Update.
March 2018

Carterton Sustainable Wastewater Project

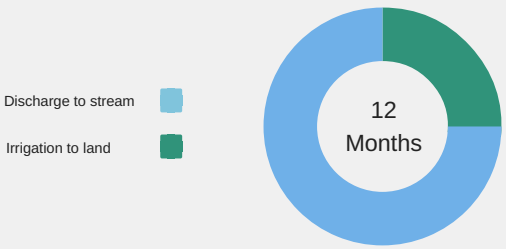
Carterton District Council has a long term vision to improve fresh water quality by removing treated urban wastewater effluent from streams. A great deal of work has taken place over the past few years to move us towards that vision. In 2014 we started irrigating treated wastewater to land during the summer months using a newly installed pivot irrigator.

Long term consents have been obtained to further increase discharge to land.

This leaflet describes the works for the second stage of our upgrade, started in mid January this year.

Firstly, a bit of background:

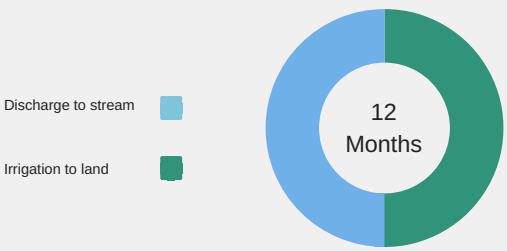
Pre - 2014



Council wastewater treatment plant

- Three oxidation ponds
- Limited irrigation onto 3ha of land close to treatment plant
- Partial Ultraviolet (UV) disinfection treatment of effluent
- April to December discharge to stream. January to March discharge to land
- Council purchased 67ha Daleton Farm in 2012
- New consents received in 2013 for a term of 4 years

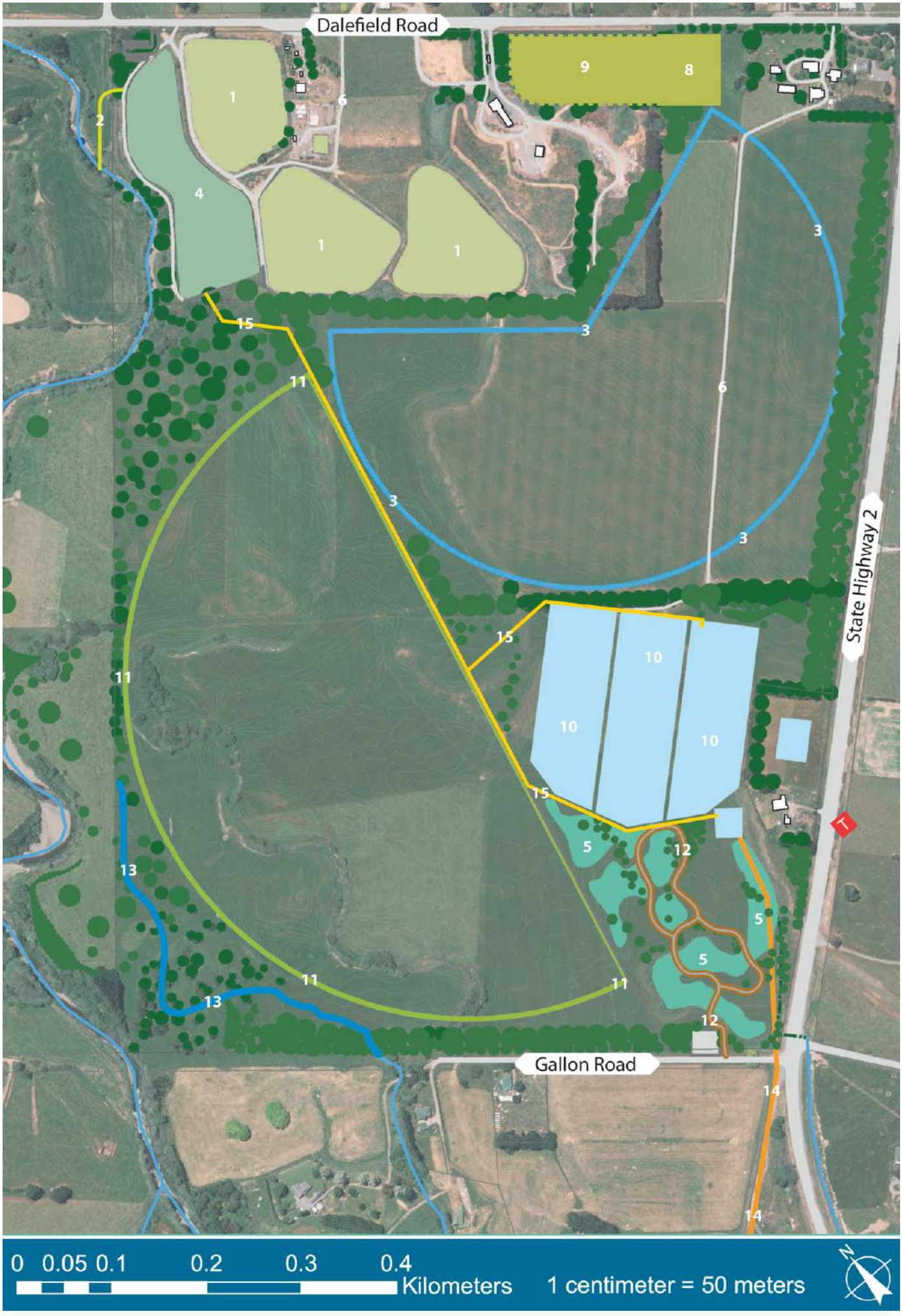
Stage 1: 2014-2016



Development of Daleton Farm

- Full-flow UV disinfection plant installed to improve water quality
- Centre pivot installed to irrigate treated wastewater to 20ha of Daleton Farm during summer months - only when the ground is dry
- Dripline irrigation on eastern shelterbelt plants
- Each summer, about 150 million litres of treated wastewater that otherwise would have gone into the Mangatārere Stream was irrigated onto Daleton Farm
- Since irrigation on Daleton Farm was commissioned in the summer of 2014/15, health of the in-stream ecological habitat of the Mangatārere Stream has shown tangible improvement, downstream of the wastewater treatment plant
- Amenity wetland area planting began

The plan.


Dalefield Road
Gallon Road
State Highway 2
0 0.05 0.1 0.2 0.3 0.4
Kilometers
1 centimeter = 50 meters

Treatment process.

Key

Existing

- Stream/River
- 1. Oxidation ponds
- 2. Existing stream discharge
- 3. Pivot Irrigator 1
- 4. Original wetland
- 5. New wetland (under development)
- 6. Tracks
- 7. Buildings
- 8. Lined sludge disposal cell

Proposed

- 9. Lined sludge disposal cell
- 10. Sequential Batch Reservoir storage
- 11. Pivot Irrigator 2
- 12. Wetland walkway
- 13. Ephemeral waterway
- 14. Relocated stream discharge
- 15. Distribution pipe
- T 16. Transformer
- 17. Restoration planting

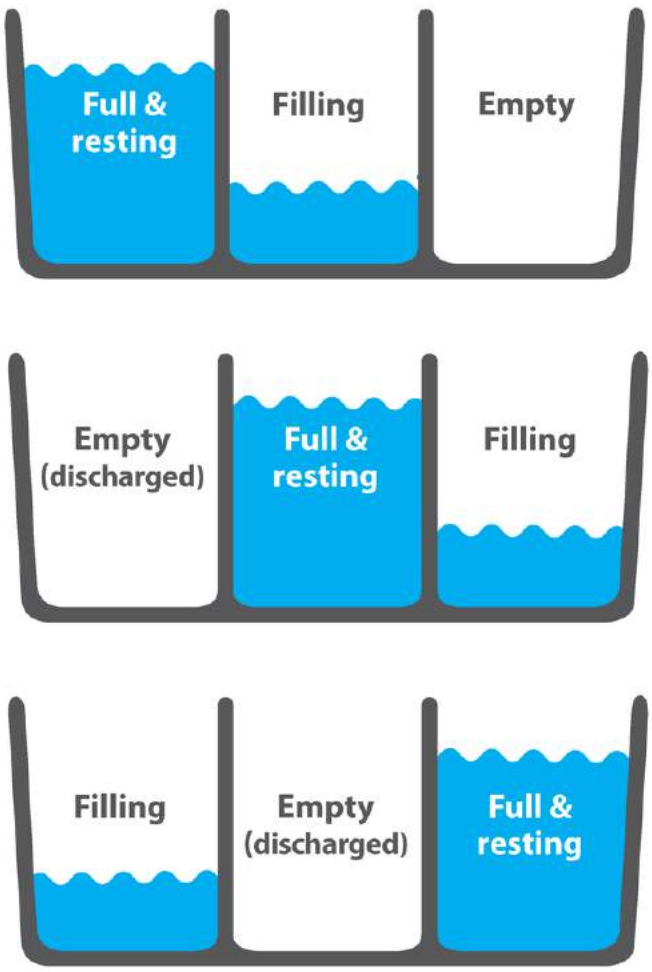
Sequential Batch Reservoir (SBR)

Treated wastewater effluent will be stored in a Sequential Batch Reservoir. While common in arid countries, this is the first of its kind in New Zealand and will become a model for other inland townships to consider.

It will improve freshwater quality through further treatment of tertiary effluent and provision of irrigation water.

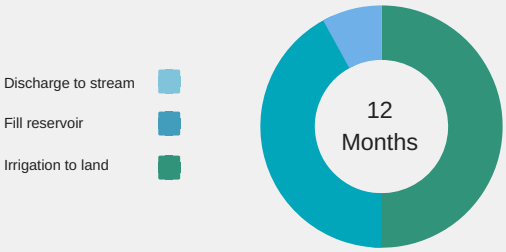
Batch Reservoir Basics

- A series of 3 independent reservoirs each has a separate cycle of filling, resting and emptying – an on-going continuous process.
- The resting stage of the sequence prevents fresh effluent feeding pathogenic organisms, leading to die-off that almost totally removes pathogens.
- Other mechanisms provide removal of nitrogen and other contaminants.



Next steps.

Stage 2: Next Steps



Optimise use of Daleton Farm

- Relocate ephemeral channel 2017/18
- Install new power supply to service new pump installations 2017/18
- Lay water supply feed to Gallons Road 2017/18
- House removal from SH2 site 2018/19
- Construct a 200,000m3 storage reservoir on Daleton Farm in 2018/19
- Relocate discharge from the unnamed tributary above the original wetlands to the lower reaches of the Mangatārere Stream in 2019/20
- Install a second centre pivot to irrigate an additional 20ha of Daleton Farm, doubling the irrigated area in 2020/21.
- Discharge to stream only when it is at high flow (more than 3 x the median) from 2020
- Further redevelopment of amenity wetlands

Proposed timing.

2018

Relocation of ephemeral channel

Install new power supply

Lay water supply feed to Gallons Rd

Further redevelopment of amenity wetlands

2019

House removal from SH2 site

Construct 200,000m3 storage reservoir

New discharge pipeline

Further redevelopment of amenity wetlands

2020 onward

Install and commission second pivot irrigator

Discharge to stream only at high flow

Further redevelopment of amenity wetlands

For more information or for any queries please email info@cdc.govt.nz