



Carisbrook Independent Levee Review

Draft Implementation Plan

August 2024



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Acknowledgement of Country

Central Goldfields Shire Council acknowledges the ancestors and descendants of the Dja Dja Wurrung. We acknowledge that their forebears are the Traditional Owners of the area we are on and have been for many thousands of years. The Djaara have performed age old ceremonies of celebration, initiation and renewal. We acknowledge their living culture and their unique role in the life of this region.

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1. Implementation Plan

1.1 Modelling / Further technical investigations

Action No.	Report Page No.	Action	Lead	Partnership Agency	Status	Timing	Next Steps
1	13	Undertake internal flood study.	Council	NCCMA	TBC	6 + months	To be undertaken in updated Carisbrook Flood Study/Flood Management Plan funded through DTP/NCCMA.
2	24	Undertake freeboard analysis on the Western and Southern Levees and along Bucknall Street and Pyrenees Highway.	Council	NCCMA	TBC	6 + months	To be undertaken in updated Carisbrook Flood Study/Flood Management Plan funded through DTP/NCCMA (so that it includes updated climate change impacts).

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Action No.	Report Page No.	Action	Lead	Partnership Agency	Status	Timing	Next Steps
3	30, 50	Engage licensed surveyor to put every Levee Crest Design Level along with every Levee Crest as-built level along with the Design Flood Levels (sampled at every metre) onto a long section (in a spreadsheet) to locate all points / sections where there is less than the required 300mm freeboard. Engage licensed surveyor to determine if the levee bank across the racecourse needs to be extended as designed.	Council	NIL	TBC	< 3 months	TBC
4	30	Engage licensed surveyor to undertake a detailed RTK survey of the entire site (cemetery, road, levee, culverts and bluestone drain down to creek) so that water flows can be more precisely determined.	Council	NCCMA	TBC	6 + months	To be undertaken in updated Carisbrook Flood Study/Flood Management Plan funded through DTP/NCCMA.
5	31	Re-run the MIKE FLOOD Model for ALL 100 AEP storm durations to confirm (or otherwise) the maximum water level against the Western Levee Bank has been found and the Design Levee Crest Level is correct.	Council	NCCMA	TBC	6 + months	To be undertaken in updated Carisbrook Flood Study/Flood Management Plan funded through DTP/NCCMA.

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6	41	For the Critical Design Storm MIKE FLOOD Model run, run an additional scenario with up to (say) ten culverts under the Pyrenees Highway (noting that there is a house to the northwest of the culvert outlet). Include any additional culverts needed underneath the railway line also.	Council	NCCMA	TBC	6 + months	To be undertaken in updated Carisbrook Flood Study/Flood Management Plan funded through DTP/NCCMA.
7	50	Engage licensed surveyor to ensure All State Survey Marks (SSM's) used to set out the levee bank have a separate Precise Traverse Survey to assess the accuracy (or otherwise) between ALL marks.	Council	NIL	TBC	< 3 months	TBC
9	50	Engage licensed surveyor to Undertake RTK survey cross-sections, from these SSM's, across the floodplains at the Racecourse, west of Pleasant Street (at least two cross-sections) and at least three (3) cross sections west of the Western Levee south of the Pyrenees Highway and compare to the LIDAR.	Council	NIL	TBC	6 + months	To be undertaken in updated Carisbrook Flood Study/Flood Management Plan funded through DTP/NCCMA.

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Action No.	Report Page No.	Action	Lead	Partnership Agency	Status	Timing	Next Steps
10	51	Undertake revised modelling to determine if dams on the downstream side have any impact to levee function.	Council	NCCMA	TBC	6 + months	To be undertaken in updated Carisbrook Flood Study/Flood Management Plan funded through DTP/NCCMA.
11	59	Model the effect of Vegetation Clearing in the creek in the 2019 Flood Model and 2022 event to produce a Flood Map showing its effects.	Council	NCCMA	TBC	6 + months	To be undertaken in updated Carisbrook Flood Study/Flood Management Plan funded through DTP/NCCMA.
12	72	When the previously recommended remodelling is undertaken, a 100 AEP model run should be undertaken assuming a "Very Wet" Initial Loss value to determine what effect this has on flood levels at Carisbrook. The Initial Loss value used is to be determined by the Reference Group based on local knowledge of the catchment.	Council	NCCMA	TBC	6 + months	To be undertaken in updated Carisbrook Flood Study/Flood Management Plan funded through DTP/NCCMA.

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Action No.	Report Page No.	Action	Lead	Partnership Agency	Status	Timing	Next Steps
13	73	Council to obtain new LIDAR and re-run the Flood Model, including the implications of Climate. Change using the new draft ARR Guidelines.	Council	NCCMA	TBC	6 + months	To be undertaken in updated Carisbrook Flood Study/Flood Management Plan funded through DTP/NCCMA.
14	42	Review the design of the cutting through the railway line near the intersection of Pleasant Street and High Street.	Council	TBC	TBC	6 + months	To be undertaken in updated Carisbrook Flood Study/Flood Management Plan funded through DTP/NCCMA.

1.2 Infrastructure works

Action No.	Report Page No.	Action	Lead	Partnership Agency	Status	Timing	Next Steps
15	24	Upon completing freeboard analysis, investigate raising the freeboard in all areas that are below 300mm.	Council	NCCMA, DTP (where required)	TBC	6 + months	TBC
16	30	Raise the crest level of all identified locations in the report where the freeboard is less than 300mm based on survey.	Council	DTP and VicTrack (for some areas)	TBC	< 3 months	Note* DTP infrastructure may take a little longer.
17	32	Remove, plug or fit a gate valve that is to be kept always locked on pipes through chainages 450 and 1,000.	Council	NIL	TBC	< 3 months	TBC
18	42	Construct rock beaching at all locations in "low flow" channel that have a change of direction	Council	NIL	TBC	< 3 months	
19	60	Negotiate with Department of Transport and Planning (DTP) for the fitting of a lockable lifting device or replacement with sluice gate valves (Landrigan Road).	Council	DTP	TBC	< 6 months	TBC

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Action No.	Report Page No.	Action	Lead	Partnership Agency	Status	Timing	Next Steps
20	60	Investigate the construction of a permanent pump station or easily deployable temporary pump (Landrigan Road) with DTP.	Council	DTP	TBC	< 6 months	*Note permanent will take longer *temporary can be enacted in Flood emergency plan
21	65	Investigate constructing temporary levee around cemetery and then conduct updated modelling through flood study to determine actual conditions.	Council	NCCMA	TBC	< 3 months	TBC
22	67	Install (under Pyrenees Highway) Flap Valves or (preferably) Gate Valves fitted or Plugs to be placed in them during a flood event.	Council	TBC	TBC	< 3 months	*Flap valves will work based on water level *Gate valves need to shut depending on conditions (flood Management Plan)

1.3 Levee Maintenance/Management and Flood Mitigation

Action No.	Report Page No.	Action	Lead	Partnership Agency	Status	Timing	Next Steps
23	21	Review and confirm that the updated 2024 Flood Emergency Plan includes flood intelligence and other items in Appendix C1 of report is included.	Council	TBC	TBC	< 3 months	TBC
24	24, 42, 43, 47, 51	Develop immediate-term inspection and maintenance program to ensure the levee is operationally ready.	Council	TBC	TBC	< 3 months	TBC
25	24, 42, 43, 47, 51, 62	Review and finalise Levee Management Plan which details inspection and maintenance program and includes recommendations from report.	Council	TBC	TBC	< 6 months	TBC
26	24, 30, 34, 42, 47,	Update Levee Management Plan when any additional construction is undertaken.	Council	TBC	TBC	Ongoing	TBC
27	51	Confirm all culverts and/or assets where another agency is the responsible authority and determine clearing regime to ensure levee is operationally ready.	Council	TBC	TBC	< 3 months	TBC

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Action No.	Report Page No.	Action	Lead	Partnership Agency	Status	Timing	Next Steps
28	51	Based on results of modelling regarding impact of dams on downstream side, engage with landowners where required.	Council	TBC	TBC	6 + months	TBC
29		Develop immediate-term creek clearing program (for items which do not require other agency permissions)	Council	TBC	TBC	< 3 months	TBC
30		Based on modelling to determine creek clearing impact, engage with NCCMA, DEECA and Dja Dja Wurrung on developing longer term and ongoing creek clearing program.	Council	TBC	TBC	6 + months	TBC
31		Investigate funding opportunities to install Flood Cache in Carisbrook	Council	TBC		< 3 months	TBC
32	49	Delete all reference to there being a Levee at Wills Street in Levee Management Plan	Council	TBC		< 3 months	TBC
33	49	Update Asset Register to include digitised centreline of Levee and include in Council GIS	Council	TBC		< 3 months	TBC

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Action No.	Report Page No.	Action	Lead	Partnership Agency	Status	Timing	Next Steps
34	50	If RTK survey finds it is appropriate, extend levee bank across racecourse as designed.	Council	TBC		6 + months	TBC