

**Folder [Beach scour and algae bloom]**

WRA Whangamata Rate Payers Association &gt;

Folder [WRA Stormwater Action Group (2023)] &gt;

Folder [Williamson Park Pond Weir]

**Williamson Pond History:**

The Williamson pond was formed some time in the late 1970's.

In the 1960's Williamson and Ocean Roads were formed and had pipes installed. These flowed out into the surf as 2 discharge pipes.

By the 1970's these pipes were being eroded and damaged so it was decided to cut them back to there current position at the pond and dig a depression to allow soakage to occur from the discharge waters from Williamson and Ocean.

Early photos show no weir.

Apparently according to locals at some time the sea breached the sand dunes (or rather the pond became full and breached the sand dunes (as it did in Island View in 2017) and waves came right back to the discharge pipes.

The first weir was built about 3m towards the surf from the current weir.

Council won't provide records but we believe that following the 2018 Opus report on the pond a new weir was built with something we cannot determine behind the weir and new bigger diameter pipes were installed from Ocean Rd into the discharge point in the pond.

**What's wrong:**

When Williamson Rd and Ocean roads were formed and piped they created an unnatural catchment area. Previously before seal road water would dissipate to the verges and soak into the water table.

The pipes now collect all the water from the catchment area and form a catchment discharge - that causes an adverse effect on the pond area - ie it now received more water than it did before the pipe network. The road is in the name of progress.

Over the years the pipes have been extended multiple times to now collect further up Williamson Rd, into the golf course, further along Ocean picking up Lowe, Achilles and Rangī and much of the area between Rangī and Williamson. This has enlarged the unnatural catchment area.

Under the old RMA changing a natural catchment area is not permitted (without very strenuous reason eg nationally important highway).

In 2019 or thereabouts the Pipes were increased in diameter to again increase the catchment.

If TCDC had a CSDC I would expect WRC to decline such an extension as it would have adverse effects in storms to scour and pollute the beach.

The weir is defective as it does not provide infiltration through to the Ocean. This may be deliberate to ensure all catchment is infiltrated into the sand through the base of the pond.

The depth of the pond breaches the water table so the base no longer provides infiltration.

The sides of the pond is all that remains to infiltrate but in times of high rainfall the surrounding water table is high and becomes the water level which prevents infiltration out.

The still water then gets HAB and harbours toxic PAH, metals and others eg Sulphuric Acid once Oxygenation, Phosphates and Nitrogens are depleted. This is NOT a water feature.

To clean the pond we either wait for a storm so it dilutes, suspends and dumps these toxins onto the beach or its deliberately pumped onto the beach to remove the hard sludge in the base.

**What must happen:**

1. Reduce the catchment area to reduce the water discharge to reduce the adverse effects - toxic waste, need to pump and dump, reduce scouring
2. Change pipe networks to Otahu River where discharge does not have adverse effects

3. Where gravity does not allow sufficient fall to Otahu we will be stuck with dealing with some stormwater - this can be done by more soakage devices and a separate removal of the aquifer that will be removing cleaned water
4. Install several smaller outflows along the pipe routes so we have many smaller outfalls that do not cause the same extent of scouring
5. No detention device to store water or be below the water table

#### What would the Wetland Proposal bring:

Greater maintenance problems, high cost, will dry up and fail in droughts, will pollute the beach worse with vegetation debris, it will NOT assist in controlling beach scour or HAB. It will bring mosquitoes, vermin and fire risk. It will be unsafe for children. Above all it will remove part of the most valuable commodity we have - open land by the sea.



105 Weir at 13 March with pumps running.jpeg

This was about 4 weeks after Gabrielle when the pumps were working and weir was still overflowing.

See the water level in storm surges

One decent log is washed up

Flutter valves will need to be sturdy



110 Weir after King Tides 1 November.jpg

Weir buried in sand up to last gabeon with driftwood topping.



124 King Tides breach weir 20230227\_105746.jpg

Level of breach is significant

Weir MUST be raised

If sea levels do rise the level needs to take account of this.



130 King Tides breached weir 1 November 2023.jpg

Storm tides breached the weir on 1 November.



140 20230418\_081644.jpg

Lake forming on the Beach in front of the weir as 18 April 2023

Note erosion

The shape of the Vee to the weir location is poorly designed as it forms the surge and magnifies the surges velocity and momentum so makes it worse.



141 erosion of beach into channel 20230618\_090914.jpg

Whilst the water tops the weir we get erosion as water makes its way to the Ocean.

Normally the sand recovers quite quickly but it is not desirable



150 20230620\_082053.jpg

Weir on 20 June 2023

Note depth of erosion

Old weir is the wire cages in the foreground.

It is unknown if this was pulverized by the Ocean or broken through to create the new weir behind



160 20231020\_080047.jpg

HAB quire concentrated on 20 October 2023 just before draining and cleaning.

Due to the temperate climate we will always get algae bloom in spring and summer.



189 1944 arial view of Williamson Park wher the pond is located.jpg

#### 1944 Arial

I accept we cannot go back in time but what we can do is remove the bad imprint we have made to date.

Catchment areas must be formed from natural catchment waterways. There is no waterway. There is no overland flow pathway. Everything about Williamson Pond we created to our detriment.

We cannot build-up bad infrastructure. We must reduce its influence gradually until its gone. That is our custodial role.

How amazing is this image?

It is never too late to reverse things one degree at a time.



2017 Williamson Pond being drained ex Alan.jpg

**From:** whangamata@dotclub.co.nz

**Subject:** Williamson Golf Course

**Date:** 26 May 2017 at 10:16:53 AM NZST

**To:** alanlynnwalker@gmail.com

Hi Alan,

I know that it is frustrating that the Williamson course remains closed due to flooding and not a lot

seems to be happening. We initially took the stance that council would "get onto it", accepting that they had quite a few problems elsewhere as a result of the April storm. However, in the past few days we have adopted a more aggressive stance with council, the local Community Board and TCDC staff because it seemed that there was no urgency to fix the problem. TCDC has responded with the following advice dated 25 May 2017. I summarise it below and you can see the full news item on TCDC facebook page.

"While progress has been slow, we have been working very hard to find a solution...we had to ensure that consent conditions set out for storm water management at Williamson park( not the golf course) are complied with... Machinery will soon be on site to clear the storm water pond of vegetation and silt build up along the face of the weir.... The pond will be fully drained and desludged.... This will bring the water table down. This work is expected to be completed by mid June, subject to weather."

TCDC staff believe this will bring down the water levels at the Williamson golf course.

So, hopefully the Williamson golf course will be up and running again soon. It is unlikely to be open for Queens Birthday weekend.

In addition, TCDC are planning to install a long term drainage solution on the Williamson golf course, but this will take time to design and get consents.

Regards

Michael

**From:** "tcdc\_noreply@tcdc.govt.nz" <tcdc\_noreply@tcdc.govt.nz>

**Subject:** Flood mitigation works continue at Williamson Park

**Date:** 25 May 2017 at 3:12:54 PM NZST

**To:** "alan walkert" <alanlynnwalker@gmail.com>

**Reply-To:** tcdc\_noreply@tcdc.govt.nz

#### **Flood mitigation works continue at Williamson Park**

The recent extreme weather events over the last month caused flood damage at Williamson Park in Whangamata, which our Council is still dealing with.

"While progress may appear to be slow to the public, we have been working very hard to find solutions for when extreme weather events affect storm water infrastructure in Whangamata," says Whangamata Area Manager, Garry Towler.

"We appreciate there's many points of view being offered from the community to consider, however we have to ensure that the consent conditions set out for storm water management at Williamson Park are complied with," adds Mr Towler.

Engineers have begun work to mitigate future flooding issues to properties in the Williamson Park vicinity.

Machinery will be on site shortly to clear the stormwater pond of vegetation and silt build-up along the face of the weir.

Once this is completed and the pond fully drained, it will then be desludged with the sediment pumped around the base of the remaining stand of pine trees in the park, and then covered with mulch and seeding.

"What this will result in is a vastly improved soakage basin in the pond and increased capacity of drainage through the weir which will bring down the water table" says Mr

Towler.

This work is expected to be completed by mid-June, subject to weather.

"We want to thank the community for their on-going patience during this time and ask the public to stay away from the pond vicinity until work is completed," adds Mr Towler.



20230129\_123751.jpg

29 January 2023 early Beach scour



20230313\_092808.jpg

13 March 2023 beach scour





20230313\_092914.jpg

Showing erosion of sand at discharge from weir.

This is after pumping.

At the beginning of the pumping water was flowing over the weir - then the pumps added to the water fall.



20230418\_081718.jpg

Can see the remnants of the old weir

This could be rebuilt with flutter valve pipes and a walkway along the top with a hand rail

When its raining the water runs over the weir and is deep along the Beach so people walking in sand shoes get their feet wet.

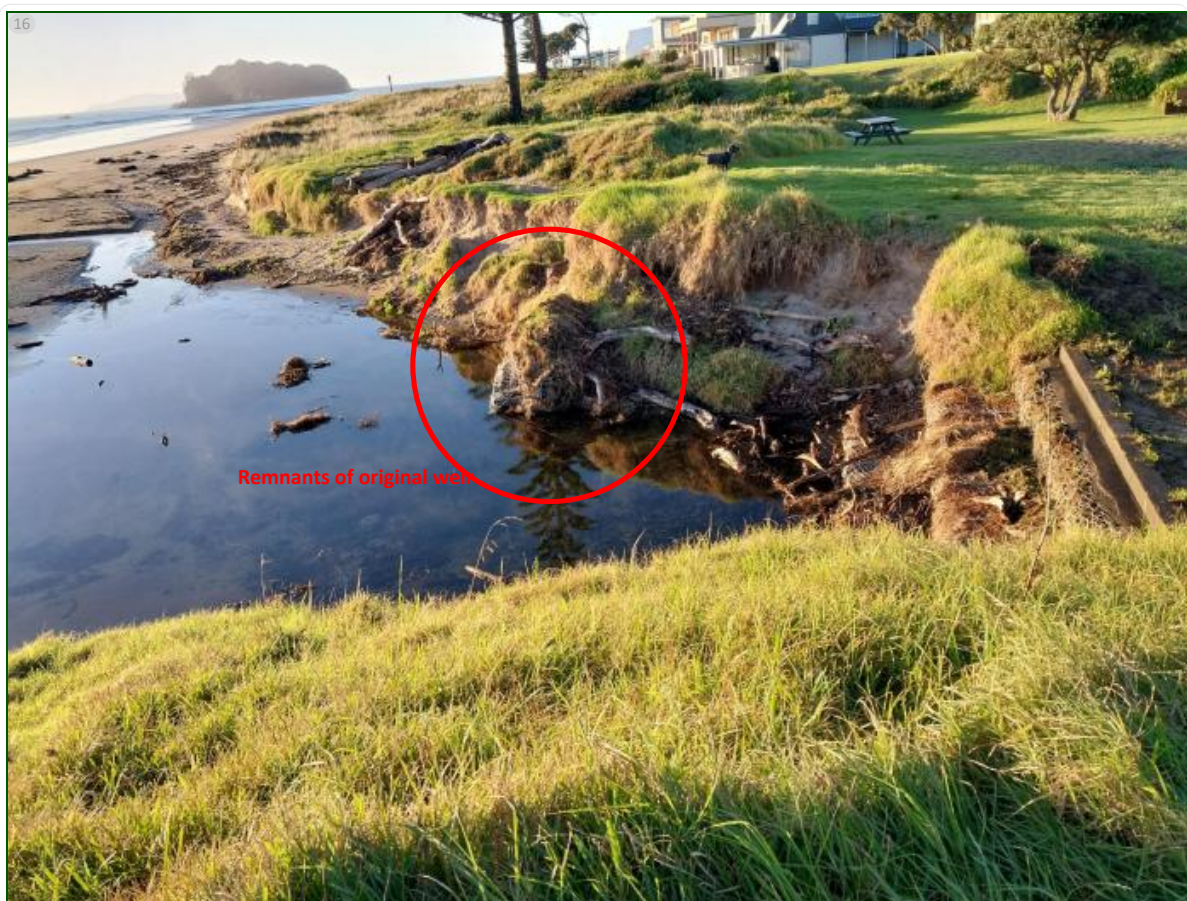
Not a big issue but people try and jump across and walk over the rocks and logs so is a accident

waiting to happen



20230418\_081806.jpg

Current state of weir(s) and lake forming with logs and debris lying around.  
This is right next to the surf club and often the flag Marshall area is right here.  
This is the carriage way discharge and the Golf Course water



20230513\_074420.jpg

13 May 2023 condition of sand dunes beside the spillway.



20230618\_090508.jpg

18 June 2023 Beach scour



20230618\_090915.jpg

18 June 2023 angle of beach scour looking back to weir



20230702\_111655.jpg

2 July 2023 scour shifted towards surf club



20230708\_084216.jpg

8 July 2023 scour now undermining weir - exposed bottom Gabion wire baskets. Note old weir now exposed. Scour now deep in comparison to remainder of beach



20231020\_080019.jpg

20 October algae bloom now almost fully covering pond - it stretches up the pond banks about 500mm and is very slippery. It has settled onto and smothering all the grasses and rocks.

This is called HAB harmful algae bloom



20231020\_080157.jpg

20 October 2023 seaward side of pond algae bloom.

NB: was cleaned out in February 2023.



20231020\_080233.jpg

20 October 2023 algae bloom looking back from sand dunes.

NB: Council erected these warning signs after I complained of safety hazard.



20231031\_074519.jpg

31 October 2023 sands now shifted - no more weir over topping so no new scouring so beach has recovered sand wise and blown - washed sand right up to the weir almost flush with the top of the weir.

If pipes were installed to release the water in the pond the scouring would continue or have blocked the pipes.

Maintenance would be needed - however when the weir over tops that does not cause flooding - it just means the pond is full and the discharge pipes are full and not working efficiently ie ponding water entering the pipe system catchment areas is not drained away.



CF58FF2B-3F8A-4130-B221-6F96F7A834A2.jpeg

About 4 weeks after Gabrielle this is like a river.

Can see debris up to the Norfolk Pine



Williamson Lake Weir 20230228\_090217.jpg

28 February 2023 showing scouring when the pumps were operating to empty the pond and remove the sludge.

Hard to see in the photos but the water is murky.

I am concerned the dumping of the contaminated pond water onto the beach has caused the loss of the Oyster catchers - ie polluted the sand and killed off the shellfish they feed on.