

## Appendix 1.

Introduction to the portfolio of consultation documents

This first appendix will provide an overview of the key consultation documents drawn on to inform the Anzac Parade Community Resilience-building Strategy. Some of these reports were produced prior to the development of the Strategy, and others were specifically commissioned to reputable external organisations with speciality and expertise on various fields. In this brief introduction we will outline which are the documents included in this Appendix, what the topic was, who developed the report, and how each report was used to inform the development of the Strategy. The reports described will be the following:

Appendix 2. Massey University - Scoping Report - Reducing flood risk in a changing climate: A flood risk reduction strategy for Anzac Parade.

Appendix 3. Massey University - Progress Report 1 - Reducing flood risk in a changing climate: A flood risk reduction strategy for Anzac Parade

Appendix 4. Massey University – Progress Report 2 - Anzac Parade Resilience Building Project: Summary of community and stakeholder interviews.

Appendix 5. NIWA - Climate change impact on peak discharge characteristics of the Whanganui River at Anzac Parade An analysis of river discharge at Anzac Parade under different warming scenarios

Appendix 6. ICE GEO & CIVIL - Kowhai Park Stopbank Upgrading, Whanganui River, Geotechnical Assessment

Appendix 7. Tonkin & Taylor - Anzac Parade Stopbank Upgrade Works: Assumptions Register

Appendix 8. The Property Group Memorandum - Whanganui Flood Resilience – Anzac Parade, Whanganui – Current Market Estimates

Appendix 9. Saunders & Stevensons – Anzac Parade Housing – 100 Years above 1 M – Initial report

Appendix 10. Horizons Regional Council - Lower Whanganui River Flood Protection Investigations - Review of the June 2015 Flood and Update Design Flood Level Estimates

Appendix 11. Fitzherbert & Rowe - Legal considerations for Resiliency Project for Anzac Parade, Whanganui

Appendix 12. Civil Defence and Emergency Management Whanganui – Flood evacuation procedures

Appendix 13. Waka Kotahi New Zealand Transport Agency - State Highway 4 Anzac Parade, Whanganui

#### 1. Description of consultation documents

In the following sections we will provide a brief indication of the scope of each document and how they helped inform the Strategy.

- Appendix 2. Massey University - Scoping Report - Reducing flood risk in a changing climate: A flood risk reduction strategy for Anzac Parade.

This report was produced in April 2020 by Massey University staff to report on initial progress framing the project and establishing a social, cultural, legal, economic, and political contextual basis upon which an initial plan of action could be designed. In this report the reader will find information about the projects aim and objectives, as well as information on the conceptual pillars upon which this project was built. In addition, there are sections of this report that outline the socio-demographic and institutional situation in which this project is framed.

- Appendix 3. Massey University - Progress Report 1 - Reducing flood risk in a changing climate: A flood risk reduction strategy for Anzac Parade

This report was produced in September 2020 by Massey University staff to report on the progress made since the scoping report made available in April 2020. The focus of the document was to report back on the initial results of the pilot study which identified key considerations that would need to be addressed to be able to move forward with the Strategy. Furthermore, issues around the governance of the project are also outlined together with an overview of public engagement under COVID-19 restrictions. Finally, a section was included to present a proposed plan of action for the end of 2020 and beginning of 2021.

- Appendix 4. Massey University – Progress Report 2 - Anzac Parade Resilience Building Project: Summary of community and stakeholder interviews.

The public engagement strategy of this project relied heavily on direct engagement with residents. To enhance the direct engagement, one-on-one interviews with residents were designed and led by Massey University staff during the months of October and November of 2021. The quantitative and qualitative results of this interviewing process helped obtain a much more nuanced understanding of some of the key issues identified through the pilot study and in the initial set of community meetings held in July/August 2021. A synthesis of these findings are presented in this report.

- Appendix 5. NIWA - Climate change impact on peak discharge characteristics of the Whanganui River at Anzac Parade An analysis of river discharge at Anzac Parade under different warming scenarios

One of the key issues identified through the pilot study, community hui, and the stakeholder's interview process was that there was a need to update Horizon's climate change projections for the Whanganui area. To respond to this demand, NIWA was commissioned in early 2022 to do a high-level analysis of the impacts of climate change on peak discharge characteristics of the Whanganui River. The results of this report were used to inform future scenarios of the Strategy, and the results of this consultative document were outlined in this report.

- Appendix 6. ICE GEO & CIVIL - Kowhai Park Stopbank Upgrading, Whanganui River, Geotechnical Assessment

This report was developed by ICE GEO & Civil, a geotechnical consultancy firm in 2012 to assess the geotechnical issues associated with raising the stopbanks to 1 in 30 year period. This report incorporates the findings of a previous assessment developed by Opus and was one of the first reports where the issue of piping of seepage is mentioned. Although this report was developed previously to this project, and in fact, previous to the 2015 floods, it still provides key findings which clearly outline the geotechnical challenges of raising stopbanks in porous soils where seepage is prevalent.

- Appendix 7. Tonkin & Taylor - Anzac Parade Stopbank Upgrade Works: Assumptions Register

This very high-level report was developed by Tonkin & Taylor in April 2022 as a way of peer-reviewing the previous information developed by Horizons re stopbank improvement for this area. And more importantly, this report was commissioned to verify an initial cost estimate of stop-bank

improvements developed by Horizons staff in December 2021. This report confirmed the initial estimations and was key to determine a high-level estimation of costs to raise stopbanks to provide 1 in 50 year, 1 in 100 year, and 1 in 200 year protection.

- Appendix 8. The Property Group Memorandum - Whanganui Flood Resilience – Anzac Parade, Whanganui – Current Market Estimates

The Property Group worked in close collaboration with Massey staff, Horizons Regional Council, and Whanganui District Council to develop a GIS that integrated geographical data such flood extent, depth, rateable value, and market value, amongst other variables. As a result of this GIS, The Property Group was able to develop a detailed report submitted in April 2022 on what the current rateable value and market value of affected properties under different flood scenarios would be. The results of this work are outlined in this memorandum, and informed the assessment of a buy-out/relocation option.

- Appendix 9. Saunders & Stevensons – Anzac Parade Housing – 100 Years above 1 M – Initial report

This report was developed by Saunders & Stevensons, a reputable Whanganui local quantity surveyors firm. The report was commissioned to this firm as an effort to estimate the costs of raising severely flood-affected properties by 1 M. Their report provides details of their methodology as well as the results from their estimations.

- Appendix 10. Horizons Regional Council - Lower Whanganui River Flood Protection Investigations - Review of the June 2015 Flood and Update Design Flood Level Estimates

This report was developed by Horizons Regional Council in 2015 as a response to public concerns regarding the possibility the the floods may have had raised the river bed significantly through sedimentation. Horizons conducted a survey of the river and determined that the there had not been any significant sedimentation problems in the Lower Whanganui River, and that in fact, in some locations the depth of the river channel had increased since the last time it was surveyed in 1995. These findings were important to demystify the public belief that sedimentation was an issue in this river, and the option of dredging the river.

- Appendix 11. Fitzherbert & Rowe - Legal considerations for Resiliency Project for Anzac Parade, Whanganui

This legal opinion was produced by Fitzherbert & Rowe in February 2022 to provide legal advice on the different legal implications for the resilience building options. The report provides an overview of the use of covenants in gross and the public works act for a voluntary buy-out/relocation program. It also provides an overview of other key legal matters around tenancy agreements, legal planning implications and responsibilities, amongst other matters.

- Appendix 12. Civil Defence and Emergency Management Whanganui – Flood evacuation procedures

This brief fact sheet was developed by CDEM staff in Whanganui in December 2021 to provide further information for residents about flood evacuation procedures. This fact sheet is a key resource for future actions and support provided for early warning and evacuation procedure improvements to use as a base.

- Appendix 13. Waka Kotahi New Zealand Transport Agency - State Highway 4 Anzac Parade, Whanganui

This brief fact sheet was provided by Waka Kotahi New Zealand Transport Agency as a response to some of the key questions that residents, and other key partners of this project had about the role of Waka Kotahi in the development and implementation of resilience building actions for Highway 4.