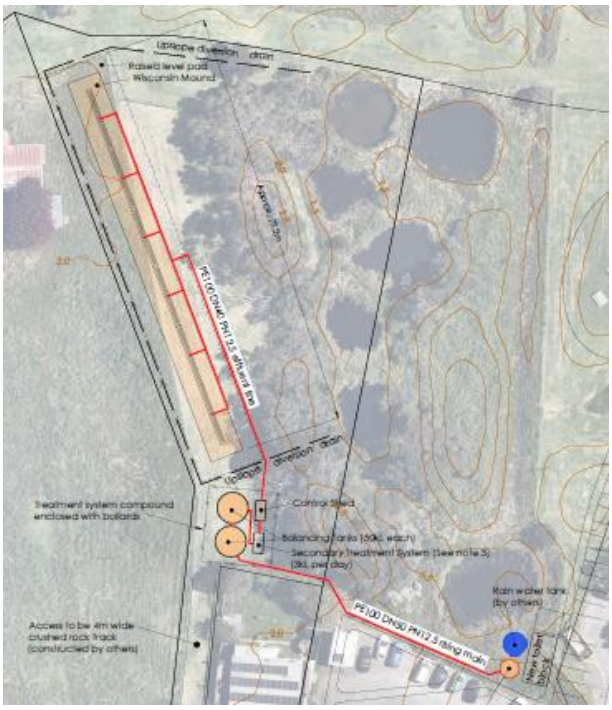
Information Sheet: November 2021

KENNETT RIVER TOURISM INFRASTRUCTURE IMPROVEMENTS

Waste water treatment plant



A new wastewater treatment plant (WWTP) has been designed to accompany the new public toilet being installed in Kennett River as part of the Geelong City Deal funded project.

The current design is for a Wisconsin Mound. However, the City Deal team are currently exploring the feasibility of upgrading the Kennett River Caravan Park treatment plant as an option, together with DELWP (Department of Environment, Land, Water & Planning) and GORCAPA (Great Ocean Road Coast & Parks Authority).

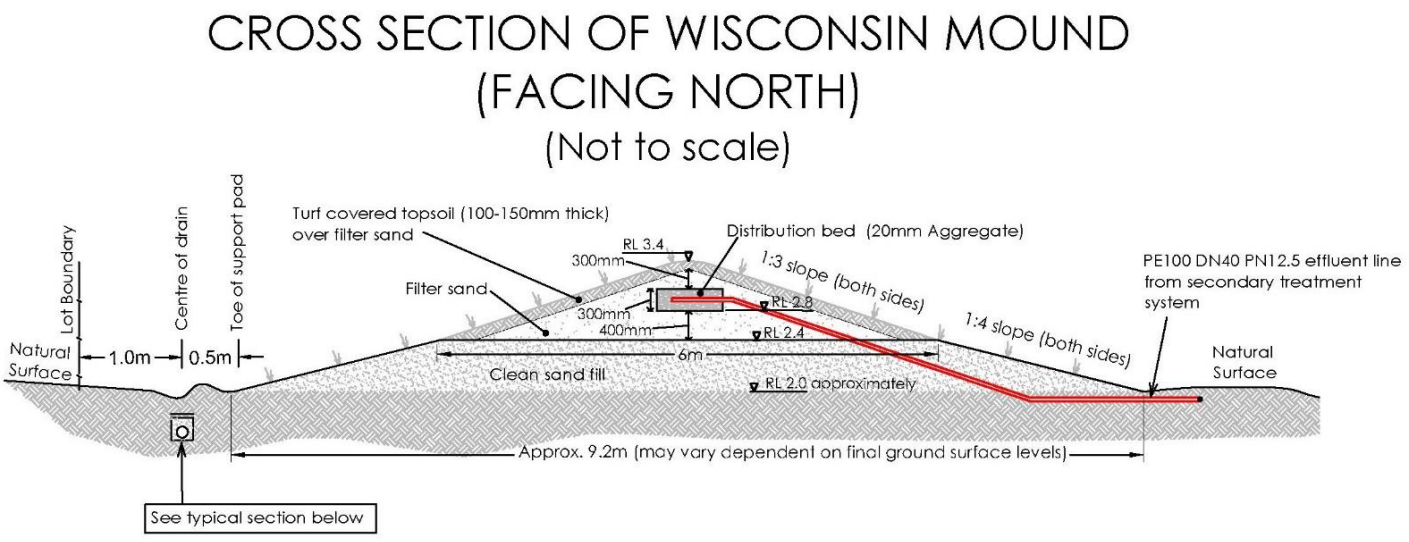
The capacity of the WWTP takes into account expected usage of the new public toilets together with consideration of historical pump-out trends. The design included a wastewater management flow profile which is representative of the highly variable and seasonal wastewater flows which will be experienced by the proposed facility.

The most suitable location was determined to be the west side of the existing wetland. This location was determined from soil analysis, site evaluation and other studies to satisfy regulations such as EPA and the catchment authority. A Land Capability Assessment (LCA) was also completed in September 2020 by AGR GeoSciences (AGR) which informed the design.

New wastewater treatment plant designed by DWC – click here to see full report.

The proposed treatment plant will comprise a primary septic tank, 2 x 50,000 above ground sealed (balance) tanks, an ultraviolet (UV) disinfection plant and a (1.8m) high elongated Wisconsin (sand) mound approximately 75m long x 9m wide. Due to the flood prone nature of the site, the importation of 400mm of good quality fill (sand) is required to ensure that the point of effluent injection into the mound (i.e. the base of the distribution bed) is at or above the 5% AEP* Design Flood Level (2.8 mAHD).

The mound will be covered in instant turf upon completion.



The design for the WWTP must satisfy all current and applicable codes of practice under the Environment Protection Act (EPA Publication 891.4) and Australian Standards (AS 1547:2012). Based on the expected toilet demand, the mound will receive a maximum of 3,000 Litres/per day of UV treated wastewater.

Water extraction and wastewater dispersal

The water required for the new toilet facility will be sourced predominantly from the Kennett River via a metered system and complimented from rainwater harvested from the roof. Metering will be licenced and compliant with Southern Rural Water standards as the designated Water Authority.

Dispersal of treated wastewater will be via the sand (Wisconsin) mound through a process of ground filtration, take up from the turf and atmospheric evaporation.

Protecting the river and environment

The WWTP has been specifically designed to sit within the sensitive Kennett River estuary environment in land which is subject to inundation. The Authority responsible for river health (CCMA) must be in support of the design. Design Specifications require that all access lids are sealed and that all non waterproof electrical equipment is above the 1% AEP Design flood level to negate impacts from flooding events. The flat nature of the site is also beneficial in reducing the likelihood for damage to the mound in times of flood.

Low usage of the public toilets is expected during periods of flooding which will result in very low wastewater flows. This will prevent damage to the mound and reduce environmental impact during significant flood events.

Water quality monitoring

Water quality monitoring is in two parts. Firstly, monitoring of the WWTP system will need to occur to ensure the biological filtration system is working. This will be undertaken a minimum of once per year by the future asset owner on a regular basis and will be based on approved requirements as determined by the Environment Protection Authority (EPA) Victoria process outlined below.

Secondly monitoring the water quality of the river will occur. Water quality in Kennett River is currently undertaken by Colac Otway Shire on a monthly basis between October and April with water quality test results available on the Council website at: www.colacotway.vic.gov.au/Recreation-tourism/Lakes-and-Waterways.

Satisfying regulations

The WWTP must comply with industry and environmental standards including:

- Environment Protection Act 2017
- EPA Victoria Code of Practice Onsite Wastewater Management (Publication 891.4 2016)
- EPA Victoria Code of Practice for Small Wastewater Treatment Plants
- Plumbing Code of Australia 2015 (as amended).
- All relevant Australian Standards.

The entire Kennett River Tourism Infrastructure Improvements project must comply with the requirements of the following;

- Water Act 1989
- Environment Protection and Biodiversity Conservation (EPBC) Act 1999 (to identify the potential impacts to matters of national environmental significance) of which one is salt wedge estuaries of central and western Victoria. Kennet River is one such estuary.
- Marine and Coastal Act 2018
- Aboriginal Heritage Act 2006
- Environmental Effects Act 1978
- Flora and Fauna Guarantee Act 1988
- Heritage Act 2017
- Road Management Act 2004

AEP (annual exceedance probability - measured as a percentage, AEP is a term used to describe flood size. It is a means of describing how likely a flood is to occur in a given year. For example, a 5% AEP flood is **a flood that has a 5% chance of occurring, or being exceeded, in any one year. This used to be referred to as a 1 in 20 year flood event in that on average it would occur once in 20 years.*

Waste water treatment plant – Frequently Asked Questions

Why is a new wastewater treatment plant being built at Kennett River? Kennett River successfully advocated for public toilet facilities to cope with the demand of tourists visiting this Great Ocean Road hamlet. The Geelong City Deal funding provided $400,000 for a new waste water treatment plant to accompany the new public toilet. As Kennett River does not have a sewerage system, a treatment plant is required to process waste generated from the proposed public toilet. The new public toilet requires a wastewater treatment plant (WWTP). The current design is for a Wisconsin Mound as per the attached information. However, the City Deal team are currently exploring the feasibility of upgrading the Kennett River Family Caravan Park treatment plant as an option, together with DELWP (Department of Environment, Land, Water & Planning).

1. **What is a Wisconsin Mound wastewater treatment plant and how does it work?** This is a raised elongated sand mound specifically and traditionally designed to treat wastewater within an area that is prone to flooding.
2. **Will the EPA Victoria be notified of this proposal and if so when?** Yes, the Environment Protect Authority (EPA) Victoria have been formally notified of this proposal on 8 September 2021. The permission pathway form submitted to the EPA contains comprehensive design information for the facility as outlined in the WWTP Design Package provided to the community on the Council website. The response from the EPA regarding Kennett River WWTP proposal provided the following: *EPA Publication 891.4, section 1.5 states: where a commercial premises, that is used intermittently, generates a peak load of more than 5,000 L/day, the wastewater may be stored in large balance tanks and piped to the onsite treatment system at a rate not exceeding 5,000 L/day. The Kennett River WWTP proposal aligns with this situation and is not a prescribed A03 (sewage treatment) activity requiring application for Development Licence per the Environment Protection Regulations 2021*. Therefore the WWTP will be the responsibility of Colac Otway Shire's Environmental Health department.
3. **What are the potential impacts (noise, odour, dust, emissions etc.)?** The WWTP tanks are sealed however if odour becomes an issue then carbon filters can be fitted as outlined in the Design Documents. Pumps are submerged so they will not be noisy. There will be no dust and no emissions.
4. **How long will the new WWTP operate for and at what times?** The pumps will kick in anywhere between 2 and 12 times a day and will be dependent on the pump capacity.The pumps will be barely audible.
5. **Are there indirect impacts, for example, truck movements?** There will be occasional requirement for service vehicles to access the tank area via a proposed access Road behind Kafe Koala constructed as part of this project
6. **Can a walkway be constructed near or over the new wastewater treatment plant?** There is possibility in the future to construct a walkway next to/beside the mound. It will not be possible to construct a walkway above/over the mound.
7. **Can vegetation be planted on or near the new wastewater treatment plant?** No, the standard procedure is for installing turf only on the mound.
8. **Is it safe to build a wastewater treatment plant in a flood-prone area – what safety measures are in the design to withstand flooding events?** The WWTP has been designed to sit within this sensitive environment. Design Specification for the Kennett River WWTP states that all access lids shall be sealed to ensure this aspect is met. Additionally, the design documents that all non waterproof electrical equipment is to be above the 1% AEP. Design flood level and so loss of operation or damage during flood events is not expected.
   The main part of the treatment system which could be impacted by flooding is the Wisconsin Mound which been designed such that the base of the mound distribution bed is at the 5% AEP Design flood event as mentioned previously.
9. **What measures will be taken to ensure that the river is not contaminated by the new wastewater treatment plant?** The design for the wastewater treatment plant must satisfy all current and applicable codes of practice under the Environment Protection Act (EPA Publication 891.4) and Australian Standards (AS 1547:2012) together with other related standards. A list of all applicable codes and standards is provided in the information sheet above. Sampling and testing of water existing the WWTP will be undertaken once annually (minimum).
10. **How often is the water in Kennett River tested and where can I find the results?** Kennett River is tested for water quality by the Colac Otway Shire on a monthly basis from October to April. Water quality

test results are posted on the Council website at: www.colacotway.vic.gov.au/Recreation-tourism/Lakes-and-Waterways

11. **Are any water-saving/sustainable measures included for the new public toilet and wastewater treatment plant?** Roof water will be directed to the water storage tank and therefore will reduce river water usage. Water usage will be recorded via metering as required by the designated Water Authority will apply.
12. **What is queueing probability analysis?** Queuing theory is the study of the movement of people, objects, or information through a line. If there are more than the services can cater for, the arrivals will enter the queue. Arrivals occur at a rate according to a Poisson process and usage times have an exponential distribution. For more information, please refer to the full Toilet Modelling Report for Kennett River (Planit Consultants, 2021) which includes an infographic to explain this modelling.