

Council has obligations to:

- Ensure worker safety during emergency response operations.
- Provide adequate training, supervision, and resources.
- Manage fatigue and psychological hazards.
- Maintain safe equipment and work environments.

Relevance to the incident:
• Fatigue risks increased due to long shifts without formal protocols in place or activated.
• Staff lacked clear incident management training or safe operating procedures for WTP restart attempts.
• Declining material integrity (e.g., adhesives in overheated containers) poses WHS risks.

NSW State Emergency Management Plan (EMPLAN)

EMPLAN and the State Emergency Management framework require:

- Integrated emergency coordination across agencies.
- Activation of appropriate control structures (LEOCON, EOC activation).
- Effective public communication during emergencies.
- Responsibility sharing between Council and State agencies.

Relevance to the incident:
• Council did not activate an Incident Management Structure.
• Communication gaps impacted State agencies' situational awareness.
• Coordination with LEMO/LEOCON occurred but not at the scale required.

NSW Critical Infrastructure Resilience framework

Drinking water networks are designated critical infrastructure and must be:

- Resilient to outages and disruptions
- Managed with risk-based planning
- Supported by redundancy, monitoring, and recovery capability

Relevance to the incident:

• WTP's lack of redundancy for carrier-water supply increased vulnerability.
• Asset mapping and valve failure represent infrastructure resilience gaps.

Summary of Compliance Gaps Identified

- Insufficient drinking water risk management (ADWG compliance).
- No WTP emergency restart procedure (Public Health and ADWG breach).
- Lack of effective incident management structure (EMPLAN expectation not met).
- Outdated BCP and incomplete asset documentation (Local Government Act and risk policy gaps).
- WHS risks unmitigated (fatigue, material degradation, inadequate training).

8. Recommendations

The identified recommendations are derived from technical analysis, organisational review, community impact assessment, and emergency management principles.

Permanent risk reduction requires structural, technological, and cultural improvements across Council.

Communication and Public Information

1. Develop and Implement a multi-channel communications strategy and communications plan for community information dissemination during incident responses. This should incorporate best practice emergency and incident management communications training and messaging practices and include identifying lead Council spokesperson and establishment of authorisation process for key incident messaging. Such a plan may include multiple social media platform accounts, Council website structure accessibility, and pre-arranged relationship development with local radio and television and emergency broadcasters.
   Priority: High

2. Investigate options from existing Council operating platforms, partner agencies or proprietary products for a SMS or voice alert capability for delivery of critical council incident messaging. Investigation should also consider options for use of, and use criteria for, existing multi agency regional alert mechanisms.
   Priority: Medium

3. Establish a secure initial advice contact register focused on the highest risk groups and services (i.e. Community Services, SIL homes, DV shelters, aged care, and vulnerable residents. Investigation into these options should also consider assessment of existing similar databases or contact schedules held by Council or other agencies and organisations, and compliance with privacy management.
   Priority: Medium

4. Establish multiple redundancy options for uploading information on the Council website, social media accounts and voice messaging systems.
   Priority: Medium

5. Develop SWP and instructional system use guides for the Council customer facing voice messaging system.
   Priority: Low

6. Deliver media training for Council senior management, Mayor and Deputy Mayor.
   Priority: High

7. Develop and implement formal Council Media Conference planning and preparation guidelines.
   Priority: Low

Incident Management

8. Develop and implement an Incident Management System SWP based on the Australian Inter-agencies Incident Management System (AIIMS). The SWP should include the identification of Incident Management Team key personnel and roles and key IMS practices including the scaling up of resources and public information management. General SWP considerations are to also include, although not restricted to, triggers for incident designation, incident room facilities, authority and delegation requirements, the requirement to maintain an incident log and structured operational and wellbeing staff debriefs.
   Priority: High

9. Establish a major incident hotline, or similar, as a direct means for Council employees to contact Council senior management.
   Priority: High

10. Develop an emergency contact and response booklet to be held in Council vehicles and key staff offices, updated on a scheduled basis to ensure accuracy and currency of information and contact details and procedures.
    Priority: Medium

11. Establish a program of regular engagement with outdoor staff and Council Executive to improve the outdoor staff awareness of ELT and Council strategies and plans. Any program should include addressing the ability, channels, means and confidence of outdoor staff to contact Council Executive directly if required (This should include directly providing staff with contact details of all Directors and General Manager).
    Priority: High

12. Review and update the Council Business Continuity SWP to include asset event scenarios, referral to incident management practices and current relevant contact listings.
    Priority: Medium

Asset management

13. Develop and maintain a digitised and geo-spatial water network schematic and inventory database that definitively and accurately locates assets. The database should be functional on mobile devices for in-field use and off-line editing, as well as holding relevant asset details and specific asset operating information (including record valve operating direction and records of test actuations).
    Priority: High

14. Develop and Implement a structured program of valve and other appurtenances, inspection, servicing and replacement. The Includes a scheduled program of confined area dive inspections where required.
    Priority: High

15. Establish process and system for recording history of water line inspections, servicing and repair or replacement. Including data management of location and method and type of repair implemented.
    Priority: High

16. Evaluate and consider the installation of automated valves at critical network locations.
    Priority: High

17. Audit depot and field storage locations and facilities for appropriate climate-controlled or covered storage solutions for temperature and UV sensitive materials. Replace identified degraded items and establish inventory control measures, including a SWP for minimum equipment and materials type and quantity to be carried on Councils key water network servicing vehicles.
    Priority: Medium

18. Establish operating stock level requirements for critical components, including repair clamps to be maintained for water network line repairs, and a units held level to trigger a resupply order considering potential delivery lead in times. Procure essential standby items to the defined minimum stock level (repair clamps in required sizes, gaskets, adhesive kits, standard pipe spares).
    Priority: High

19. Conduct a water network plant condition audit and develop a prioritised capital replacement and purchase plan for ageing plant, critical infrastructure components and operating tools (including pumps and key WTP spares). Consideration is to be given to requirements for Hydro Excavation equipment to be held and operated directly by Council.
    Priority: High

20. Further develop an Operation and Maintenance Manual and operating procedures for the Oakey Park Water Treatment Plant. Involve relevant staff in the development of the Operation and Maintenance Manual and the associated SWPs. SWPs to include consideration of required staffing levels for WTP operation, approvals process for WTP shutdown and be informed by scenario based contingency planning.
    Priority: Medium

21. Implement actions from an audit and review of Council's Drinking Water Quality Management System.
    Priority: Medium

22. Review the opportunity for use and engagement of contracted services for incident and unplanned repair, maintenance or management of the water network. The review should consider establishing pre-qualified contract services within Council's contractor management requirements to ensure reduced delay or procedural constraints to engagement at short or urgent notice for time critical events.
    Priority: Medium

23. Review Council Credit Card Usage SWP with consideration of purchasing requirements by outdoor staff implementing response measures during incident and unplanned events.
    Priority: Medium

Staff Management

24. Review and implement actions, changes and training required on the Council Fatigue Management SWP, inclusive of shift rotation and maximum shift durations for incident or emergency operations.
    Priority: High

25. Review current outdoor staff operational equipment and Personal Protective Equipment (PPE) against best industry practices and contemporary equipment improvements. Implement an upgrade program of equipment and PPE where identified as lacking or requiring upgrade or replacement.
    Priority: High

26. Review staff training levels and develop a structured and practical training needs analysis per position, schedule and implementation program required to effectively manage and maintain Council infrastructure assets and systems
    Priority: High

9. Glossary and Acronyms

ADWG – Australian Drinking Water Guidelines
National framework for managing drinking water safety, risk, and quality.

Asset Management System
A digital or physical system used to record, track, and manage Council's physical water assets (pipes, valves, reservoirs, pumps).

BCP – Business Continuity Plan
A plan outlining how Council maintains essential functions during disruptions.

Carrier Water
Treated water used to feed the chemical dosing system within the Water Treatment Plant (WTP). Continuous flow is required to maintain correct chemical dosing.

Chemical Dosing System
Equipment within the WTP that injects chemicals (chlorine, soda ash, polymers) into water for treatment.

Crisis Communications Plan
A structured plan detailing how Council communicates during emergency events using multiple channels.

DV – Domestic Violence (Shelters / Services)
Facilities providing support to individuals experiencing domestic or family violence.

EOC – Emergency Operations Centre
The physical or virtual coordination point for emergency response management led by NSW Police (LEOCON).

ELT – Executive Leadership Team
Council's Senior Management and Executive decision-making group.
Comprising the General Manager, Director Water, Waste and Waste Water, Director Infrastructure, Director Finance and Governance and the Director People and Places.

EMPLAN – NSW Emergency Management Plan
State-wide framework outlining emergency roles, responsibilities, and agency coordination.

GIS – Geographic Information System
A digital mapping system enabling real-time and accurate visualisation of Council's water network assets.

High-Pressure Main (HP Main)
A smaller, high-pressure water line (100mm in this event) that delivers treated water to distribution zones.

IMS – Incident Management Structure
A structured emergency management model defining roles such as Incident Controller, Operations, Planning, Logistics, and Public Information.

Incident Controller
The person with delegated authority to coordinate all aspects of an emergency incident.

LCC – Lithgow City Council
The local government authority providing local government administration and service of the Lithgow Local Government Area.

LEMC – Local Emergency Management Committee
A multi-agency group responsible for local emergency preparedness and planning.

LEMO – Local Emergency Management Officer
Council's nominated officer responsible for supporting emergency coordination and liaising with LEOCON.

LEOCON – Local Emergency Operations Controller (NSW Police)
The designated officer responsible for coordinating emergency operations across agencies.

Network Isolation
The process of closing valves or rerouting water to isolate a leak or repair site.

NSW Health (LHD)
The Local Health District authority responsible for public health oversight and hospital operations.

Pavement Collapse
Structural failure of the road surface due to undermining and water saturation, as occurred on Hassans Walls Road.

Public Information Function
The incident management role responsible for accurate, timely community information during emergencies.

Reservoir Backflow
Water returning from reservoirs into the clear water tank at the WTP—critical for maintaining carrier-water supply.

SCADA – Supervisory Control and Data Acquisition System
Automated digital monitoring and control system used at the WTP and across the water network.

SIL – Supported Independent Living
Group homes for individuals with disability who require daily support and safe water access.

SMS Mass Notification System
A multi-channel alert system capable of sending emergency texts, emails, and voice alerts to large populations.

SWP – Standard Working Procedure
Council procedures developed and implemented to standardise operations, ensure legal compliance, and protect the Council from risk.

Trunk Main
A large-diameter water pipeline (450mm in this event) used to transport treated water between key reservoirs.

Valve Operability
The functional status of a water network valve, including whether it can be located, opened, closed, or partially operated.

Virtual Messenger (Phone System)
Council's automated phone messaging system used for customer service communications.

WHS – Work Health and Safety (NSW)
Legislation requiring implementation of safe work systems and procedures, including fatigue management, and risk mitigation across work locations.

WTP – Oakey Park Water Treatment Plant
Lithgow City Council owned and operated facility responsible for producing safe drinking water through filtration, disinfection, and chemical dosing processes.

Appendix A –Timeline of Events

Wednesday 8 October 2025 – Thursday 16 October 2025.

Time (24hrs)	Event or Action	Additional detail
Wednesday 8 October		
1630	Inspection of reported minor leak on Hassans Walls Road. Further inspection requiring surface excavation scheduled for Thursday morning.	Inspection identified a light seepage emerging from road pavement. Source of original leak report not determined by review.
Thursday 9 October		
0200	Pressure reduction detected in the water network.	Time of pressure reduction is known from WTP system report reviewed by staff at 0700.
0645	Visual inspection of Hassans Walls Road leak.	Slight increase in water seepage from previous inspection 1630 8 October. Suspected the leak is originating from a 450mm line.
0700	Unidentified break or leak confirmed through review of Water Treatment Plant system pressure report.	
0730	LCC backhoe arrives at Hassans Walls Road site.	Sub-pavement materials observed as saturated and waterlogged. Backhoe was unable to operate at site of leakage as the saturated pavement sunk under the weight of the vehicle. The site was 'spongy' to walk on.
0900	Water line erupts into a fountain of water at high pressure and breaks through pavement of Hassans Walls Road.	Staff unable to visually confirm which water line had burst. The exact water lines that were damaged were still unable to be confirmed at the time of the line erupting due to the presence of multiple water lines in the that immediate vicinity, limited identification of isolation valve connections to specific lines, and no excavation having been able to be commenced.
1000	Water Treatment Plant (WTP) is shut down to assist in depressurising the water network.	WTP shut down to prevent continuing inflow of water supply to reservoirs and water network while depressurising takes place. Aim to reduce pressure feeding the lines on Hassans Walls Road to provide a safe

		working environment for repairs to be undertaken and prevent damage to other systems.
1000-1300	Shaft Street Reservoir outlet valve spindle unable to be activated and confirmed as inoperable. Staff commenced locating and working line valves to isolate sections of the main line network. Staff implemented a process of elimination through shutting down each water mains line in the vicinity of the leak to identify the line or lines leaking.	Insta-Valve specialists are contacted and advise they were not available to assist. Groundscan in Bathurst was also unavailable when contacted. No contract confined space divers available to inspect Shaft Street reservoir valve. Valve and line locations marked on a range of paper schematics of varying age, accuracy and scale. No current full network diagram available to locate critical assets.
1200	Shaft Street, Cook Street High and Cook Street Low reservoirs are isolated from the line network.	
1230	Commencement of opening of scour valves for the Shaft Street Reservoir.	Due to inoperable outlet valve, the Shaft Street Reservoir was required to be drained through the opening of scour valves. This draining had to be conducted in a controlled procedure to reduce risk of surface flooding to adjoining properties.
1300-1500	General Manager (GM) was notified of the leak. At this stage, impact was identified as localised only.	Time and source of notification not recorded.
1527	Council uploads social media post advising of the break and repair works to the Lithgow City Council Facebook page.	*Council advises that the water supply in the area of the Hassans Walls Road, Lithgow may be affected due to ongoing emergency repairs on a water mains break.* *Residents on the Hassans Walls Road and surrounding streets in Lithgow may experience low to no water whilst repairs take place.* *Council cannot advise a time for the completion of repairs but will aim to minimise the period of disruption*.
1700	Network pressure remains above determined safe level for site excavation and repair works to commence.	The damaged lines were unable to be isolated using the network valves which were inoperable or unable to be located. Valve inoperability and the inability to locate upstream or downstream valves results in reservoirs and network lines required to be

		drained to reduce pressure in the damaged lines.
Friday 10 October		
0800 - 1000	Impacted area of Hassans Walls Road pavement collapses inward due to significant erosion and water saturation of substrate from leakage. No visual confirmation as to which line,100mm or 450mm, is leaking.	
1000	Council updates 9/10/25 Facebook post.	*Council advises that the water supply in the area of the Hassans Walls Road, Lithgow may be affected due to ongoing emergency repairs on a water mains break. The mains break has continued as the teams work to maintain supply whilst working to shutdown the main in the Hassans Walls Road. Residents on the Hassans Walls Road and surrounding streets in Lithgow may experience low pressure, no water or dirty water for a period whilst repairs take place. Council cannot advise a time for the completion of repairs but will aim to make repairs as quickly as possible and return the lines to full service.*
1200	Cook St High reservoir shut to de-pressure main.	The lines with breaks still retained pressure until the Cook Street reservoir feed into the network was shut off.
1310	Council advised by the Lithgow Ambulance Station that they had no reticulated water.	
1330	Excavation of the Hassans Walls Road site reveals that both a 100mm High pressure and the 450mm mains water line have been damaged and are both leaking.	
1400	Potable water cart sourced to service Cooinda Nursing Home and Ambulance Station.	
	Council potable Water Cart servicing commences serving Lithgow Workies.	
1330	Treated water network confirmed as drained.	First recorded Council managed incident where the main Lithgow treated water network has been completely drained.

1345	Council updates 9/10/25 Facebook post	*There are wide scale water outages in Lithgow as we continue to resolve the burst water main issue.*
1422	Local Emergency Management Committee (LEMC) notified via email, with no time frame of repair and re-supply provided.	Some EMS not on LEMC/LCC contact list.
1430	High-risk sites (medical, emergency and education/childcare sites) phoned by Council to inform them of the situation.	
1441	Council Executive Leadership Team (ELT) meeting to discuss water supply event confirmed for 1545.	
1515	Attempts to update Council's Virtual Messager message.	
1515	Email update sent to Councillors and ELT.	
1000-1700	Council Customer Service receives over 570 emails in Virtual Office inbox from customers, and 57 emails received through the council direct email.	
1545	Council updates 9/10/25 Facebook post.	*Water Outage Update 3.45pm Friday 10 October* *Council has confirmed that the initial line damage was the bursting of the 450mm water main, this line burst also broke the adjacent 100mm high pressure water line. There are reports of water outages and changes to visual water quality and pressure across a broad area of Lithgow include South Bowenfels, Oakey Park, Lithgow and surrounds.* *Council crews continue to work to repair both lines. At this stage, we expect that the 100mm line will be fixed and a limited water reconnection to customers in place by early evening. Work will then continue on the large main, but this does not affect supply to houses and businesses.*
1545	ELT meeting held.	ELT advised water supply will be operational for customers by Friday evening.
1600	Bathurst Regional Council water carrier truck is placed on standby for assistance if required.	
1600	Local Emergency Management Officer (LEOCON – NSW Police) discusses with Council's Local Emergency Management	LEMO continues to update LEOCON at least two-hourly through the outage.

	Officer (LEMO)and both agree that no Emergency Operations Centre (EOC) is to be activated.	
1630	Council unable to update water outage information on Council website or Virtual Messenger voicemail.	Council website management staff member with understanding of the website and Virtual Messenger not available due to leave. Voicemail update requested to ease pressure on customer service. IT staff on duty unaware voicemail could be added directly to the phone.
1630	Council phones switched to Virtual Office after hours service.	
1630	Repair clamp applied to 100mm HP (High Pressure) line.	Clamp sourced from LCC Wallerawang Depot.
1630 – 0900 Sunday 11 October	Multiple ongoing attempts to re-start WTP to commence refilling of reservoirs and line network. Reservoirs and reverse flow of the main trunk that could be used to re-fill the clear water tank were at low levels or empty. No means of providing a continuous supply of carrier water was identified for input into the WTP start up system.	Carrier water is required to carry chemical treatment into the WTP (via the chemical feeder lines which doses chlorine, soda-ash and polyelectrolytes for example). Carrier water is required to be a clear source of treated water to reduce risk of chemical neutralisation or non-planned chemical reactions. WTP carrier water (supplies chemical feeder lines) is usually sourced from the clear water tank which is filled from the treated water outlet or via reverse flow when required from the reservoir and main trunk line network. With no reverse flow available due to nil or low water levels across the network the clear water tank also reached a fill level below the threshold for supplying carrier water to the WTP chemical feeder lines. Carrier water is required to be a continuous flow. A break in the flow of carrier water affects chemical treatment dose levels in the water triggering automated shut down and requires the WTP to be re-started again.
1830	Council 9/10/25 Facebook post updated.	*Council has repaired the damaged Lithgow 100mm high pressure water line. As the repaired line is recharged with water over the next few hours along its whole length*

		residents will receive normal water services. Due to the way the water lines are connected across Lithgow the recharging of the line and filling of network reservoirs will occur sooner in some locations than in others. *Due to the need to fill the Bowenfels reservoir from a different water line residents of Bowenfels will not have service until later this evening. Council continues to work urgently to fix the Bowenfels supply.*
2030	Council 9/10/25 Facebook post updated.	*Council has repaired and is recharging the pressure line servicing the Lithgow area. As the repaired line is recharged with water over the next few hours along its whole length residents will receive normal water services. This will continue until full service is returned later tonight.* *The repairs on the line servicing the Bowenfels area are nearing completion. Once repaired the line will be recharged and services restored late tonight. Council continues to work urgently to fix the Bowenfels supply.*
2115	Repair clamp applied to 450mm main line. Hydrovac contractor sourced to assist in excavation.	Nil 450mm repair clamps held in current stock by LCC. 450mm repair clamp sourced from Bathurst Regional Council.
Saturday 11 October		
0300	WTP operators departed site after multiple attempts to restart WTP.	
0600	Water NSW contacted and requested to connect the Fish River water supply for Lithgow reservoir resupply.	
0630	Director WWW advised WTP was unable to be re-started.	
0700	Fish River supply connected to Lithgow reservoir network and flowing at 35 l/s.	WNSW required to physically attend site to connect the Fish River network. Standard infill flow rate from the Oakey Park WTP is 190 l/s.
0700	Council make arrangements for public showers to be opened at Tony Luchetti Showground and the Lithgow Aquatic	Council staff are arranged to support orderly queues for any shower sites.

	Centre. Free entry to the pool also arranged for the extent of the outage.	
0725	Council upload new Facebook post.	*The water network had depleted more than expected and we are about to source supply from Fish River within 30 minutes. It may still take a couple of hours for enough water to be available to provide water to houses and residents and the pressure is likely to be limited.* *As the reservoirs fill during the day it is anticipated that the pressure issues will resolve, and water supply will return to normal to all areas.* *We are making arrangement for water and standby from Bathurst Council.* *Public Showers will be open at Tony Luchetti Sportsfield (the Showground) from 8am.*
0800	Calls made to Bathurst Regional Council to request assistance in the form of a water cart and operator.	Bathurst Regional Council send a machine and operator. The operator was stood down at about 8pm and was driven home by Lithgow Council staff. The machine remained, for operation by Council staff.
0830	ELT, Mayor and Deputy Mayor meet in Council offices. Mayor, GM and ELT doorknock in the locality of the break and Main Street businesses.	Meeting advised that water network supply to customers will be operational by 1300hrs.
0830 - 1900	RFS trucks commence delivering water to the WTP in attempts to deliver continuous supply of carrier water for re-start procedure. Multiple ongoing attempts to re-start WTP to commence refilling of reservoirs and line network. Reservoirs remain empty.	RFS and Fire and Rescue appliances have potential for contaminated tanks due to previous water loads from non-treated sources. WTP carrier water is required to be clean or treated prior to input. Input to WTP via direct flow from water tankers is not able to be sustained at a continuous flow rate. Inability to sustain continuous flow rate of chemical dosed clean or treated carrier water results in automated WTP system shut downs.
0900	Council updates 0725 Facebook post.	*The water network has commenced recharging with supply from Fish River and many residents are already noticing this. It may still take a couple more hours for enough water to be available to provide water to houses and residents and the pressure is likely to be limited.*

		As the reservoirs fill during the next 24 hours it is anticipated that the pressure issues will resolve, and water supply will return to normal to all areas.
0930	Notice and update on the water outage event uploaded on Council website. Duplicate of message present on Council's Facebook page.	
1000	Local business led initiative (Wild Wolgan Spring Water) commences to supply container drinking water through a distribution point established at Tony Luchetti Showgrounds.	
1039	Council posts onto social media a video message from the Mayor of Lithgow advising the water network will be operational and resupplying customers by 1300hrs.	*Please see attached message from Council's Mayor Cassandra Coleman providing an update on the water situation in Lithgow. We expect water supply to return in a couple of hours.*
1045	Mayor, GM and ELT doorknock in the locality of the break and Main Street businesses.	
1100	Council's LEMO makes a formal request to the LEOCON to make use of the National Messaging System to improve Council's messaging and ensure greater awareness across the LGA.	The LEOCON accepts the request and escalates the request through to the State Emergency Operations Centre. This request is declined. Council is informed that the request isn't an approved use of the system.
1400	Reported verbal abuse of family members of staff by members of the public referencing the water outage.	
1530	Bathurst Regional Council water truck requested to assist with water supply to residents in Bowenfels.	Positioned on arrival at Emora Park.
1700	Council updates 0725 Facebook post and website to reflect advice that the network will be operational Saturday evening.	*This afternoon many areas of Lithgow have started to receive water through the filling of the water network. Council is aware that there are still some areas across the town, like Bowenfels, that are only now starting to have water reaching their network lines. Water from the Fish River water scheme will by early this evening have recharged the Lithgow waterline network providing water to all residents. A waterline network recharge of the extent that has taken place today has never occurred before in Lithgow and the technical teams working on it have*

		had to deal with a range of issues this has presented. *The Fish River scheme and the Lithgow Water Treatment Plant at Oakey Park will shortly commence recharging the local reservoirs that were depleted during the past 24 hours. Until these reservoirs are filled the water pressure across the Lithgow network may still be lower than is normally experienced. The local reservoirs are expected to be full by Sunday morning.*
1830	WTP staff commence construction of a bypass line and pipework to provide alternate means of supplying the chemical feeder lines from the clear water tank.	
2000	Water tankers continue to supply WTP in attempts to provide for carrier water. WTP start up attempts continue to activate auto stop.	
2120	Council uploads new Facebook post advising water collection points at Tony Luchetti Show grounds and Emora Park. Bathurst Regional Council water truck is stationed to supply at Emora Park.	*Lithgow Water Collection Locations - Showgrounds and Emora Park* *For those residents that may still not have a water reconnection Council has established water collection points at;* *1. The Tony Luchetti Showgrounds (George Coates Ave) and* *2. Emora Park, Landa Street in Bowenfels.* *These collection points will be open until midnight tonight (Saturday).*
Sunday 12 October		
0100	WTP operators depart site after continuing attempts to restart WTP throughout Saturday.	
0700	ELT meets. ELT also meets at intervals throughout Sunday.	Meeting advised that it is now unknown when water supply will be operational for customers. Public messaging adjusted to reflect this advice.
0730-1000	Potable water carts sourced from Sydney to supply residential network.	All water carts focussed initially on Landa Street, Bowenfels. Water refill for water carts sourced from Wallerawang.

		Sydney sourced: Carrier 1 arrived 1045/Carrier 2 1110/Carrier 3 1300 and Oberon Sourced: Arrived 1400 RFS: 1x15,000 and 1x14,000 water tankers from Hawkesbury District.
0800	Rapid Relief Team drinking bottles ordered (2600 bottles). Departed Penrith 0900.	
0835	Council uploads new Facebook post with situation update.	*Sunday Water Collection Locations - Showgrounds and Emora Park* *For those residents that may still not have a water reconnection Council has established water collection points from 9.00am this morning at;* *1. The Tony Luchetti Showgrounds (George Coates Ave) and* *2. Emora Park, Landa Street in Bowenfels.* *These collection points will be open throughout today while some locations are still limited in water supply.*
0900	2 RFS water tankers (1 from Hazelbrook 13000L and 1 from Capertee 9000L)	RFS watercarts dedicated resource to the WTP for re-fill of the clear water tank.
0900	WTP achieves successful start-up and maintains treated outlet flow.	Start-up achieved following new by-pass system constructed and removal of water meter from carrier water line. This modification allows connection of RFS portable water pump to pump water from the WTP clear water tank (1,000,000 litres) into the start-up treatment cells, thereby providing a continuous flow of clean carrier water.
1015	WTP operating at full capacity and maintaining continuous flow of treated water into the network.	0.5M/L per hour
1033	Council places new Facebook post and website update advising of the specific Council Water Outage Hotline	*Water Outage Hotline - 6354 9900* *Council has set up a Hotline for residents that require assistance and are unable to drive to the collection points, or are physically unable to collect water due to health issues or injuries.* *The Hotline phone number is 6354 9900.*
1145	Council places further Facebook post advising of the Water Outage Hotline	*Water Outage Hotline - 6354 9900* *Council has set up a Hotline for residents that require assistance and are unable to drive to the collection points or are*

		physically unable to collect water due to health issues or injuries. *The Hotline phone number is 6354 9900.* *Water collection points are also available at;* *1. The Tony Luchetti Showgrounds (George Coates Ave) and* *2. Emora Park, Landa Street in Bowenfels.* *These collection points will be open throughout today while some locations are still limited in water supply.*
1230	2 additional potable water carting trucks are sourced from Sydney to assist with water delivery to residential network.	
1302	Council places Facebook post and website update advising of the Water Outage Hotline	*Water Outage Hotline - 6354 9900* *Council has set up a Hotline for residents that require assistance and are unable to drive to the collection points, or are physically unable to collect water due to health issues or injuries.* *The Hotline phone number is 6354 9900.* *Water collection points are also available at;* *1. The Tony Luchetti Showgrounds (George Coates Ave) and* *2. Emora Park, Landa Street in Bowenfels.* *These collection points will be open throughout today while some locations are still limited in water supply.*
1300	Evidential charging showing of 450mm line network and associated cross connected network lines.	
1330	Council uploads new Facebook post and website update.	*A fleet of water tankers are currently operating to feed potable water directly into areas of the water network to provide water to areas that are experiencing issues.* *This will continue until we know that the water system has been restored. This input of water is assisting with the continued flow being received from the Fish River water system since Saturday morning. Work has been completed on the Lithgow Water Treatment Plant and Council anticipates this plant to be operational later today.*
1400	Potable water cart trucks commence filling Cook Street Low Reservoir.	

1500	Operable pressure confirmed as building in main water network lines.	
1532	New Council Facebook post and website update.	*New Water Collection point in Littleton.* *The Council has now opened a third collection point in Littleton located at the Lithgow West Fire Station to assist residents in Littleton.* *The water available for collection at the distribution points is potable and able to be used for cooking and drinking. If you are collecting water from these distribution points please bring your own containers to put the water in and follow the instructions of the staff present.* *The Public water collection points are in place at;* *• Lithgow West Fire Station, Rabaul St* *• The Tony Luchetti Showgrounds (George Coates Ave) and* *• Emora Park, Landa Street in Bowenfels.* *These collection points will be open throughout today while some locations are still limited in water supply.*
1615	Reports to Council of burst water main at Wallerawang.	Staff attend to repair burst water main at Wallerawang.
1842	New Council Facebook post and website update.	*The Oakey Park Water Treatment Plant is operational, and we are starting to see good pressure increases across the water network.* *A fleet of tankers continue to operate putting potable water directly into areas of the water network at locations that are experiencing issues. This will continue through the night until we know that the water system has been restored.*
1900	Burst water main at Wallerawang confirmed repaired.	
2030	Emora Park public water refill site closed.	
2034	New Council Facebook post and website update.	*Overnight Progress* *The Council will continue to use water trucks throughout the night to restore the water levels in the network and fill the reservoirs.* *With the Oakey Park Water Treatment plant now operational and pumping water into the system from the Farmers Creek water*

		supplies, we continue to see an increase in pressure across the network however residents may continue to experience periods of low water pressure overnight.
2100	Water carts continue to assist with refill of reservoirs until 0700 13 October.	
2230	Water cart supply to Cook Street low reservoir ceased and rediverted to Shaft Street Reservoir.	
Monday 13 October		
0700	Remaining contracted potable water carts stood down.	
0912	New Council Facebook post and website update.	*Water Supply Update 9.00am - Monday 13 October* *Residents should be noticing a return to normal water supply services. Throughout Sunday night Council continued to input water into the network from the Fish River system, Oakey Park water treatment plant and a fleet of water tankers.* *Council is working to a full return of water services in coming days. The network reservoirs may take the remainder of this week to fill to capacity.*
1100	Media Conference fronted by General Manager and Deputy Mayor.	
1659	New Council Facebook post and website update.	*Water outage final update – Monday 13 October, 5:00pm.* *Included video of damaged 100mm and 450mm pipelines*
Thursday 16 October		
0600	Automated WTP production ceased.	Automatic stop once all reservoirs are full. Output delivered at 9.5M/L per day