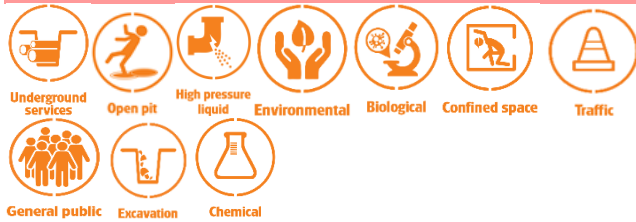


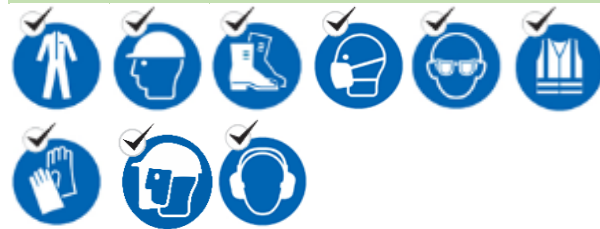
Scope/Purpose: Procedures for clearing blocked storm water and wastewater gravity mains.

Health & Safety and Operational Information

Hazard Indicators



Personal Protection



Emergency Procedure / Escalation

- Make "Site Safe" and isolate risks to people or property with resources at hand

Escalate if extra resources required or problems occur!

- Escalate to Team Leader and inform of the issues faced and/or expected resources required if necessary.

Additional Documentation

- Specialised equipment needed – Jetting trailer or Jetting/Vacuum truck (or Combi unit) with specialist jetting/cutting nozzles.
- **Fulton Hogan Work Instruction for Disinfection of Water Systems – equipment clean down and disinfection.**
- Client approved jetting pressures

Required Skills, Competencies (Qualifications and/or Certifications)

Competent persons only -NZ Certificate in Infrastructure Works Level 3 or higher (or similar) with wastewater strand

Standard Operating Procedure

Required Equipment

Equipment and Information	Details
Fully Equipped Vehicle	Ensure vehicle, plant, equipment and materials appropriate to the day's work schedule is available
Vulnerable & Priority List	List of potential wastewater "Blow-Back" sites.
Specialist Equipment	Jetting trailer, Jetting/Vacuum trucks (or Combi truck) complete with jetting and cutting nozzles. Roding equipment and plungers

Prepare to do the work

Action	Action Details
Pre Start Process	Complete the Daily Pre Start, Choose appropriate TMP
Initial site assessment	Is there also an associated discharge/overflow? HOLD POINT: If there is also discharge is to waterways (including piped stormwater systems and open stormwater drains) escalate as required and complete overflow notification Prioritise preventing further discharge to waterways.)
Identify Blocked network to be cleared	Trace flow restrictions / blockages downstream to open free flowing network and upstream to determine location of blockage. Identify access manholes to be utilised to unblock network. Review catchment on GIS to ensure the understanding of the flow direction and for stormwater outlets locations.
Identify and action additional issues	If properties are flooded, have the potential to flood or suffer from wastewater overflow escalate these issues as appropriate. If service connection blockage suspected – see below
Notification	Inform affected properties of the blockage via door knock and / or letter drop. Arrange alternative service provision depending on nature of event and particular customer needs – discuss options with Clients Engineer's Representative.

Perform the work

Action	Action Details
Confined Space	HOLD POINT: If manhole entry is required undertake procedure in accordance with Confined Space Access SOP. A permit to work is required prior to accessing any manhole and MUST ONLY be undertaken by properly trained and competency assessed staff for this work. Undertake gas safety check using appropriate meter and ventilate manholes until gas readings within permitted limits.
Clear blockage	If appropriate, install a debris trap at the downstream manhole. Using jetting lance as required with appropriate cutting head or drainage rods to remove blockage. If initial attempt to clear is unsuccessful mark blockage point on the surface at best estimated location. If necessary mark upstream and downstream blockage extent points. Escalate the issue to your supervisor and request assistance as appropriate. This may involve calling in the CCTV unit, Jetter/Sucker truck or Combi truck with larger jetting equipment on site. If structural damage/issues are discovered, assess if immediate excavation and repair or root cutting is required to remedy/repair and prevent further blockages and overflows from occurring
On clearance	Flush the mains pipes until adequate downstream flow is observed and all debris (Silt, Fats and other residues etc.) is removed at downstream manhole On completion of clearance operations replace all manhole covers and secure appropriately. Camera blocked section of pipe to verify that the pipe blockage area Pipe ID is >90% of pipe ID.
Clean up	All possible effluent and sludge shall be removed from the site. The affected area is to be thoroughly disinfected with Jeyes Fluid, hypochlorite solution and hydrated lime (as most suitable) for odour as appropriate. Chemicals to be used are to be approved for such use. A visual inspection of the site must be carried out to ensure NO effluent or sludge remains.
Effluent/sludge removal	Dispose of all contaminated liquids, effluent and sludge at the closest wastewater treatment plant
Confirm cause	If structural damage, siltation and/or root penetration is believed to have caused the blockage request a CCTV assessment of the pipeline to enable accurate pipe failure assessment
Close Out	Record necessary details (eg No. and type of customers affected) Ensure all PPE and tools are disposed of or sterilised with chlorine solution. Observe good personal hygiene.
Specific situations	
Service connection blockage	Locate blockage and determine ownership and responsibility for maintenance. Check flow at upstream and downstream manholes, where there is no variance in the observed flow rates it can be assumed that the blockage is in a service connection. Once confirmed check adjacent properties to ensure they have flow, this will narrow down the blockage to the specific service connection and location. Where blockage is on private property, notify owner/resident and advise to engage a plumber/drain layer, if unable to contact, leave them a blocked connections card which explains this.