Sorell Council Southern Beaches CERMP Outfall Project

Outfall Project 2_SE115466

763 Primrose Sands Road
Anna Wilson October 2023
V2.0
25/01/2024

CERMP Project Brief

Manage Sorell Southern beach stormwater outfalls to protect dunes and beaches from erosion and pollutants as per the Sorell Council Coastal and Estuarine Risk Mitigation Project.

Each outfall project will follow overarching principles to ensure that works are beneficial to the community and meet overall stormwater and pollution management objectives.

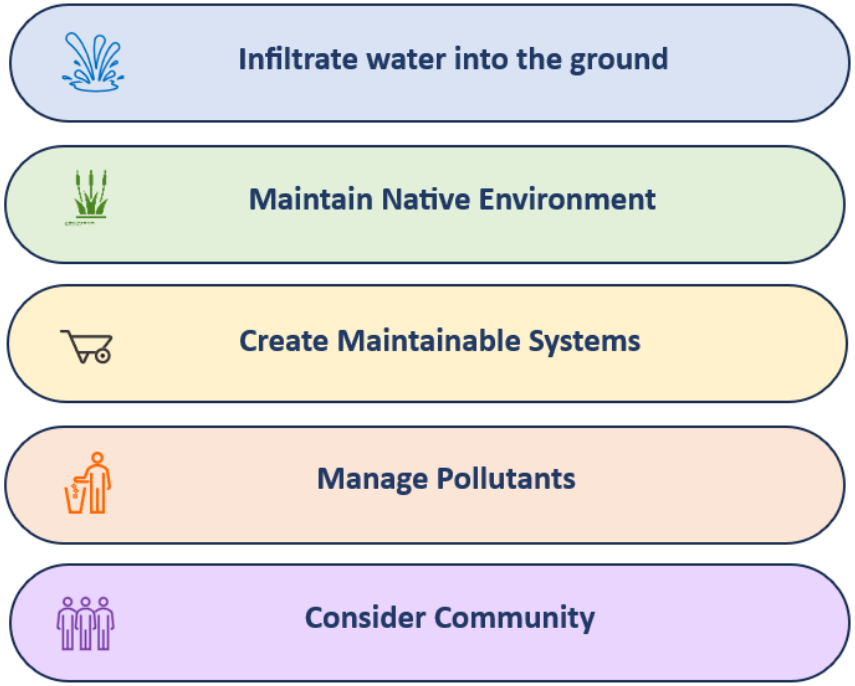
SE115466 Project Brief

The outfall notes from Sorrel Council for this outfall are:

Outfall had no headwall, gully formed need maintenance, work needed on pit and requires rockline pitching, pathways have had vegetation cleared and act as overland flow path towards a small rock bridge has been built across the pathway to allow drainage flow.

Aim of this project is to manage the existing erosion and minimise erosion risk into the future whilst providing some water treatment if possible and improving community outcomes.

CERMP Project Principles



SE115466 763 Primrose Sands Road Existing conditions

Inspection of this outfall determined a number of elements at this location

Existing Issues

This outfall is relatively straightforward. There is a small area of significant erosion upstream of the first walkway, an area of recovered erosion and two crossings. Previously the flow path was down a walking path along the line of the previous flow path. This has previously been addressed and appears to be regenerating well. The residual small gully in this location could be at risk of further in the section between the two walkways but the area below the second walkway seems not have such an erosion issue. Note that all areas are heavily vegetated so it was a little difficult to get a perfect idea of what was happening in the scrub zone.

Table 1 Tables of Issues

No.	Issue	Notes	Image
OP2.I1	Erosion gully forming at existing outfall	Outfall at a random location upstream of walkway approximately ¾ of the way down access track. Outfall area covered in vegetation.	
OP2.I2	Boggy area at first walkway crossing	Crossing is some planks to get over boggy area. This is an informal structure.	

OP2.I3	A. Boggy area at second walkway crossing B. Blocked culvert at second crossing	There is a small wooden bridge to get over the boggy area here. There is also an existing culvert that is blocked (orange) and covered in soil. Current flow path shown in blue	
OP2.I4	Erosion at second crossing	Erosion in the uphill cut of the second crossing. There are some small tunnel type erosion forming at this cut in a number of locations.	

Future Issues

No.	Issue	Notes	Image
OP2.FI1	Overland flow path through private property	The overland flow path is slightly diverted by the road and outfalls through a private lot.	

The Council drainage easement is along the walking track whilst the flow is diverted to the northeast along the road. Whilst I do not think this overland flow diversion is currently causing problems it will have to be monitored.
There are two possible recommended future solutions :

1. During road reconstruction works lower the portion of road at the walkway to ensure overland flow is directed down walkway. OR
2. When the lot to the east is developed extend the roadside drainage line north east into the lot and divert it down the next overland flow path a short distance into the lot. This would also consolidate two overland flow paths. This option will need to be confirmed by survey.

Recommendations

No.	Recommendation	Notes
OP2. R1	Extend pipe section and install headwall	Install rip rap to reduce velocity at headwall
OP2.R2	Divert trail over new pipe.	Remove existing planks / bridge.
OP2.R3	Erosion management	The area of erosion upstream of bridge two must be battered back and topsoiled. The topsoil should be lightly compacted, planted and seeded and covered with a jute mesh for plant establishment. This should prevent future erosion in this location.
OP2. R4	Clear out existing culvert and keep existing secondary flow path.	Looking at previous imagery (pre 2000 ListMap) the walkway extended directly downhill as shown. This likely led to significant erosion issues that have been effectively mitigated by redirecting the foot way and the flow path. The existing culvert may have been left to block and the flow diverted under the newer small wooden bridge to assist with the remediation of the original erosion. The area through here now is densely vegetated and appears to have remediated well. The recommendation is to clear out the existing culvert and keep the newer flow path as back up.
OP2.R5	Add details of infrastructure and maintenance regime to asset management system.	Adding details of hard infrastructure as well as green infrastructure will ensure the asset is captured in the asset management and maintenance system. This allows Council to track the works on these assets more accurately.

Figure 1 2019 Aerial Photography showing recommendations.

Construction Notes

- ⊕ This is a small, straightforward project.
- ⊕ It is recommended Council utilises Council works staff with an engineer overseeing the work. This will ensure the works staff are familiar with the issues and how to resolve them.
- ⊕ The plan for the outfall is limited in detail due to a lack of survey available as the area is thickly vegetated.
- ⊕ It is not recommended the vegetation be cleared until the works are ready to be undertaken to minimise erosion risk.

Figure 2 Pre 2000 Aerial photography showing old walkway location

Maintenance Requirements

1. **Ensure that area continues to have good vegetation coverage.** If vegetation is removed in the flow path effective re-establishment and erosion control measure must be installed and maintained until effective vegetation levels are re-established. Some removal of fallen debris will not affect the erosion risk.

2. **Regularly check outfall to ensure erosion is not establishing at outfall**. Fill in and re-establish dispersion measures.

3. **Regularly check culverts**. Clear as required. This area is subject to a high leaf litter load so regular clearing is required.

4. **Check area after heavy rain events.** Inspect culverts and bridges after heavy rain events. Remediate as necessary.

5. **Erosion and Sediment Control for works and development**
   Ensure upstream development and any clearing that exposes soil includes effective erosion and sediment control to reduce culvert blockage risk and remains in place until vegetation is established.
   Options for erosion control include using a jute mesh to stabilise the sandy soils and seeding and planting through the mesh.
   Another option may be to sue a soil binder which vegetation can also establish through.