

Palmerston North City Council Policy

PRESSURE SEWER SYSTEMS

DECEMBER 2018

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Contents

1	Introduction.....	3
2	Strategic Context.....	3
3	Policy Objectives and Goals.....	3
4	Definitions.....	3
5	Guidelines.....	4
5.1	Application and Use of Pressure Sewer Systems.....	4
5.2	Ownership.....	5
5.2.1	Residential Installations.....	5
5.2.2	Trade Premise Installations.....	6
5.3	Responsibilities.....	6
5.3.1	Installation Responsibility.....	6
5.3.2	Operational & Maintenance Responsibility.....	6
5.3.3	Responsibility for Damage.....	7
5.4	General Requirements.....	7
5.4.1	Number of Connections to Pressure Sewer Equipment.....	7
5.4.2	Location of Pressure Sewer Equipment and Maintenance of Access.....	7
5.4.3	Access Arrangement.....	8
6	Review of Policy.....	8

1 Introduction

Pressure sewer systems are alternatives to conventional gravity sewer systems, and have advantages over a conventional gravity sewer system in areas with geotechnical and technical constraints. Palmerston North City Council requires the installation and use of pressure sewerage systems in some such areas, and allows for their installation in other such areas.

The aim of this policy is to provide guidance for the provision of wastewater services to residential properties and trade premises that are, or may be in the future, serviced by pressure sewerage systems.

2 Strategic Context

This policy contributes to the goal of being an eco city, as well as innovative and growing city. It supports the Eco City and City Development Strategies by creating a framework to allow the installation of pressure sewer systems in Palmerston North City. This will enable areas of the city, including designated growth areas that would be difficult to service with a conventional gravity sewer system, to be connected to the sewer reticulation.

The policy is also linked to the following Palmerston North City Council documents and plans (as detailed within the Guidelines):

- District Plan
- Engineering Standards for Land Development (ESLD)
- Wastewater Bylaw
- Trade Waste Bylaw
- Approved water service connection contractor approval process

3 Policy Objectives and Goals

The purpose of the policy is to:

- Define pressure sewer systems within Palmerston North City.
- Outline where, how and why pressure sewer systems can be applied and used within the wastewater reticulation network.
- Detail who will own the various components of the system.
- Detail the general requirements for the specification and approval of pressure sewer systems.
- Outline the roles and responsibilities of stakeholders including Palmerston North City Council, developers, property owners, and householders.

4 Definitions

For the purpose of this policy, a *Pressure Sewer System* in Palmerston North City is defined as:

A complete system wherein sewage is conveyed under pressure generated by multiple pump units, each located on an identified private property, to a common discharge

point (a wastewater treatment plant or other wastewater system). A pressure sewer system may include the following elements:

1. Grinder pumping unit within a chamber, both specifically designed for pressure sewer applications, installed on each property.
2. Property discharge line that connects the pumping unit to the boundary kit.
3. Control/alarm panel that controls the operation of the pump unit containing alarm components, electrical connection to the property and associated circuit breaker.
4. Remote data connection, such as telemetry.
5. Boundary kits for each pumping unit located at the legal boundary for each property that provide a means to isolate the pressure sewer network from a property discharge line and pumping unit.
6. A specifically designed pressure sewer pipe network located in public corridors consisting of small bore pressure mains, as well as, isolation valves, flushing pits and air release valves where required.

On-Property Pressure Sewer Equipment refers to items 1-4 above.

Dwelling will be as defined in the Wastewater Bylaw. *Dependant Dwelling Unit, Minor Dwelling Unit* and *Multi-Unit Residential Development* will be as defined in the District Plan.

Point of discharge will be as defined in the Wastewater Bylaw

Pressure Sewer Areas are geographical areas where pressure sewer systems must be utilised. All properties requiring a wastewater connection within a Pressure Sewer Area will be obligated to install a pressure sewer system and connect to the pressure network.

Prohibited Substances are substances that may lead to the corrosion, blockage or impede the operation of the pressure sewer system and reticulation network, and include prohibited substances as defined in the Trade Waste by law.

Trade Premise will be as defined in the Trade Waste Bylaw.

Pumped systems comprising a single pump station (private or public) or “pump ups” connected to a single rising main discharging to a point in a gravity wastewater system (wastewater treatment plant or other wastewater system) are not pressure sewer systems for the purposes of this policy and are therefore excluded from this policy.

5 Guidelines

5.1 Application and Use of Pressure Sewer Systems

Pressure sewer systems may only be installed within the Wastewater Service Area as defined in the Wastewater Bylaw.

Specified pressure sewer areas are as defined in the District Plan. The use of pressure sewer systems outside of the specified pressure sewer areas is at the discretion of Palmerston North City Council.

Where private property owners wish to utilise pressure sewer systems in another area detailed technical submissions justifying the use of pressure sewer systems is to be

provided to Palmerston North City Council. These submissions must include (but not be limited to) assessment of the feasibility of pressure sewer systems for the area using the following criteria:

- geotechnical (such as the susceptibility of the area to liquefaction),
- technical (i.e. hydraulic, including effects on the overall wastewater system and downstream capacity constraints),
- financial (whole of life assessment including costs and benefits),
- environmental, and
- safety.

The use of pressure sewer systems in other areas will be based on the demonstrable benefit of using pressure sewer over gravity reticulation using the above criteria.

5.2 Ownership

In all cases Palmerston North City Council will own the boundary kit and the pressure sewer pipe network located in public corridors.

5.2.1 Residential Installations

Palmerston North City Council will own all pressure sewer system on-property equipment for residential installations where the pressure sewer system is installed in a specified pressure sewer area.

Ownership of pressure sewer on-property equipment for residential installations where the pressure sewer system is not installed in a specified pressure sewer area will consider the wider community benefit, but will be at the discretion of Palmerston North City Council.

5.2.1.1 Residential Installations - on-property equipment Palmerston North City Council owned

The point of discharge will be the point on the property where the gravity sewer lateral enters the pressure sewer chamber. The private property owner is responsible for the gravity lateral and all parts of the system of upstream of this boundary point.

The boundary in the electrical supply between private and Council responsibility will be the point entry to the pump control panel. Upstream of this boundary point the private property owner is responsible for maintaining the power supply in accordance with electrical standards applicable to the type of dwelling (e.g. a residential dwelling). The Council is responsible for the electrical and control system from this boundary point including the control panel. The private property owner is responsible for the cost of the power for the unit.

5.2.1.2 Residential Installations - on-property equipment privately owned

The point of discharge will be the point where the pressure pipe from the property enters the boundary kit. The private property owner is responsible for the gravity lateral and all parts of the pressure system upstream of this boundary point.

The property owner will be responsible for all parts of the electrical system, including the cost of the power and the maintenance of the power supply in accordance with electrical standards applicable to the type of dwelling (e.g. a residential dwelling). The property owner is responsible for the maintenance of the control system.

5.2.2 Trade Premise Installations

For Trade Premise installations the property owner will own all pressure sewer on-property equipment.

The point of discharge will be the point where the pressure pipe from the property enters the boundary kit. The private property owner is responsible for the gravity lateral and all parts of the pressure system upstream of this boundary point.

The property owner will be responsible for all parts of the electrical system, including the cost of the power and the maintenance of the power supply in accordance with applicable electrical standards (e.g. a commercial or industrial building).

The property owner will be responsible for the maintenance of the control system. Palmerston North City Council will be responsible for setting and altering control parameters such as pumping trigger levels and pumping durations, to ensure effective operation of the individual system and the whole System Pressure Area.

The property owner must engage in a maintenance agreement for all of the on-property equipment.

5.3 Responsibilities

5.3.1 Installation Responsibility

The boundary kit and the pressure sewer pipe network located in public corridors must be installed by the developer at the time of subdivision and will be subject to the vesting process under the Resource Management Act.

The installation of pressure sewer system on-property equipment will be the responsibility of the private property owner, including, where applicable, the property developer, builders or other entities deemed to be the private property owner's agent.

Pressure sewer on-property equipment design and installation must comply with:

- The ESLD
- Any site specific Resource Consent Conditions, including Consent Notices.
- The requirements of the Building Code
- Any site specific Building Consent Conditions.
- On property installations will only be undertaken by trained and accredited personnel as listed in the list of Approved Service Connection Contractors.

Where Palmerston North City Council is to take ownership of pressure sewer on-property equipment it will be vested Palmerston North City Council as specified in a Consent Notice.

Any alteration of the location of any of the pressure sewer Equipment after it has been constructed it will be carried out at the expense of the Private Property Owner.

5.3.2 Operational & Maintenance Responsibility

Palmerston North City Council will be responsible for the operation and maintenance of pressure sewer on-property equipment following its vesting with Council.

The private property owner will be responsible for:

- The cost and supply of power to the pressure sewer on-property equipment.
- Maintaining access to the pressure sewer equipment for maintenance purposes.
- Designing, installing and maintaining a suitable means of mitigating high wastewater flows to prevent inundation or other adverse impact to the pressure sewer on-property equipment (generally expected to be by means of a buffer tank to allow for slow release of wastewater to the pressure sewer system).
- Complying with Palmerston North City Council's Trade Waste and Wastewater Bylaws.
- Complying with the homeowner's guideline for use of the pressure sewer equipment including ensuring prohibited items and substances are not disposed of via pressure sewer system.
- Notifying Palmerston North City Council of any system fault as soon as practicable to enable timely resolution without risk of uncontrolled discharge or overflow.

5.3.3 Responsibility for Damage

Prohibited substances are not allowed to discharge into the pressure sewer system. Costs associated with the maintenance of the pumping unit due to the discharge of prohibited substances will be recovered from the property owner in accordance with the procedure set out in the Wastewater Bylaw.

Waste disposal systems are not allowed with pressure sewer systems, because the introduction of food scraps are likely to place an extra stress on the operation of the pumping unit and may result in excessive wear of the pump.

Costs associated with the deliberate or negligent damage to the pumping unit and appurtenances by the property owner will be recovered from the property owner. Damage by maintenance operators to private property or to the individual pumping unit and appurtenances will be repaired at the maintenance operators cost.

5.4 General Requirements

5.4.1 Number of Connections to Pressure Sewer Equipment

A single on-property pump unit will have a maximum of the following connected to it:

- One Dwelling; or
- One Dwelling plus one Dependant Dwelling Unit; or
- One Dwelling plus one Minor Dwelling Unit.

For Multi-Unit Residential Developments, Trade Premises and/or other non-residential connections, the requirements for the on-property equipment will be determined on a case by case basis.

The private property owner will be responsible for determining the requirements for these connections to the satisfaction of Palmerston North City Council.

5.4.2 Location of Pressure Sewer Equipment and Maintenance of Access

Location of the chamber and the boundary kit must be in accordance with the ESLD.

Pressure sewer on-property equipment owned by Council is subject to the Works over or near Public Drainage Systems provisions of the Wastewater Bylaw (Clause 2, Administration Manual).

The on-property chamber is considered a service opening and must not be covered in any way. In addition, the clearance distances to buildings specified in the Wastewater Bylaw will be applied to the chamber for all structures.

Should the Private Property Owner wish to construct additional structures on the property the Works over or near Public Drainage Systems provisions of the Wastewater Bylaw must be maintained. Alteration of the location of any of the pressure sewer on-property equipment may be permitted as part of the Building Consent process for the additional structures.

5.4.3 Access Arrangement

Council may use provisions within the Local Government Act that grant Council the power to construct works on or under private land or under a building on private land that it considers necessary for wastewater reticulation.

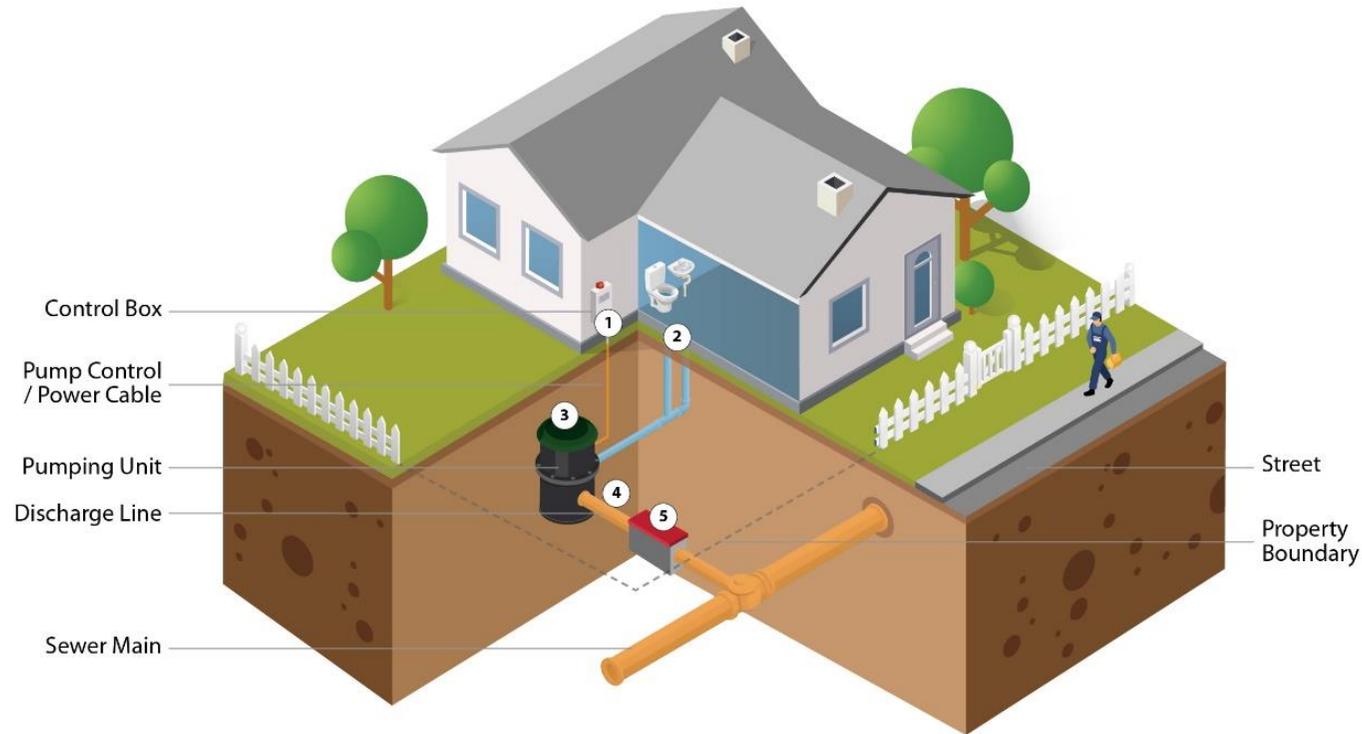
In general easements will not be required over any part of the pressure sewer on-property equipment owned by Council. Council reserves the right to require the creation of an easement on a particular private property, so as to ensure safe ongoing operation of the wastewater system, minimise any health concerns or protect Council's assets. The cost of the easement will be borne by the private property owner.

6 Review of Policy

Next review date: April 2020

The policy will be reviewed every five years after that.

Appendix A. Typical residential system diagram



- ① The electrical power controls and alarm
- ② The household plumbing and wastewater line
- ③ A pumping unit inside a storage tank
- ④ A discharge line from the storage tank to boundary kit
- ⑤ A boundary valve assembly inside a buried box with a plastic lid located just inside or outside your property

— Private ownership
— Council ownership

Note: This example shows the on-property equipment as Palmerston North City Council owned.

