

Christchurch City Council's Stormwater Management Plan for the Ōtukaikino River

I have reviewed Christchurch City Council's Stormwater Management Plan for the Ōtukaikino River. The SMP is a requirement of the Comprehensive Stormwater Network Discharge Consent (CRC214226). Its purpose is to limit the adverse effects of stormwater discharge on surface and groundwater quality and quantity and improve the quality of rivers and streams. The stormwater management plan sets out methods the Council will implement to meet the receiving environment targets in the consent, however, I do not have access to the original consent to check that this plan covers everything that was required in this condition, or due dates for completion of the SMP.

While I am not a water quality and/or stormwater expert I have highlighted points in this plan which may require further clarification from CCC. Additional input could be useful to obtain from stormwater experts within the Department (one suggestion may be James Brooks Asset Specialist 3 Waters, I haven't dealt with him before but he may have some further insights or may be able to suggest someone within the Department which has these expertise) and/or a planner if you require a more thorough review.

Positive inclusions in this plan include:

- Extensive use of artificially created treatment wetlands and basins, although I suggest that they make it clear that these are artificial wetlands created for water treatment- they aren't just diverting water into natural wetlands!
- Treatment for all urban stormwater via treatment wetlands or basins
- Provides good considerations and options to deal with contaminants into the stormwater network that sits outside of their control, e.g. investigations, consultation, liaison and advocacy with other agencies and landowners

Some additions to the plan I would recommend that it would be ideal to include, but may be out of scope of the plan:

- If council owned infrastructure within the stormwater network (e.g., culverts etc) provide for fish passage, and if not, what plans are there to improve this?
- Include a list of freshwater species (can be obtained from the New Zealand Freshwater Fish Database) found within the Ōtukaikino stormwater area. I am unsure of the exact boundary of this stormwater management area (this could be made clearer in the plan) but a quick NZFSS search within the wider area shows Canterbury Mudfish (threatened – nationally critical), lamprey (threatened – nationally vulnerable), longfin eel (at risk – declining), upland bully (not threatened), common bully (not threatened), giant bully (naturally uncommon), bluegill bully (at risk – declining), Canterbury galaxias (at risk – declining), common smelt (not threatened), inanga (at risk – declining), and Torrentfish (at risk – declining). An assessment of the impact of the stormwater network, management, infrastructure, and any resulting changes to water

quality/quantity on these species/population should be provided and mitigation proposed.

- Details on maintenance of drains/waterways within the stormwater network, e.g., are these maintained by CCC in regard to macrophyte and sediment removal, and if so, how are they ensuring this is done in an ecologically sensitive way? Links to any best practice documents including fish passage, timing and location works (ideally outside of spawning/peak migratory times and outside of spawning reaches)?
- Is any monitoring to determine efficacy of wetland treatment systems proposed?

Some points which aren't ideal, or need further clarification, include:

- As in draft form some information is missing to be added at a later date, and other issues such as tables are not numbered to correspond with text which does make it hard to read and understand in some places, and details such as recent infiltration basin monitoring, details on contaminant modelling, contaminant mitigation targets, and basic information about the catchment (e.g. size) etc are still pending. This will be added at a later date but does make it hard to assess fully.
- Low level of heavy metal removal in wetland treatment, meaning the plan has to largely rely on non-legislative methods to reduce heavy metal contamination e.g. advocacy etc
- Some exceedances of dissolved copper and zinc in monthly water quality testing but none since 2019- are there any actions should regular exceedances occur in future?
- Zinc sediment concentration exceedances for 1 of the 3 monitoring sites, above LWRP but not ANZECC, this was 9 times greater than readings in 2019. What investigations are being done to ascertain the cause of this and reduce if possible?
- Industrial sites dispose of stormwater into ground soakage- what about impacts on ground water? And for those industrial sites that discharge into the stormwater system- what is the water chemistry of this discharge? Is there a way to require them to reduce heavy metal/other contaminants in this discharge? Monitoring and enforcement? Do they need individual discharge consents for this or is it a permitted activity?
- The SMP states: *'Stormwater management plans set out the means by which the Council will comply with the conditions in the CSNDC. However due to governance processes the SMP cannot address all environmental improvement targets signalled in the consent... The SMP is given effect through the Council's Long-Term Plan (LTP), which is a statutory process. The relative timing of LTP processes and the SMP do not permit this SMP to commit to unfunded, new initiatives to achieve aspirational targets.'* What is not being met and why? More detail required. Is it the surface water plan which will be started this year? When is anticipated completion date and when was the due date for this under the original consent conditions? Will this second part be completed within consent condition timeframes?

- It is stated that in stream habitat conditions at all sites had generally worsened compared to previous years and that they were typically wider, deeper, and slower than previous years with a higher cover of fine sediments- why is this? And how will this be mitigated against? I am assuming that this is due to clearing of these sites to optimise drainage, and if so these activities should be modified. I am a little confused though, as later in document it states that instream and riparian conditions were generally good with little channel modification. It would be good to get them to clarify this.
- The SMP states that riparian habitat had declined in some sites, and they had become dominated by willow and sprayed grass- why is this? Management by CCC or someone else? What can be done to resolve this? Mitigation such as willow removal and native planting?
- Dissolved oxygen is an issue in several sites below LWRP guidelines of 70% or greater saturation
- The SMP states: *Most monitoring sites were below LWRP guideline of a minimum MCI of 5, or minimum QMCI of 90.* Not ideal they aren't meeting targets but also I think they have the value targets for MCI and QMCI mixed up and these values should be reversed (e.g. MCI of 90, QMCI of 5)?