KAREHANA STORMWATER CATCHMENT RECOMMENDATION

Author: **David Down, Manager, Water and Waste**
Kaiwhakahaere Wai me te Para

Authoriser: **Andrew Dalziel, General Manager Infrastructure / Deputy Chief Executive**
Pouwhakahaere Mahinga Rangatōpū / Tumuaki Tuarua

KAUPAPA

PURPOSE

The purpose of this report is to brief councillors on the recommended options for Karehana Stormwater Flooding Response.

HE WHAKAMĀRAMA

BACKGROUND

1. The catchment study for the Karehana Bay catchment was completed in August 2021. In November 2021, a recommendation for the scope and budget for the Karehana catchment was presented to Council and in response the Council agreed:
    - to commit to the development of a city-wide retreat policy targeting the most vulnerable flood prone homes in Porirua, prioritising homes where there is a threat to health or safety or frequent internal flooding.
    - to progress with the Karehana catchment concept design, detailed design, and construction of the recommended scope, to provide protection from flooding of habitable floors in the 30-year flood event at an estimated cost of $16.9m.
2. The Karehana catchment project has now completed concept design and a revised estimate provided.
3. The attached report from Wellington Water provides recommendations on a package of works to alleviate as much risk as possible within the funding envelope provided to Council during a workshop on 27 April 2023.

NGĀ MATAPAKI ME NGĀ KŌWHIRINGA

DISCUSSION AND OPTIONS

4. The original starting point for stormwater target levels of service for these projects has been:
    a. safe access to, and protection from flooding of, habitable floors in the 100-year flood event that includes the predicted impact of climate change (20% increase in rainfall intensity and future 100-year sea level rise (1m),
    b. safe access to and protection from flooding for Commercial/Businesses in the 10-year flood event.
5. However, throughout the investigation stages of these projects, the target levels of service are not always achievable.
6. The catchment is low lying, heavily built-up, is influenced by tidal flows, and has a steep, short catchment. The investigation stage of this project has been challenging.
7. The Wellington Water project director will take the Committee through a recommended package of works to achieve flood risk mitigation and seek the Committee's feedback on the next steps for the catchment.

8. The table below summarises the three options presented in the report and their respective benefits.

	Option 1: Original Recommendation	Option 2: Current Recommendation	Option 2.1: Current Recommendation Phase 1 Only	Option 3 Do nothing
Concept Design Capital Estimate	$43M - $56M	$32M - $41M	$9.6M - $12.5M	0
Estimate/Floor (Current 30yr rainfall event)	$2.4M - $3.1M	$1.7M - $2.2M	$1.6M - $2.1M	0
Habitable Floors Benefit (Current 30yr rainfall event)	~ 18	~ 19	~ 6	0
Habitable Floors Benefit (30yr rainfall event with climate change)	~ 19	~ 18	~ 1	0
Habitable Floors Benefit (100yr rainfall event - current)	~ 25	~ 19	-	0

9. Option 2.1 presents a solution that is currently funded and could proceed without additional funding required, however while Option 2.1 is within the allocated funding, the protection level is low in terms of properties benefiting from the work, and the cost is high in terms of the number of properties benefitting.

10. Wellington Water officers' recommendation to Council is to proceed with phase 1 of the current recommended scope of works (Option 2.1), within the current approved budget to the value of $9.6M - $12.5M (this work will benefit approximately 6 habitable floors in a 30yr rainfall event).

11. The attached report from Wellington Water notes an Option 3 "Do Nothing". The report notes that the ongoing operational cost of the maintaining the catchment to reduce flooding risk is currently from $70k to $100k annually. This does not include any post flood damage or clan up cost.

12. As an option for discussion, Option 3 effectively says we cannot find an affordable engineering solution at this time.

NGĀ ĀPITIHANGA

ATTACHMENTS

1. **Karehana Stormwater Flooding Recommendations**
2. **Karehana Stormwater Flooding Response**