A new future for Drouin's growth

WASTEWATER TREATMENT PLANT

Drouin is growing rapidly, and as we plan for the future, Gippsland Water needs to upgrade infrastructure to accommodate that growth.

FACT SHEET

The project

When a town grows, it often means more investment is needed in infrastructure including water and wastewater services. Drouin grew by 60% between 2006 and 2016 and this means we need to expand the capacity of the existing wastewater (sewage) treatment plant to meet the needs of a growing population.

Gippsland Water has completed extensive research into the best option for meeting the future wastewater needs of the Drouin community. After weighing up environmental, technical, social and economic factors, Gippsland Water assessed that the best course of action is to build a new mechanical treatment plant on the existing site on Settlement Road.

The current situation

The existing Drouin Wastewater Treatment Plant is a lagoon-based system. The town's wastewater is screened to remove solids and non-biodegradable materials that then flows to a system of three lagoons for treatment and settling.

Water from the lagoons is either irrigated out to our nearby farm or further treated before being discharged into King Parrot Creek and Westernport Bay.

Lagoon-based treatment is limited in its ability to meet stringent EPA water quality standards for the King Parrot Creek and Western Port Bay catchment.

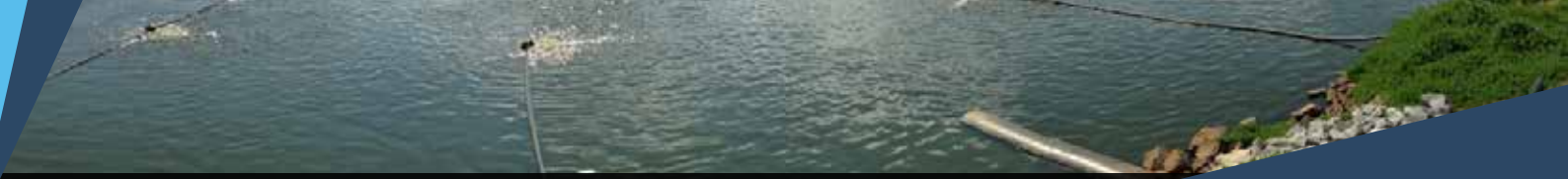
Although the quality of treated wastewater currently being discharged meets EPA licence limits, a better treatment system is needed to maintain compliance and meet the needs of the growing Drouin population.

Preferred approach

Different options were considered for treating Drouin's wastewater including:

- having a variety of satellite wastewater treatment plants around Drouin;
- keeping a single, central Drouin wastewater treatment plant (which would require the existing treatment plant to be upgraded); and
- a single treatment plant for both Warragul and Drouin.

After studying the options available, the lowest cost option for customers was to maintain a single, central treatment plant for Drouin and undertake a major upgrade at that facility.



DROUIN'S WASTEWATER TREATMENT PLANT

Which type of treatment plant?

Gippsland Water commissioned a series of detailed studies to establish which would be the best type of treatment plant for Drouin's future.

These included:

- constructing additional lagoons; and
- constructing a mechanical treatment plant.

There is no room for additional lagoons on the existing site; additional land would need to be purchased. This was considered a very expensive option.

Alternatively, a mechanical treatment plant can be constructed on the same site and is much more cost effective than constructing additional lagoons.

It also provides higher quality treated wastewater for reuse or returning to the environment.

Building a new mechanical plant offers the best value to Gippsland Water customers and the community.

Mechanical treatment plants

Mechanical wastewater treatment plants have been in use for 100 years and are commonly used in Victoria. They use less land and can produce a higher quality of treated wastewater than lagoon systems.

The mechanical plants typically use an activated sludge process where bacteria are grown to treat the waste.

The process also needs oxygen, so air is added to the water and the bacteria produce sludge.

After the waste and nutrients have been consumed, the sludge is removed from the water to produce a clear wastewater that is almost ready for returning to the environment. Sometimes, further treatment is needed, such as filtering to remove any remaining solids and disinfection to remove any viruses.

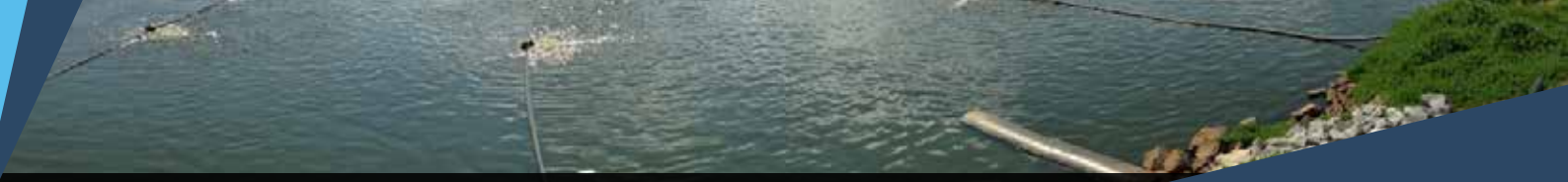
There are many different activated sludge processes. Gippsland Water has investigated seven options.

Each of these options were assessed and evaluated with a Membrane Biological Reactor (MBR) plant considered to be the most beneficial. In this process, the wastewater is drawn through membranes.

This process produces a high quality wastewater that does not require further treatment. It offers reliable quality with significant social and environmental benefits and lowest overall cost.

Other options did not offer the same range of benefits and additional sludge separation steps and disinfection steps would be required. These options were considered too costly or had a high environmental impact and were therefore not chosen.

This new mechanical plant will work together with the existing lagoon system to produce wastewater that is suitable for returning to the environment.



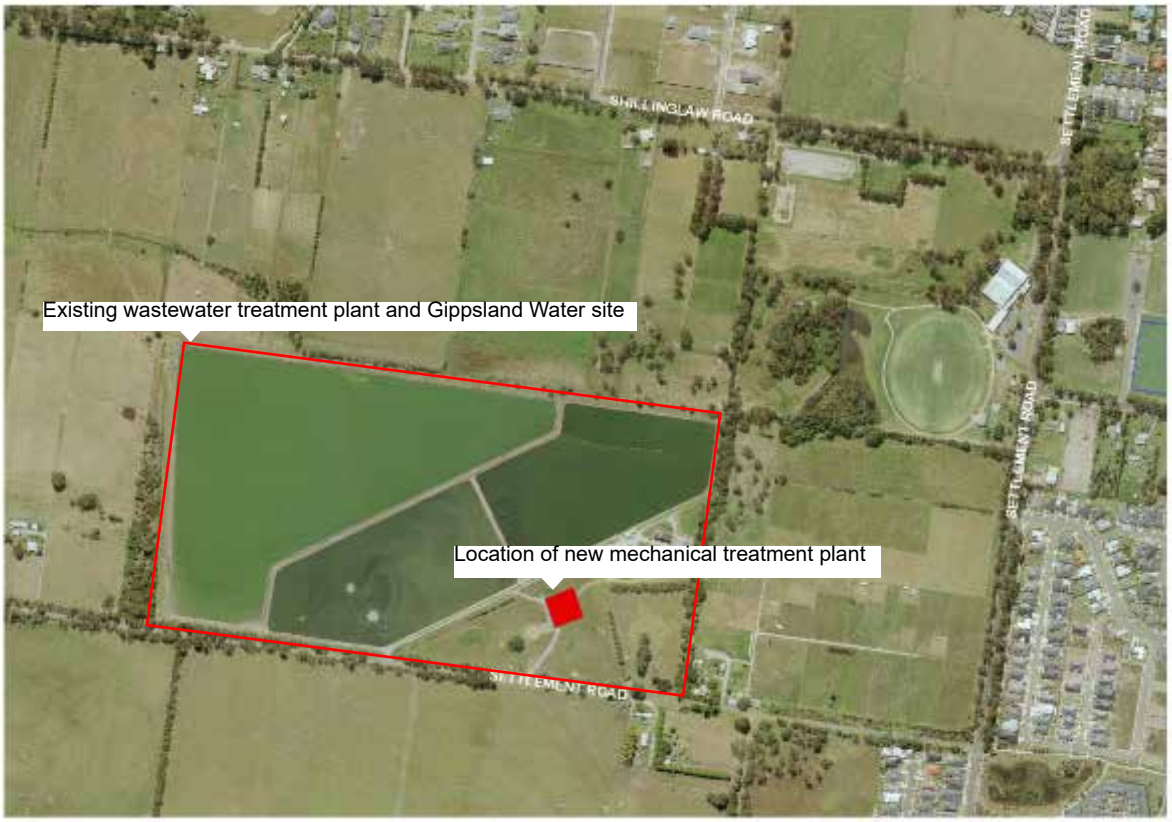
DROUIN'S WASTEWATER TREATMENT PLANT

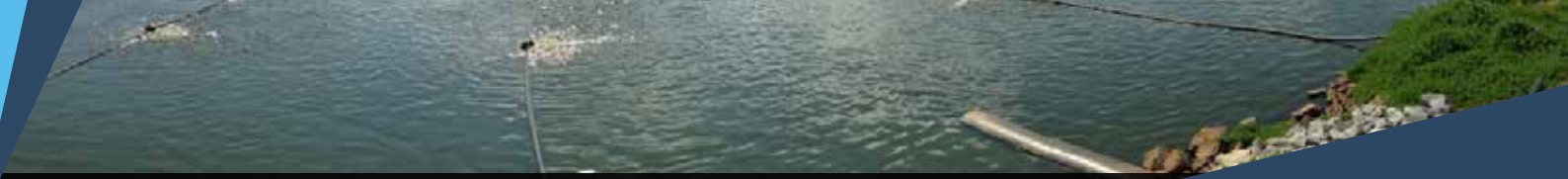
Why we picked this option

Gippsland Water explored seven options for designing and building a new wastewater treatment plant at Drouin. The following table shows that we considered cost, reliability, environmental benefits and social benefits.

OPTIONS & BENEFITS	COST	RELIABILITY	ENVIRONMENTAL BENEFITS	SOCIAL BENEFITS
Modified Ludzack-Ettinger	$$	✓	🌳	👤
4 stage activated sludge	$$$	✓✓	🌳	👤👤
Membrane Biological Reactor (MBR)	$$$$	✓✓✓✓	🌳🌳🌳🌳	👤👤👤👤
Sequence batch reactor	$$$$	✓✓	🌳🌳	👤👤👤
Granular sequence batch reactor	$	✓	🌳🌳🌳	👤👤👤👤
Membrane aerated bioreactor	$$	✓✓✓	🌳🌳🌳	👤👤
Primary treatment and fixed film	$	✓	🌳	👤

Where will the new wastewater treatment plant be located?





DROUIN'S WASTEWATER TREATMENT PLANT

Community and environmental benefits

The upgrade will ensure a more flexible and robust wastewater treatment facility that delivers sustainable and affordable wastewater treatment to the residents of Drouin.

Improving the reliability of the plant has several community and environmental benefits:

- Cleaner wastewater means less odour for nearby residents and better protection of public health.
- The treated water released from the new treatment plant will be of higher quality, therefore protecting the ecology of local waterways and Westernport Bay.
- Producing high-quality treated wastewater could allow us to recycle more wastewater for irrigation.

Solar panels will be installed onsite to help run the plant.

How long will this take?

Detailed design will take place as soon as the necessary approvals are obtained.

We expect the construction phase of this project to take up to two years, with preliminary works beginning in early 2019 and the major construction phase beginning in 2020. The project timeline (right) provides more information.

We will keep the community informed throughout the process.

During construction

Residents of Drouin will notice no changes to their regular services while the plant is being built over the next few years.

There is a separate fact sheet available on the construction phase of the project.

During construction, there may be some extra traffic along Settlement Road, as trucks and construction vehicles come and go from the site. Gippsland Water will be working with residents living close to the site to ensure that dust and noise impacts are minimised as much as possible.

Gippsland Water will be updating the community on the progress of the plant throughout the planning and construction phases of the project.

Project timeline

2017
Functional design

2018
Detailed design

Early 2019
EPA Works Approval and preliminary works

Early-mid 2020
Construction start

2021
Construction complete

Mid 2021/2022
Plant commissioned and operational

For more information

If you would like further information about Drouin's new wastewater treatment plant, please contact our customer contact centre on 1800 050 500 or visit our website:

www.gippswater.com.au