

Downtown Carpark Site Development

Flood Barrier Management Plan

Prepared for: Precinct Properties new Zealand Limited

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Document control and review

Title: Downtown Carpark Site Development - Flood Barrier Management Plan					
Date	Version	Description	Prepared by	Reviewed by	Authorised by
7.05.2026	0.1	Draft for internal review	A.McLean	J.Rix	
8.05.2026	1	Draft for client review	A.McLean	J.Rix	
21.05.2026	2	Draft updated to address Auckland Councils feedback	A.McLean	J.Rix	P.Millar

Quality management

To ensure alignment with our Quality Management System, technical review of differing elements within this report is documented below.

Quality management

Element	Prepared by	Reviewed by
Breakdown of contents and appendices	Julian. Lough (WaterSmart)	A.McLean (T+T)

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1 Purpose and Scope

[The objective of the Flood Barrier Management Plan is to ensure that flood and coastal inundation risks are appropriately managed to protect building occupants, infrastructure, and the receiving environment from natural hazard risks over a 100-year timeframe. The plan also includes measures to be adopted in the event of flood barrier failure to manage residual risk appropriately.]

The full scope of this Flood Barrier Management Plan will be confirmed and provided at detailed design once the flood barrier solution is selected and integrated with the final architectural, civil, supplier/manufacture requirements and building services design. Until that time, this document presents a draft outline framework for flood barrier management to support the Fast Track approval application for the Downtown Carpark Redevelopment project.]

2 Flood barrier system description

[This section provides a technical overview of the flood barrier system, including its design, construction, and key components. It describes the location of the barrier, provides an overview of the hydraulic flood barrier system, including how it operates, its key components, and the role of the BMS early warning and CCTV monitoring systems.]

3 Roles and responsibilities

[Identifies the parties responsible for ownership, operation, inspection, maintenance, training, and record-keeping of the flood barrier system. It defines the specific duties assigned to each role, including decision-making authority, operational tasks, and communication responsibilities. Clear accountability structures are established to ensure that all personnel understand their obligations before, during, and after a flood event.]

4 Flood barrier activation procedure

[This section details the step-by-step process for assessing flood risk, conducting mandatory CCTV safety checks, activating the barrier, and monitoring the system during a flood event.]

5 Barrier lowering and post-flood procedure

[This section explains the process for safely lowering the barrier after floodwaters recede, inspecting the system for damage, and completing post-event reporting requirements, including a flood event log, refer to Appendix A for details.]

6 Residual risk

6.1 Flood barrier failure

[Defines the measures to be adopted in the event of flood barrier failure to manage residual risk appropriately, including but not limited to emergency response procedures, temporary mitigation measures, notification requirements, safe evacuation and access arrangements where necessary. This section shall also identify responsible parties and communication protocols.]

7 Service inspection and maintenance program

[This section outlines the required inspection, servicing, testing, and maintenance schedules necessary to ensure the barrier system remains fully operational and compliant. It details the frequency and scope of routine checks, planned maintenance tasks, and any inspection requirements.]

Procedures for recording maintenance activities, reporting defects, and managing remedial works will be outlined in this section once the final system and manufacturer requirements are confirmed. Refer to Appendix B for the inspection and maintenance log and Appendix D for the service inspection and maintenance programme].

8 Training requirements

[This section defines the training standards and competencies required for all personnel involved in the operation and maintenance of the flood barrier system. The section will also outline how training records will be maintained. A quick reference card will be developed, providing a concise summary of key activation and safety procedures for rapid use during a flood event. Refer to Appendix C.]

9 Emergency and key contacts

[Provides a list of essential contacts for emergency response, maintenance support, and escalation during flood events or system faults.]

10 Document control and review

[Defines the process for maintaining, reviewing, updating, and approving the Flood Barrier Management & Service Plan to ensure ongoing accuracy and effectiveness.

Note: The flood barrier has been designed to a level of 3.6mRL (NZVD2016). The 3.6m RL level has been adopted as an upper design level for the next 100 years, based on current understanding of rainfall and climate scenarios. It exceeds all current predictions of potential flood levels.

The Flood Barrier Management Plan shall be reviewed:

- *at intervals not exceeding 10 years, and*
- *following any flood event where the barrier is activated.*

Reviews shall assess the effectiveness of the flood barrier and associated management measures, identify any changes in external flood risk circumstances, and incorporate opportunities to revise, adapt, and improve the management plan, operational procedures, and reporting processes where necessary.

Reviews of the flood barrier management plan at regular (i.e., <10-year) intervals shall pay particular focus on residual risk management under the following scenarios:

- *Scenario 1:*
 - o *When rainfall projections within the next 20 years exceed 330mm in 24 hours for a 1% AEP event, and*
 - o *When 1% AEP coastal inundation levels exceed 2.15m RL in the next 20 years.*
- *Scenario 2:*
 - o *When 1% AEP coastal inundation levels exceed 3.3mRL in the next 20 years.*
- *Scenario 3:*
 - o *When the flood barrier has been activated to provide protection.]*

Appendix A Flood Event Log

- *Contains a template for recording all flood events, including activation times, water levels, operational performance, and any issues encountered.*

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Appendix B Inspection and maintenance log

- *Provides a record-keeping template for all inspections, maintenance activities, servicing, and corrective actions undertaken on the flood barrier system.*

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Appendix C Quick reference card

- *Includes a concise operational summary of the key activation and safety procedures for rapid reference during a flood event.*

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Appendix D Service Inspection and maintenance programme

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