

# MORE THAN A DRAIN; THE ECOLOGICAL SURPRISE OF HARRISONS CUT DRAIN

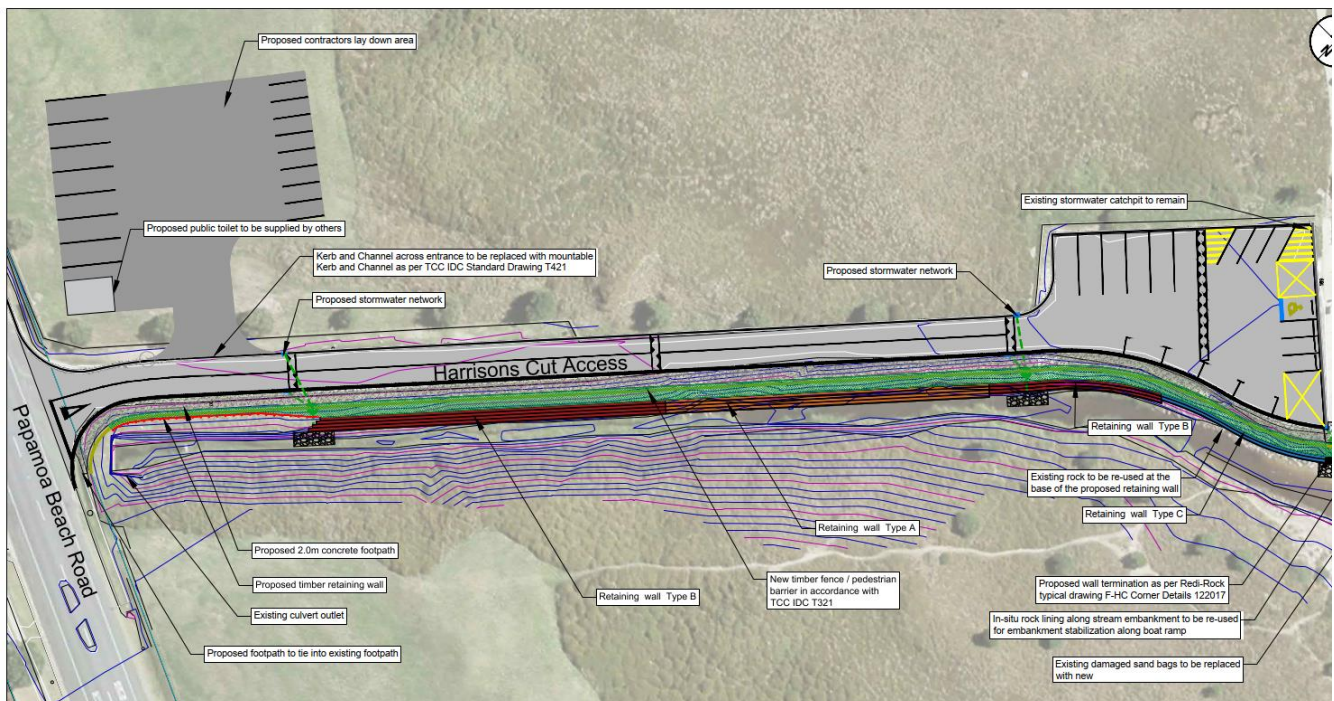
***Gareth John, Project Manager, Tauranga City Council***

The Harrisons Cut drain (from Papamoa Beach Road to the foreshore) was severely damaged in a storm event back in August 2018. The embankment above the drain has an access road to a car parking area and boat ramp (including beach access). This drain suffered large scale erosion from the storm event and would likely fail in another such event that would likely result in the road collapsing and access to the car parking area being cut-off. As such, in 2019 Tauranga City Council (TCC) decided to look at upgrading the drain and embankment with a retaining wall on the western side.

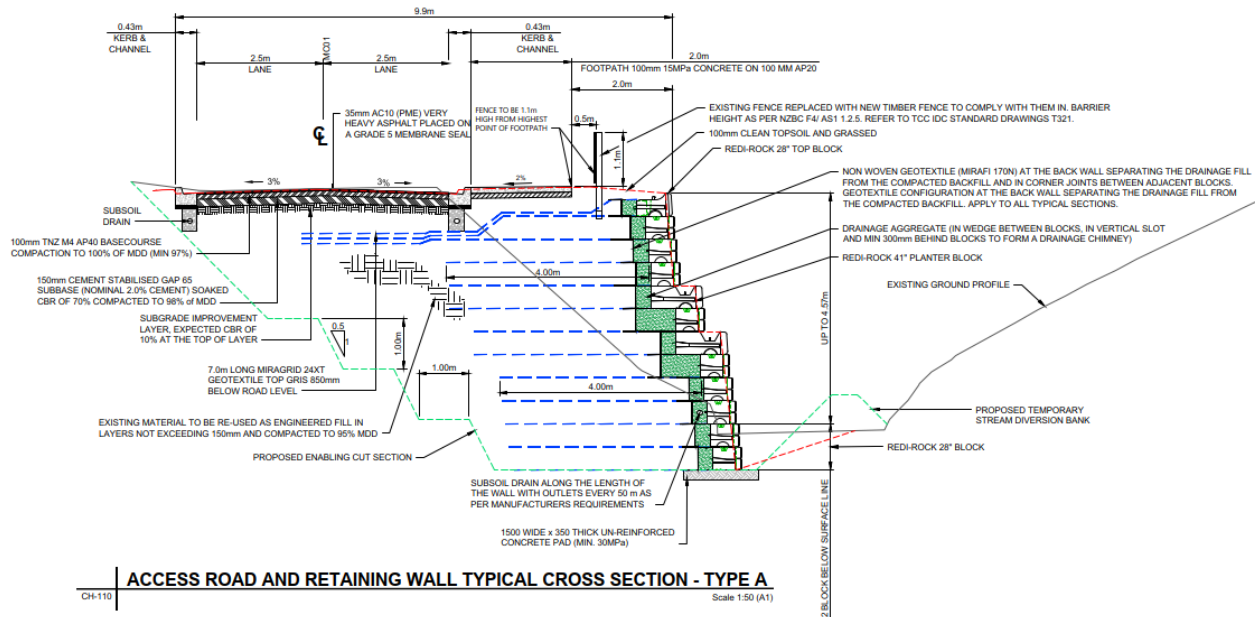
Investigation, design and consenting took place between 2019 and 2021. The objective of the project was to upgrade the existing road/accessway and drain to provide safe and resilient access to the beachfront and carpark. The scope included minor earthworks, construction of Redi-Rock retaining wall to support the road/accessway (approx. 175m of total wall up to 4.5m in height), minor drainage, road reconstruction (new pavement/surfacing, kerb/channel, line marking and signage), and landscaping.

The other key objectives of the project included cultural acknowledgement and protection of threatened species within the drain and dune habitat.

Plan view of works below:



Cross-section of works below:



Construction began in April 2022 (once the summer/peak season ended) and this is where the excitement begun. Works commenced with the typical enabling works, ecology surveys, skink capture and fish salvage/relocation. Note that fish salvage/capture was required as we needed to divert the drain, dewater, and install boxing for our retaining wall footing within the drain.

During the investigations, design and consent preparation very little relevance was put into the ecology of this stretch of drain. Both Councils and the ecologist didn't expect to find much habitat or fish numbers in this highly modified and low value drain.

Well, they were wrong! We were all wrong!

During fish salvage of this small section (approx. 175m) of drain the ecologists captured and relocated a whopping 2,132 fish (including some 'At Risk' species). The fish salvage was undertaken by both Boffa Miskell and Bioresarches between April through to June 2022.

Boffa Miskell fish relocation efforts are noted below

- 40 longfin eel (*Anguilla dieffenbachii*; At Risk – Declining),
- 164 shortfin eel (*Anguilla australis*; Not Threatened),
- 12 redfin bully (*Gobiomorphus huttoni* – Not Threatened),
- 57 giant bully (*Gobiomorphus gobioides*; At Risk – Naturally Uncommon),
- 688 yellow eye mullet (*Aldrichetta forsteri*; Not Threatened),
- 282 common bully (*Gobiomorphus cotidianus*; Not Threatened);

- 70 unidentified bully (*Gobiomorphus* sp.);
- 61 unidentified eel (*Anguilla* sp.,; juvenile eels); and
- 528 inanga (*Galaxias maculatus*; At Risk Declining).
- 2 parore (*Girella tricuspidata*; Not Threatened).

Bioresearches fish relocation efforts are noted below:

- 6 longfin eel
- 45 shortfin eel
- 5 redfin bully
- 2 giant bully
- 6 yellow eye mullet
- 58 common bully
- 105 inanga
- 1 parore

Photo of Shortfin eel captured and released at Harrisons Cut below.





Boffa Miskell fyke nets set throughout the middle portion of Harrison's Cut drain below.



Photo of large female longfin (approx. 70 years old)



Construction was completed in December 2022 and was delivered on time and well below budget, even with all the additional fish salvage required. However, the project will be

remembered for the large fish salvage numbers and the importance these drains are for our environment. This project goes to show you that that even a somewhat unassuming drain can be home to an abundance of ecology and life.