



Policy

Private sewer pump station

2020

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E2020/76527	21 October 2020	Policy reviewed and determined to be current. Policy template updated to meet accessibility requirements. Noted by ET.

Further Document Information and Relationships

Related Legislation	Local Government Act; Local Government Act 1993 and Local Government (General) Regulation 2021; Protection of the Environment Operations Act 1997
Related Policies	Water and Sewer Equivalent Tenements Policy, Liquid Trade Waste Policy, Building in the vicinity of underground infrastructure Policy
Related Standards, Procedures, Statements, documents	Sewage Pumping Station Code of Practice; Pressure Sewerage Code of Australia DM1227322 – Private Pump Station Service Checklist

Note: Any reference to Legislation will be updated in the Policy as required. See website <http://www.legislation.nsw.gov.au/> for current Acts, Regulations and Environmental Planning Instruments.



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1. Objectives

- 1.1 This policy provides a framework for the provision of private sewer pump stations within Byron Shire.
- 1.2 In particular this policy details the responsibilities of developers and individual property owners with respect to the construction, maintenance and operation of associated infrastructure and provides a basic guide to Council's expectations from such systems.

2. Policy Statement

- 2.1 Byron Shire Council will permit the installation of private sewer pump stations to provide sewerage services where other forms of sewerage cannot be effectively or economically used, or where private sewer pump stations have particular environmental, economic or social benefits. Private sewer pump stations are sufficiently different to gravity reticulation systems and pressure sewerage systems to require a separate policy statement.
- 2.2 This policy does not include gravity sewerage reticulation systems or pressure sewerage systems (Pressure Sewer Policy). These applications do not fall within the definition of a private sewer pump stations and this document is not intended to cover those applications.

3. Introduction

3.1 What are Private Sewer Pump Stations

- a) A private sewer pump station consists of a sewerage pump system located on private land where raw sewage is piped under pressure generated by pumping units contained on the private property. The private pump stations discharge to a nominated discharge point in the public sewer main. There are individual properties which may have been allowed to pump their sewerage into Council's existing gravity sewerage mains, or a collection of properties that pump to a common discharge location within Council's sewerage collection system.
- b) The sanitary drains on the private property flow by gravity into the pumping station. From the pumping station sewage flows to the designated system discharge point via the collective pressure generated by the pump located in the station. The pump station must be appropriately designed according to the individual capacity of the property fixtures on each private allotment. The pump should be specified by a hydraulic consultant for the purpose and also contain a grinder to minimise blockages in the pipe systems. An alarm system is to be installed to warn the resident that the unit is not operating within preset parameters.



3.2 Application of this Policy

This Policy covers private pump stations and all pressure pipes to the point of connection with Council's sewer main. This Policy applies to private sewer pump stations as defined in Section 3.1.

3.3 Supporting Documentation

This policy is supported by the following documents:

- a) Sewage Pumping Station Code of Practice (Water Services Association of Australia (WSAA 04) and
- b) Pressure Sewerage Code of Australia (WSAA 07).

4. Use of private sewer pump stations in Byron Shire

4.1 Where can Private Sewer Pump Stations be used in Byron Shire

Subject to Council approval, where a gravity sewer connection is not directly available to service a development, Council may approve a private sewer pumping station, which will discharge to the existing sewerage system via a private rising main. It is the consultant's responsibility to ensure that the Private Sewerage Pumping Station complies with the following requirements:

- a) Local Government Act 1993 and Local Government (General) Regulation 2021;
- b) AS/NZS3500.2 – Plumbing and Drainage Code of Australia;
- c) Building Code of Australia;
- d) Protection of the Environment Operations Act 1997;
- e) Sewage Pumping Station Code of Practice (Water Services Association of Australia (WSAA 04) and the Pressure Sewerage Code of Australia (WSAA 07); and
- f) Council's specific requirements as set out below.

Council will review these documents periodically and update them as required.

4.2 Likely General Applications of Private Sewer Pump Stations

The most common applications for Private Sewer Pump Stations in Byron Shire are likely to be:

- a) For individual properties that are currently in close proximity to a sewer urban area but have not been serviced by a reticulated sewerage system and/or site conditions are such that construction of gravity main sewerage system would compromise sensitive environmental areas or are impracticable due to site elevation.
- b) Community Title Developments



This also includes existing vacant urban blocks of land under the same circumstances.

These properties will be subject to an application for connection to the sewerage system and subsequent investigation that confirms that this connection is possible and viable.

4.3 Requirements for “On Property” Rights

- a) Easements will generally not be required over any part of the “on property” works, so as to enable property owners to subsequently relocate on property works (normally the property discharge line) as required to accommodate future property modifications etc. However, an easement is required if the property discharge pipes pass through any neighbouring property.
- b) Council reserves the right to create an easement over the rising main (if required) on a particular property, so as to ensure the safe ongoing operation of the system, the minimisation of any health concerns or the protection of any Council Property and ensure lawful entry is possible for maintenance and repairs.

4.4 Power for the Pumping Unit

Pumping units shall be connected and hardwired to an individual or common property’s switchboard on a separate additional circuit. Council has no responsibility in powering and maintaining supply of pump unit.

4.5 Number of Pumps per Residential Property

- a) Generally, a single pumping station shall be permitted for each residential property. For multiple dwellings on the same property, a single station (if of sufficient capacity) may be approved to serve up to two dwellings; however this unit will usually have more than one pump. If there are more than two dwellings a duty standby pump arrangement must be installed.
- b) However, Council may consider approving more than one pumping unit on a property if the general property layout or the layout of the different dwellings on the property requires more than one pump station.

4.6 Non residential Properties

- a) Where private sewer pump stations are to be provided to non-residential properties such as schools, hotels, caravan parks, industrial etc, owners will need to satisfy the adequacy of any “on property” designs, including the adequacy of the property discharge lines. All pumping units shall be installed as per the plans submitted and approved by Council.
- b) Such private connections to the public sewer shall be inspected by Council prior to commissioning and operation.

4.7 Identifying that the property has a Private Sewer Pump Stations

- a) The property’s drainage diagram and the Section 88B instrument will be marked to indicate that the property is served by a private sewer pump station. This is specifically to allow the prospective land purchaser to discover, prior to their purchase, that the property is serviced by a private sewer pump station.



- b) The property will be identified on Council's Geographical Information System to indicate that the property is served by a private sewer pump station. This information may be accessed by a request for information under sections 7, 8 and 18 of the Government Information (Public Access) (GIPA) Act 2009 and Schedule 1 of the GIPA Regulation 2009.

5. Design and construction of private sewer pump stations

5.1 Council will only approve designs submitted by consultants with appropriate skills and experience in pressure sewerage system design.

Whilst the Developer will be responsible for the design of the proposed Private Sewer Pump Station, the design will be subject to formal approval by Council's Water and Recycling Services. The switchboard associated with the operation of the pump station must have an 'hour run' meter and at application stage, details of the pump flow rates must be provided.

Council may require that the Developer also undertake analysis of the receiving sewers to ensure that the additional loading will not subsequently require an augmentation of existing receiving sewers, including downstream pump stations. Council may alternatively advise the Developer of an appropriate connection point based upon its own analysis of the public sewer system capability.

The need for appropriate design is critical to the success of the individual units and its functioning as part of the Council collection system.

Installation and testing of private pump stations shall be completed prior to issue of an occupation certificate for building works. Principal Certifying Authorities should note that sewerage works may not be commissioned or used until they have been inspected and certified by Council, or a person authorised by Council to undertake such inspection and certification, in accordance with Section 21(a)(i) of the Local Government (General) Regulation 2021.

Where a Developer wishes to engage a third party to undertake on property works on their behalf, an appropriate bond will be required as a guarantee that the works will occur.

Where private sewer pump stations are approved for new developments, detailed designs shall be

undertaken in accordance with the latest edition of the Sewage Pumping Station Code of Practice (Water Services Association of Australia (WSAA 04) and the Pressure Sewerage Code of Australia (WSAA 07).

As the private sewerage pumping station is a component of the internal plumbing and drainage, Council's Water & Recycling Services Section shall check the design drawings for compliance with current Acts and relevant standards. Owners of private pumping stations are responsible for all costs and charges associated with the installation,



operation and maintenance. As constructed details specifying to survey accurate standards the location of the pressure main shall be submitted to Council.

5.2 Council will only approve designs submitted by consultants with appropriate skills and experience in pressure sewerage system design.

a) Pumping Unit to be Fully Tested before Commissioning

The final connection to the sewer main will only be made after the pumping unit has been tested as per the latest edition of the WSAA Pressure Sewer Code of Australia (WSA 07 & WSA 04). and found to be suitable for formal commissioning.

5.3 Connection of property sanitary drains to Private Sewer Pump Station

The property sanitary drains upstream of the private sewer pump station must incorporate an overflow relief gully, with all such plumbing to be in accordance with Australian Standard AS3500 National Plumbing and Drainage Code and the Building Code of Australia (BCA).

In particular, the overflow relief gully must not permit ingress of stormwater to the private sewer pump station. Connection of property sanitary drains from the private sewer pump station may only be undertaken by licensed plumbers.

The maximum capacities of spas are to be specified. Any additional development above the maximum nominated shall be the subject of a further application to Council.

5.4 Private Pumps: Duty Requirements

a) Pump Flow

Council requires a minimum of two pumps that shall be sized after consideration of the following criteria:

- each pump has the ability to pump 5 times the Average Dry Weather Flow (ADWF):

$\text{Flow } Q = \frac{\text{Number of EP} \times 275\text{L/ EP/ day} \times 5 \text{ (peaking factor)}}{24 \times 3600} \quad \text{L/sec}$ $= \frac{\text{Number of EP}}{62.84} \text{ L/sec}$
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EP = Equivalent Persons (nominal 275 Litres per person per day)

b) Pump Head

The head required to be achieved by each pump at the above flow can be calculated as follows:



$$\text{Head (metres)} = h - y + f_{cp}$$

Where:

h = Invert Level of connecting pipe at manhole; or head in rising main

y = floor level of pump well

f_{cp} = friction losses in pressure main and pump station

c) Pump Well Capacity and Operation

The capacity of the pump well for storage of sewage during pump malfunction should be as per Figure 5.1.

Pumping stations shall be designed with sufficient in system storage so that in the event of pump or power failure, no overflows occur for a minimum period of 4 hours with inflow at average dry weather flow. In - system storage shall be measured from duty start level to the level of the lowest relief point.

Other than for storage capacity, the above depths are a general guide. Council may require the developer/landowner to provide details on detention times and proposed strategies to minimise the detention times.

The pumps are to be installed to operate automatically as Duty/Standby and preferably be of the submersible electric type. Replacement pumps are to have the same specifications as approved by Council.

An alarm shall be provided in the form of a prominently positioned flashing red light set to activate at the invert level of the incoming house drain, or a dedicated back to base monitoring service. The contact details of the service agent are to be displayed on the control box or specifications and provided to Byron Shire Council.

6. Costs

All costs associated with connection of a private sewer pump station to Council's existing sewerage system shall be met by the Landowner/Developer.

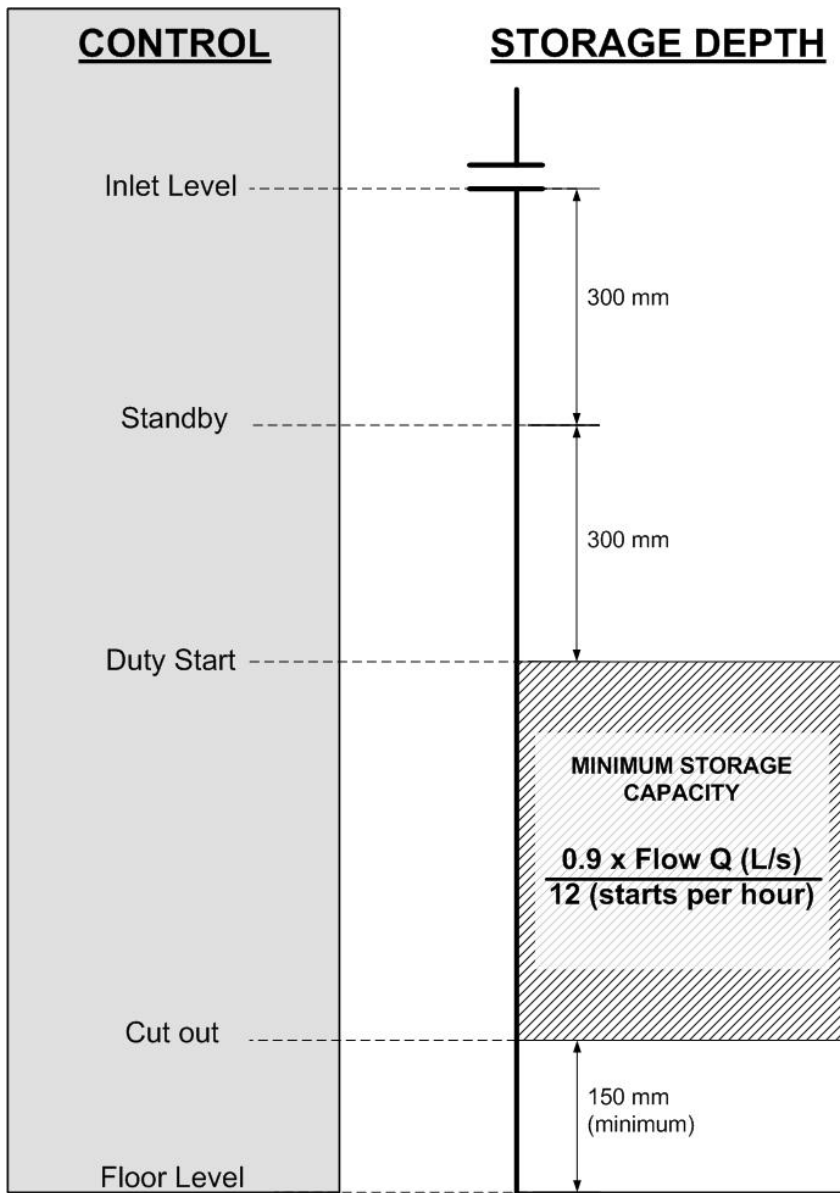


Figure 5.1 Pump Well Capacity and Operation

7. Operation maintenance of private sewer pump stations

The owner is solely responsible for the operation, maintenance and repair of private sewer pump station.

7.1 Normal Operation of the Collection/Pumping Unit

The collection/pumping units operate automatically and do not require any specific input from the resident. The collection tank is to be sized to provide sufficient storage to cater for power outages that might be experienced as part of normal operation. The owner is to be provided with a Home Owners Manual which sets out how the units operate and what the owner/occupier should do if an alarm occurs. The Home Owner's Manual will detail Service Standards, as well as what the home owner should do in response to any



emergency (or alarm) situation and shall be submitted to council for approval as part of application process.

7.2 Power Operation

Owners/occupiers are not permitted to interfere with the electrical operation of the pump station. Council requires the pump station to be wired into the common switchboard in such a manner so as not to interfere with the normal electrical operation of the property, nor be accessible by the residents.

7.3 Maintenance of the Pumping Unit

The owner is to enter into a contract for the maintenance of the private sewer pump station with a suitably qualified person in accordance with the manufacture's specification.

Pump wells must be checked by the service provider as part of the 6 monthly maintenance inspections. This bi-annual maintenance shall include servicing of pumps and electrical components, and a check that the float switches are correctly set and operating. The home-owner is also encouraged to regularly check that the high-level alarm switch is operating and that there are no significant sludge build-ups or other problems.

A copy of a standard maintenance schedule to be completed by the maintenance service contractor is provided in **Appendix A**.

7.4 Home Owners Manual

The developer/landowner will supply a Home Owner's Manual to all owners of properties where private sewer pump stations are installed. The Manual will outline operation and maintenance requirements of the pumping units. The Manual will include:

- a) Details on the operation of private sewer pump stations including appropriate contact
- b) numbers and/or web site details for further enquires.
- c) Emergency contact phone number of service agent.
- d) What to do if the alarm sounds or flashes.
- e) What to do in the case of a power failure.
- f) What to do if going on holidays.
- g) How to minimise waste water production in the case of emergencies.
- h) How to install and operate swimming pools, spas etc, and detail requirements for design and installation of any new pools or spas.
- i) What can be safely discharged into the sewerage system?

7.5 Maintaining the Overflow Relief Gully

- a) The property sanitary drain shall be connected to a controlled overflow mechanism such as an overflow relief gully trap. These will be identified as overflow relief gully traps on the property plan.



- b) Properties are not permitted, under any circumstances, to block any overflow relief gullies such that they are unable to perform their normal operation.
- c) In flood prone areas special arrangements may be required in relation to overflow relief gully traps in order to prevent the intrusion of floodwater and damage to the system.

7.6 Special Requirements for Spas and Swimming Pools

While Private Sewer Pump Stations do not prohibit high discharge applications such as spas and swimming pools, appropriate provisions need to be made to accommodate these discharges.

a) Spas

Sudden discharges from Spas could either trigger the pumping unit high level alarm or, in a worse case scenario, result in an overflow at the residential overflow relief gully. Council may therefore recommend special requirements on properties which are proposing the installation of spas, which may include time delays on alarms, provision of a non-standard collection/pumping unit with additional storage in the collection tank or a buffering tank.

Special requirements for spas will be determined on a case by case basis. Spa owners with Private Sewer Pump Stations need to contact Council's Water and Recycling Services, who will advise on the correct way to discharge the spa into the collection tank. Formal approval under section 68 of the Local Government Act will also need to be given to any agreed format of discharge and further approval will be required to vary this at any future stage.

b) Swimming Pools

Council requires that any property owner with a Private Sewer Pump Station currently owning a swimming pool (or installing a swimming pool in the future) regulate their pool backwash volumes and rates so as not to exceed the capacity of the pumping unit and to avoid alarms being needlessly generated.

There are a number of ways to drain or backwashing pools without causing an alarm, and in general these will be dealt with on a case by case basis. For any proposed pools, the agreed format of discharge will be covered by a condition of consent for the dwelling or pool as part of section 68 approval.

For existing pools a format of discharge will be agreed with the property owner. Pool owners requiring further information should contact Council's Water and Recycling Services.

8. Connection to existing gravity main

The approval connection point for a private rising main shall be a nominated boundary shaft or manhole.



8.1 Alternative Connection Points

Council may consider an alternative connection point. Where an alternative is proposed, the Developer shall request written approval from Council's Water & recycling Services. The request shall outline the reasons for the alternative connection point and the connection methodology proposed.

8.2 Application Process

Landowners/Developers are to

- a) Make application to Council under section 68 of the Local Government Act to install a private sewer pump station.
- b) Provide to Council "work as executed drawings" in a format acceptable to Council
- c) Provide Council with all "on property" designs where these occurred during the development phase.
- d) Provide commissioning documentation and provide copy to Council's Water & Recycling Services section.
- e) Provide copy of Owners Manual for Operation and maintenance.

9. Definitions and Glossary

Actual Pump Head	This is the actual static head plus the frictional losses that the pump has to meet in discharging the collection tank's contents. The final or actual pump head is determined from field measurement, to confirm previous design calculations of the pump head.
Alarm Volume	This is the volume that is stored in the on-property collection tank, before the collection tank alarm activities.
As constructed drawings	see work as executed drawings
Collection Tank	that part of a collection/pump unit which collects and stores flows from sanitary drains
Council	This term should be interpreted to mean Byron Shire Council and its successors.
Designer	This is the individual responsible for the design of the private pump station).



Emergency Volume	This is the volume which is stored in the private pump station from just above the alarm activation level to just before the overflow relief gully begins to discharge.
Grinder Pump	a mechanical device designed to pump liquid and in the process reduce the size of solids contained in the sewage
High Level Alarm	This is both an audio and visual alarm system activated when the level of the sewage in the private sewer pump station reaches the alarm volume level.
Home Owners Manual	a manual informing resident of what they can and cannot do in relation to the private pump station on their property, as well as what to do if their system should fail.
On-property Works	These are the total works undertaken on a property, including any excavation, installation, compaction and restoration associated with the Pump unit, Property discharge line/s, Property boundary assembly, Pump control/power cable
Overflow Relief Gully	This is a control overflow device to prevent overflows occurring inside the dwellings on the property, by ensuring that as such overflows occur outside of the dwelling. Its arrangements and dimensions are contained in the NSW Plumbing Code.
Property Diagram	A drawings showing the “on property” works.
Property discharge Line	The pipeline that connects the on-property pumping station to the property boundary assembly.
Pumping Units (or Station)	this includes the pumps, collection tank, alarm system, pump pressure switches, etc and is installed on the property.
Sanitary Drains	pipelines installed by licenced plumbers which convey sewage from buildings to a connection point (also called house drains, house sewer or house service line).
Work as Executed (WAE) Drawings	These are the Work as Executed or as constructed Drawings.



APPENDIX A – Standard Maintenance Schedule (Source DM1227322)

Private Pump Station Service Checklist

Name and Contact Details of Service Provider

Name

Address

Phone No.

Type of System Installed

Pump Description

Date installed / commissioned (if known)

Location of Pump Station:

Date of Pump Station Service:

Pump

- Check mechanical seals and glands.
- Check wear-rings.
- Check impeller.
- Check ease of rotation for rotating parts.
- Check oil levels, including for any water in oil.
- Visually check body casing of pump.
- Lubricate as recommended by manufacturer.
- Ensure all fasteners (bolts) are tight.
- Check clearances.
- Check alignments of couplings.

Completed (Signature & Date)

Specific Comments

Motor

- Visually check body case of motor.
- Check motor insulation (Megger check).
- Check motor cable connections, mountings and glands.
- Check all isolating switches and associated mechanisms.
- Check all cables for swelling.
- Check all motor and limit switches.
- Check starter housing.
- Check motor bearings, seals and couplings.
- Ensure all fasteners (bolts) are right.
- Lubricate as recommended by manufacturer.
- Check current draw of motor.
- Check and clean motor starters, including seals.
- Recheck motor test curves for torque, speed and efficiency characteristics.

Completed (Signature & Date)

Specific Comments

Electrical

- Check termination for "hot-joints".
- Check the thermistor resistance and thermistor relay.
- Check all switches, circuit breakers, fuses
- Check all cable conduits for abrasion, damage, etc, brackets and clips
- Check emergency stop switches for correct operation.

Completed (Signature & Date)

Specific Comments

Misc.

- Check pressure switches.
- Check relay timers.
- Check and adjust meters.
- Check alarm indicators.
- Check and test level probes.
- Check correct operation of variable speed drive.
- Check all meters and indicating lamps/lights.
- Check correct operation of pump.

Completed (Signature & Date)

Specific Comments