

Report No.	20-34
Information Only - No Decision Required	

FOXTON FLOOD MITIGATION

1. PURPOSE

- 1.1. To provide members with an update on the mitigation approach proposed to address flooding of Foxton.

2. EXECUTIVE SUMMARY

- 2.1. Flooding of the town of Foxton has occurred with relatively high regularity over many years, a function of the town's location and the way both urban and rural drainage has been configured. Land use change and improvements to on-farm drainage have undoubtedly had an effect on the frequency and severity of flooding but the primary driver of increased risk in the future will be climate change.
- 2.2. The operational overlap between urban and rural has driven a collaborative approach between Horizons and **Horowhenua District Council (HDC)** on a mitigation plan with provision made in both council's current Long-term Plans. That budget provision is based on a mitigation approach in the form of a relief pipeline through the town. More detailed technical work has identified limitations with that mitigation approach and has proposed an alternative that diverts floodwater to the south of the town.
- 2.3. That alternative approach is likely to cost more although the impacts to Horizons are, for a range of reasons, relatively muted. It will require a contribution, as yet unbudgeted, from the Whirokino scheme toward the cost of pumping. There are a range of sub-projects that form the overall mitigation strategy, including some wetland construction to reduce impacts on the health of the Foxton Loop.

3. RECOMMENDATION

That the Committee recommends that Council:

- a. receives the information contained in Report No. 20-34 and Annex.

4. FINANCIAL IMPACT

- 4.1. The current **Long-term Plan (LTP)** contains provision to meet Horizons 40% share of the cost of constructing the Cook Street relief pipeline, estimated at \$3M, with HDC meeting the remaining 60% of the cost. The revised mitigation plan could be up to 70% more however provision made within the Foxton East Scheme is likely to be sufficient due to the:
 - cost share with HDC;
 - contingency sum added with the LTP budgeting process, and;
 - intention to have the Whirokino Scheme contribute to the cost of the pumping station.
- 4.2. Provision for a Whirokino Scheme contribution is intended to be addressed as part of the LTP process; components of the mitigation plan intended to be constructed next summer will relate to Kings Canal, components that are stand-alone items and that don't require resource consent (that don't have any appreciable adverse effects associated with them).

11 March 2020

- 4.3. The LTP envisaged construction of the pipeline within the first three years, meaning existing budget provision is more than adequate to commence constructing elements of the mitigation plan in the 2021 financial year. Rating under the revised targeted rate classification commenced in the current financial year.

5. COMMUNITY ENGAGEMENT

- 5.1. This component of the current LTP has had considerable community engagement through social media, public meetings and the distribution to all Foxton East ratepayers of several newsletters.
- 5.2. The public meetings held over successive Annual Plan / LTP processes have not been as constructive as initially envisaged – residents will be advised of the changes to the mitigation plan through another newsletter and invited to make Annual Plan submissions.
- 5.3. An extraordinary meeting of Whirokino Scheme ratepayers has been arranged for 4 March to discuss the impacts of the revised mitigation plan on the scheme and the intention to make provision for a Whirokino Scheme contribution when the LTP is updated, again encouraging submissions.

6. SIGNIFICANT BUSINESS RISK IMPACT

- 6.1. While the matters addressed in this item are significant for Foxton they are not considered to be significant business risks for Horizons.

7. BACKGROUND

- 7.1. For the benefit of new members two previous items provide background and the sequence of events to this point – report 17-130 presented to the August 2017 Catchment Operations Committee meeting and 18-205 presented to the November 2018 Committee meeting. The presentation to the 26 February joint Horizons / HDC workshop is also available on the Hub.
- 7.2. Foxton has historically been impacted by flooding with a relatively high frequency, a function of the town's elevation and topography. Horizons' Foxton East Drainage Scheme is located directly east of the town – spill from those drains, in particular Kings Canal that runs along the eastern edge of the town, adds to flooding of the town. That threshold for spilling is relatively low – a rainfall event with a return period as little as 2 years (depending on duration and time of year).
- 7.3. The impacts of the June 2015 weather event were particularly severe on the town, prompting both Horizons and HDC (linkages between the scheme and the town's stormwater network) to consider mitigation options. That work was intended to be advanced through HDC's Catchment Management Plan (CMP) process for the urban areas in the district, although the CMP for the town was never completed.
- 7.4. Both councils have allocated a total of \$3M in their LTPs to fund a mitigation plan for the town, proposed to be a relief pipeline linking Kings Canal and the Foxton Loop. In the 2019-20 Annual Plan Council consulted on a revised targeted rate classification for the scheme to provide a more appropriate funding mechanism for the mitigation plan (servicing the debt that implementing the mitigation plan will incur, as well as ongoing operating costs).
- 7.5. In 2019 both Councils engaged engineering consultants E2 **Environmental Limited (E2)** to undertake the detailed design of the mitigation plan, starting with a review of the alternatives put forward through LTP / Annual Plan submissions. E2 completed their technical work in November of last year.

8. DISCUSSION

- 8.1. E2's technical work has concluded that the Cook Street relief pipeline is not a viable mitigation option; while it provides benefit in relatively modest rainfall events, those benefits become more muted with larger events. While more capacity is in theory possible (a larger diameter pipeline or multiple pipelines), costs begin to rise exponentially due to the sandy soils, high groundwater tables and the presence of other services.
- 8.2. As noted E2 considered a range of alternatives, including those put forward by submitters through the LTP and Annual Plan consultative processes. Detention has been traversed previously and although the revised mitigation plan contains a modest amount of attenuation there are a range of factors relating to soil type and topography that make it challenging as the primary mitigation approach. It's also an approach that is ineffective in long-duration events – the storage areas fill up. Other variants considered and discounted include enlarging the Purcell Street drain including the culvert beneath State Highway 1.
- 8.3. The mitigation plan recommended is presented in the figure attached. From my perspective I'm comfortable with both the expertise and degree of rigour applied by E2 and that the plan proposed is the best solution for the town. It does add a degree of complication as it directs flood flows in Kings Canal south into the adjacent Whirokino scheme; that approach utilises relatively significant fall (Foxton is elevated to some degree, which is why stopbanking is not required between the town the Loop) but it discharges into an area that is very low-lying. From an effects perspective (and from a Whirokino Scheme management perspective) pumping will be necessary and that will provide benefit to the Whirokino Scheme; drainage for this scheme will be more challenging with climate change, particularly as sea levels rise.
- 8.4. E2 have costed the mitigation plan at \$4.1M, including \$1M for the construction of a 2.5 cumec (cubic metre per second) pump station. The staff view is that this estimate is likely to be light – there are a range of construction related risks such as resource consenting, ground conditions, power supply and construction costs (the high level of construction activity in the Horowhenua). HDC's alliance partner Downer have been asked to review the construction cost estimate, work that has yet to be completed.
- 8.5. The mitigation plan includes two wetland areas intended to provide limited attenuation but primarily intended to provide water quality benefit. While it might constitute the 'right thing to do' from a management perspective such mitigation will inevitably be necessary when it comes to consenting the discharge from a new pump station (even though it's essentially moving the outfall location from Purcell Street to Duck Creek).

9. COMMENT

- 9.1. Noting the work associated with Foxton Futures – an HDC initiative with the current work funded by the Provincial Growth Fund – which is in essence an economic development plan for the town. This has a number of linkages to Horizons, not just in the river management area, and the revised mitigation plan, I believe, fits well with this wider framework.

10. CONSULTATION

- 10.1. As noted earlier Foxton residents will be advised of the revised mitigation plan through a newsletter and invited to make Annual Plan submissions. Similarly Whirokino Scheme ratepayers will be consulted and encouraged to make Annual Plan submissions, noting again the intent to make budget provision with the updated LTP.

11 March 2020

11. TIMELINE / NEXT STEPS

- 11.1. Detailed design work on the elements of the mitigation plan able to be advanced early / without resource consent is expected to begin shortly.

12. SIGNIFICANCE

- 12.1. This is not a significant decision according to the Council's Policy on Significance and Engagement.

Ramon Strong

GROUP MANAGER RIVER MANAGEMENT

ANNEXES

- A Foxton East Drainage System Issues and Options