

Victoria Court Stormwater Outlet

TO Tairua-Pauanui Community Board
FROM Sam Edlin - Roading Engineer
DATE 25 March 2015
SUBJECT **Victoria Court Stormwater Outlet**

1 Purpose of Report

For the Tairua-Pauanui Community Board to decide on how they want to proceed in regards to the new extension of the Victoria Court/Vista Paku stormwater system outlet.

2 Background

Design of the new stormwater system to mitigate flooding was completed after investigation. Refer to Attachment B for a copy of the final design showing the outlet location. This was undertaken after requests from property owners in Victoria Court were made to improve the stormwater system.

The outlet was designed in the best location from a stormwater engineering perspective to enable it to work in the majority of conditions, while also requiring the least amount of maintenance. Another consideration was that the location of the outlet was selected as outside the coastal marine area (CMA), and as such did not require resource consent for the construction.

Draft designs, which included the constructed outlet location, were provided to the Whangamata/Tairua-Pauanui Area Manager, Tairua-Pauanui Community Board Chair and the Community Field Representative for their comment. With no comments relating to the outlet location received; the design and subsequent works proceeded.

Eastern Pipe Layers Ltd were awarded the contract for the construction and have completed the work as per the design.

3 Issue

Members of the Pauanui community have requested the extension of the new stormwater system outlet, from where it currently ends approximately 25 metres from the edge of the reserve, to the edge of the reserve. Refer to Attachment A for photos of outlet as it exists currently.

A number of the issues raised regarding the current outlet location from some members of the Pauanui community are summarised below:

- Ponding at the outlet off the end of the existing concrete pad, is a concern
- Walkers and cyclists that currently walk along the reserve at the waters edge because that is the driest and hardest area, will have to detour around the drain and during wetter periods will have to walk through the damp area to get back to the harder drier areas to walk.
- The drain will be a collection point for mosquitoes and insects.
- Grass and other weeds will grow in the drain and require constant Council maintenance.
- There are safety issues with children playing in the drain.
- Stagnant water will create a smell and the possibility of disease.
- The drain will catch any undesirable runoff from homes and the roads which will collect in the drain and concentrate.
- At peak rain events the water will wash out the open drain and probably widen it and carry the sand etc into the harbour and increase the sedimentation and pollution.

4 Discussion

The following options have been considered and the advantages/disadvantages of each are presented below:

| Option | Work involved | Approx. additional Cost | Advantages | Disadvantages |
|--|---|-------------------------|---|---|
| 1) Leave outlet as situated currently | Nil | \$0 | <ul style="list-style-type: none"> • Mowable • No additional cost • No additional maintenance cost to maintain water flow from pipe • When swale is dry pedestrians should still be able to walk through the swale along the harbour edge | <ul style="list-style-type: none"> • Community do not favour this option • Some scour at the outlet may occur • Low risk of outlet blocking |
| 2) Leave pipe outlet where it is but install scour protection out from the existing concrete apron | <ul style="list-style-type: none"> • Install scour protection out from apron (length to be determined onsite), scour protection would be something to protect the swale until grass is established such as a form of geotextile. | \$2,000-\$5,000 | <ul style="list-style-type: none"> • No additional maintenance cost to maintain water flow from pipe • Majority of the swale will be mowable • Scour will be mitigated at the outlet | <ul style="list-style-type: none"> • Minor additional maintenance costs • Low risk of outlet blocking |
| 3) Extend existing pipe to edge of reserve (approx length | <ul style="list-style-type: none"> • Excavate swale from pipe to be extend at existing grade | \$15,000 - \$20,000 | <ul style="list-style-type: none"> • Favoured option by community • Mowable | <ul style="list-style-type: none"> • Large additional cost with no benefit to the pipe operation • Pipe invert will be below beach level based on current pipe grade. This will mean that the |

| Option | Work involved | Approx. additional Cost | Advantages | Disadvantages |
|--|---|----------------------------|---|---|
| = 25m) | <ul style="list-style-type: none"> • Extend pipe 20m • Relocate headwall • Cover pipe with topsoil and grass | | | <p>pipe capacity will be restricted at the outlet</p> <ul style="list-style-type: none"> • In rain events at high tide capacity of the pipe will be restricted and sea water may even be forced up the pipe which will cause stormwater to back up. • Potentially this option will decrease the capacity of this stormwater system due to bullet point 2 and 3 above. • Maintenance costs will be increased • High risk of outlet blocking • A mound will need to be built over the pipe with the desirable depth of cover over the pipe being 600mm the mound will be upto approx 1m higher than the existing reserve level • Resource consent required which will delay pipe extension. |
| <p>4) Install an upflow pipe with grate at the existing outlet and allow water to disperse over very shallow swale in reserve</p> | <ul style="list-style-type: none"> • Install vertical pipe at outlet with grate at reserve level • Fill current swale leaving a depression at the surface to guide water to the harbour | <p>\$5,000 to \$10,000</p> | <ul style="list-style-type: none"> • Reserve ground level will be similar to existing but with a shallow swale through it • Mowable • Pipe capacity better than extending the pipe • Normal high tides should not flow up swale | <ul style="list-style-type: none"> • Medium to large additional cost with no benefit to the pipe operation • Increased maintenance costs due to silt from catchpits etc will collect in the upflow pipe and this will need clearing out regularly. • Potential for outlet to be blocked by silt as per bullet 1 above is high • A shallow swale is still required • High risk of outlet blocking • May not meet the communities expectations |

Staff recommendation

Council staff have considered the community concerns, and their desire to minimise aesthetic impacts of the new stormwater system. However; the additional capital costs, ongoing operational cost and risk associated with extending the pipe as requested, means that staff cannot recommend an option to extend the pipe.

Staff recommendation is Option 2 to leave outlet where it is but to mitigate scour by installing scour protection i.e. geotextile matt that grass can grow through. This option is the best option in regards to the operation of the pipe, least cost maintenance and maintains the maximum capacity of the new stormwater system.

Funding

Option 2 can be funded from within the existing contract contingencies for the Victoria Court stormwater upgrade project. If the Tairua-Pauanui Community Board wish to extend the outlet to the edge of the reserve approval will be required for additional funding. Estimate of funding required is \$20,000; this funding would need to be sourced from the Pauanui depreciation reserves or retained earnings.

Timeframes

Option 2 can be implemented if the Tairua-Pauanui Community Board agree on this option. This work could be completed by the end of April/early May.

If the Tairua-Pauanui Community Board decide to go with Option 3 then resource consent would be required first, meaning that the likely construction timeframe would be in June 2015.

5 Suggested Resolution(s)

That the Tairua-Pauanui Community Board:

1. Receives the report.
2. Agree to leave the pipe outlet where it is, and install scour protection out from the existing concrete apron (Option 2) as recommended by Council staff.

References-Tabled/Agenda Attachments

Attachment A *Photos of current outlet location*

Attachment B *Design showing outlet location*

Attachment A Photos of Stormwater outlet

Attachment B

Attachment B Victoria Court Stormwater Design Showing Outfall