Technical Specialist Memo – Healthy Waters & Flood Resilience

To:	Warwick Pascoe – Premium Project Lead Celia Wong – Senior Planner, Resource Consents Louise Barclay & Jo Hart – Senior Planner, Notices of Requirement
From:	Hillary Johnston – Healthy Waters Fast-Track Lead
Qualifications & Relevant Experience:	I hold the qualification of Bachelor of Science in Environmental Science and Geography and have 12 years of experience in regulatory stormwater assessments. I am a Certified Environmental Practitioner, a full member of the Environmental Institute of Australia and New Zealand, a member of WaterNZ, and an associate member of Engineering New Zealand. I have prepared expert evidence and technical assessments for resource consent applications, plan changes, notices of requirement for designation, and fast-track applications, and have appeared as an expert witness for Council before consent authorities and the Environment Court on multiple occasions.
Preparation in Accordance with the Code of Conduct:	I confirm that I have read the Environment Court Practice Note 2023 – Code of Conduct for Expert Witnesses (**Code**), and have complied with it in the preparation of this memorandum. I also agree to follow the Code when participating in any subsequent processes, such as expert conferencing, directed by the Panel. I confirm that the opinions I have expressed are within my area of expertise and are my own, except where I have stated that I am relying on the work or evidence of others, which I have specified.
Date:	25 May 2026

1.0 APPLICATION DESCRIPTION

Application and property details

Fast-Track project name:	North West Rapid Transit
Fast-Track application number:	FTAA-2511-1146 **Council Resource Consent References:** BUN60461580 LUC60461581 DIS60461582 (contamination) CST60461583 (structures) CST60461584 (disturbance of seabed (other)) CST60461585 (veg removal)

WAT60461586 (groundwater)
LUS60461587 (structure)
LUS60461588 (works)

Notice(s) of Requirement

NOR number	Description
NoR 1	Busway between Brigham Creek Rarawaru station and north of Westgate Te Waiarohia station (including stations, Park and Ride and all local road connections)
NoR 2	Busway between north of Westgate Te Waiarohia station and north of Royal Road Mānutewhau station (including stations, Park and Ride and all local road connections)
NoR 3	Busway between Royal Road Mānutewhau Station and Te Whau River (including all stations and local road connections)
NoR 4	Brigham Creek Rarawaru station including Park and Ride
NoR 5	Westgate Te Waiarohia station
NoR 6	Royal Road Mānutewhau station
NoR 7	Lincoln Road Wai o Pareira station
NoR 8	Te Atatū Ōrangihina station
NoR 9	Busway between Waterview interchange and west of Ivanhoe Road (including all stations and local road connections)
NoR 10	Busway between Ivanhoe Road and Ian McKinnon Drive (including all stations and local road connections)
NoR 11	Point Chevalier station
NoR 12	Western Springs station

Site address:

Generally alongside State Highway 16 between Brigham Creek and Auckland City Centre

- NWRT_Part 6_ 5_Property Schedule_Land within designation boundary and
- NWRT_Part 6_6_Property Schedule_Landadjacent to the designation boundary)

2.0 Documents Reviewed

- *Legal Submissions on Behalf of the New Zealand Transport Agency, Waka* Kotahi dated 15 December 2025 and prepared by Chapman Tripp
- *Te Ara Hauāuru, Northwest Rapid Transit, Part 2 – The Project* dated 15 December 2025 and prepared for NZ Transport Agency Waka Kotahi
- *Te Ara Hauāuru, Northwest Rapid Transit, Part 3 – Project Benefits* dated 15 December 2025 and prepared for NZ Transport Agency Waka Kotahi
- *Te Ara Hauāuru, Northwest Rapid Transit, Part 4 – Resource Management Act 1991 Approvals* dated 15 December 2025 and prepared for NZ Transport Agency Waka Kotahi
- Northwest Rapid Transport, Indicative Design Plans – General Arrangement, Sheet 1 – Sheet 10 (Rev A) dated 28 November
- *Te Ara Hauāuru, Northwest Rapid Transit, Assessment of Stormwater and Flooding Effects* dated 15 December 2025 and prepared for NZ Transport Agency Waka Kotahi

3.0 Additional Reasons for Consent Not included in AEE (Resource Consent only)

Although the majority of runoff from the project will be directed to existing and proposed NZTA stormwater network and assets before discharging to the receiving environment, there are still relatively large areas that are proposed to be directed to the public reticulated stormwater network managed by Healthy Waters & Flood Resilience (HWFR) as outlined within Table 13-1 of *Part 4 – Resource Management Act 1991 Approvals*. Particularly within the Te Wai-o-Pareira / Henderson Creek Catchment (9,900m^2), Te Auaunga / Oakley Creek Catchment (2,200m^2), Waititiko / Meola Creek Catchment (17,750m^2), and Waiateao / Motions Creek Catchment (45,200m^2).

Table 1-2 of Part 4 outlines regional resource consents sought as part of the FTAA, and includes the '*Discharge of stormwater runoff from new impervious surfaces into or onto land or water within the Project Area including busway, stations and park and ride, updates to local roads and new and upgrades of stormwater infrastructure*'

HWFR holds a Regionwide Network Discharge consent (RWNDC) which authorises the diversion into and discharge from public stormwater networks within the Auckland Region. These public stormwater networks are separate to those owned, operated, and maintained by the NZTA. The RWNDC includes provision for runoff from NZTA assets that is diverted into the HWFR public stormwater network under '*Development of new/ redevelopment of impervious area for: existing high use roads – that includes new impervious area greater than 1,000m^2, other roads that includes new impervious area greater than 5,000m^2, rail corridor projects with new impervious area greater than 1,000m^2'*.

In order for the diversion and discharge of stormwater runoff from NZTA assets that enter the HWFR public stormwater network to be authorised under the RWNDC, the Applicant would need to provide HWFR with an assessment that outlines how the '*general performance requirements*' for NZTA projects under Schedule 4 of the RWNDC have been met, or otherwise provide a Stormwater Management Plan (SMP) which demonstrates how the stormwater management proposed meets Schedule 2 of the RWNDC and is the Best Practicable Option (BPO) for the project.

4.0 Specialist Assessment (Notice(s) of Requirement and Resource Consent)

Existing Environment

Section 3 of the *Assessment of Stormwater and Flooding Effects* provides an outline of the existing environment specifically as it relates to stormwater management. In brief, the project spans 9 catchments (Figure 1 and Figure 2) and the discharge of stormwater is directed to a combination of stream and coastal receiving environments.

As outlined in Table 3-1 of the *Assessment of Stormwater and Flooding Effects,* the majority of the existing NZTA road surface areas have water quality treatment. Some catchments however do not have any existing stormwater quality treatment, Te Auaunga / Oakley Creek, Waititiko / Meola Creek, Waiateao / Motions Creek.

The Applicant's Engineer has provided a summary of existing stream channels that are or may be susceptible to erosion within Table 3-2 of the *Assessment of Stormwater and Flooding Effects.*

Stormwater modelling has been undertaken by the Applicant's Engineer and areas with existing flood risk that area adjacent to the designation are summarized within Section 3.3 of the *Assessment of Stormwater and Flooding Effects.* The existing flood risk areas noted within the Assessment range from depths of 0.01m to 5m.

Figure 1. *Assessment of Stormwater and Flooding Effects* - Figure 3-1: Western receiving environments and their sub-catchments

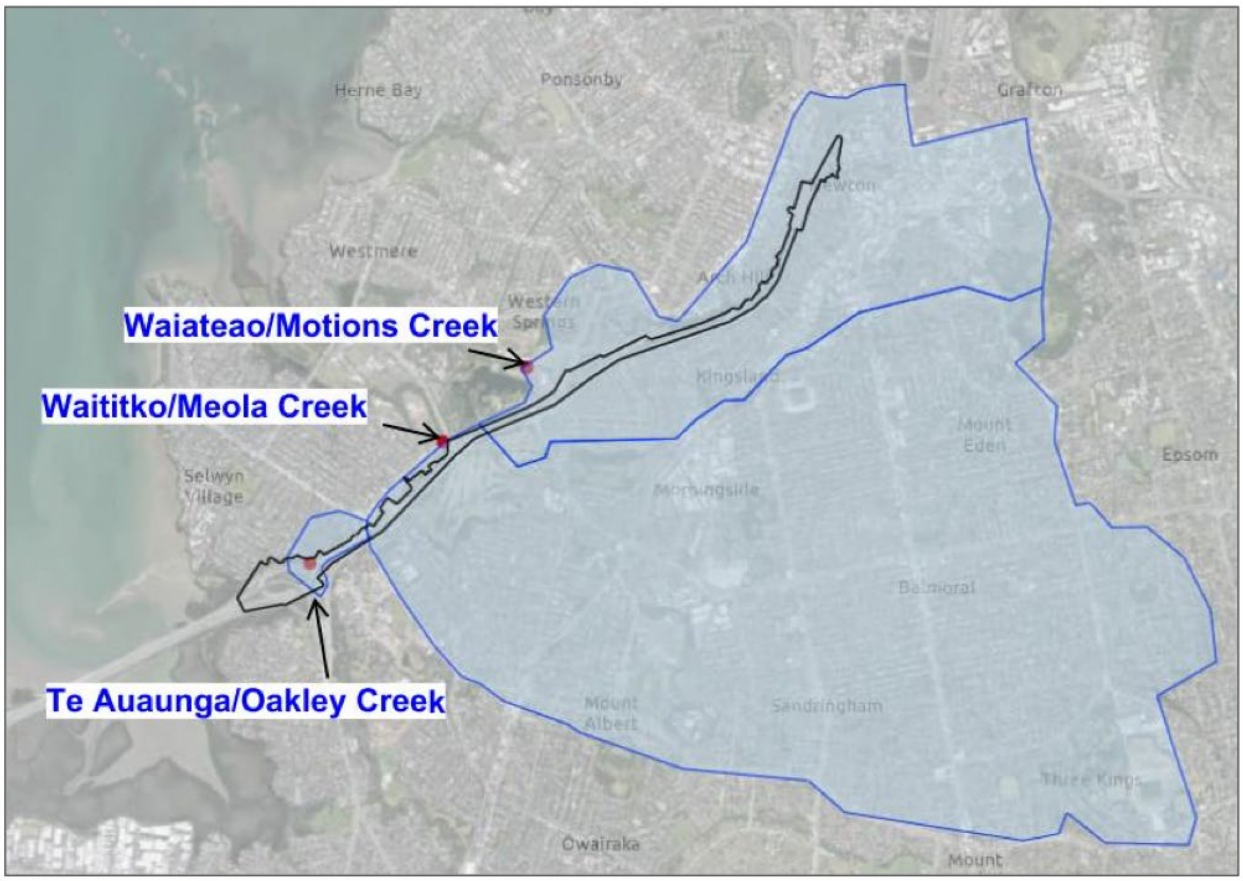

Figure 2. *Assessment of Stormwater and Flooding Effects* - Figure 3-1: Western receiving environments and their sub-catchments

Engagement with the Applicant

HWFR has been actively involved in pre-application feedback with the Applicant's Team including stormwater specific pre-application meetings on the 29 September 2025 and the 2 December 2025. HWFR have additionally met with the Applicant's Team on the 17 April 2026 to discuss matters outlined in this memo.

As part of pre-application discussions, a comments register has circulated between HWFR and the Applicant's Engineers and Planners. HWFR has continued to provide feedback via this comments register as well as email correspondence with the Applicant's Engineer.

Potential Effects and Proposed Mitigation

The majority of the items raised within the comments register have been discussed and resolved with the Applicant's Agents. HWFR do not have any substantive concerns with the Application in terms of section 67 matters. However, the following observations are provided to assist the Panel in its consideration of the proposal. These comments are intended to offer additional context, and highlight matters that may be relevant to the Panel's overall assessment, rather than to indicate any fundamental opposition to the Application.

Model tolerances

The flood modelling and associated effects assessment exclude changes in flood depths of 10 mm or less. It may assist the Panel to be aware that the modelling outputs and assessment do not identify or discuss changes below this threshold.

From a consistency and transparency perspective, HWFR generally considers it preferable that any changes in modelled flood depths are reported and assessed on their merits, even where those changes are small. As the Applicant's models are being relied upon to assess the effects of the proposed development, identifying and briefly explaining why changes occur, and whether they have any practical effect, can assist decision makers in understanding the full extent of the modelling outcomes.

This matter has been discussed with the Applicant's Agents who have clarified that the outcome of the flood assessments would not likely change if the modelled flood depth decreases and increases of less than or equal to 10 mm were included.

Danger Rating vs Hazard Classification

The *Assessment of Stormwater and Flooding Effects* applies a Danger Rating methodology consistent with that used by the Auckland Flood Recovery Office. HWFR acknowledge that the Application has adopted a measurable method and framework to assess flood related effects and does not fundamentally object to this method.

This approach differs from the flood hazard classification framework applied under Plan Change 120 (PC120), which is now used to assess flood risk and effects. The approach adopted in the Application is not aligned with the PC120 framework and introduces an additional layer of assessment criteria and complexity.

The differences in the two approaches to assess flood effects can be described as:

- Danger Rating (Flood Recovery Office methodology[1]) focuses on the risk to people within buildings and on site. It combines flood depth and velocity with building specific information (such as finished floor levels) to categorise the level of danger (e.g. low, moderate, high, extreme). This means it often requires detailed site-specific inputs including surveyed floor levels to determine how floodwaters interact with individual properties.

- PC120 Flood Hazard Classification (AUP framework) focuses on the characteristics of the flood hazard itself (e.g. depth and flow) and groups land into standardised categories such as low, medium, high, and very high hazard. These classifications are based on modelled flood depth and depth-velocity thresholds across the floodplain, rather than building specific details, and are used to inform a broader, risk-based land use planning.

It may assist the Panel to be aware that the use of the Danger Rating methodology could be more onerous to implement. In particular, if the Danger Rating approach is retained it would likely require surveyed floor levels at affected properties at each iteration of the design as redevelopment of lots is possible over the design life of the project.

This matter has been discussed with the Applicant's Agent and they have confirmed preference for use of the Danger Rating methodology.

Piping of OLFP

The *Assessment of Stormwater and Flooding Effects* indicatively proposes piping of overland flow paths (OLFP) in some locations. While HWFR understands the intent of this approach, reliance on piped solutions to manage extreme storm events is not generally aligned with best practice or Council's

[1] Auckland Council Framework for Assessing Flood Risk at the Property-level (Version 3.1, August 2025)

infrastructure codes of practice for land development. This may reduce overall network resilience and may introduce future risks that have not been fully considered.

Although modelling can represent the capture and diversion of flow paths, overland flow behaviour is often more dispersed surface flow. It was identified that it would be useful to understand the potential consequences of pipe failure and/or blockage, including both any impacts on surrounding properties and future obligations for Council. Sensitivity testing or failure assessments had not yet been provided to illustrate how the network would perform under these conditions and the resulting possible effects.

Clarification was also sought on whether the Ivanhoe Road public stormwater pipe has sufficient capacity to receive the additional flows proposed to be directed to it. It is noted that the asset will remain in NZTA ownership up to the connection with the Auckland Council network on Ivanhoe Road, and that in the event of failure, surface flows would generally revert to the existing overland flow alignment.

The Applicant's Engineer has clarified that the proposed solutions are only possible responses to the Indicative Design. They do not preclude other solutions (e.g. new culverts across the motorway or open channels) that may be considered at detailed design in a constructor lead design process.

It was agreed that HWFR and the Applicant's Engineers can work together on possible solutions at later stages of detailed design.

5.0 Section 67 Information Gap

I have identified that there are no section 67 information gaps.

6.0 Recommendation

Overall, based on the information provided, we consider there is a strong basis for supporting the Application. If for any reason the methodology for the *Assessment of Stormwater and Flooding Effects* is revised to be in alignment with PC120, support would be subject to the recommended amendments and additions to the proposed conditions of consent included below.

Any authorisations under HWFR network discharge consent will need to be resolved prior to any applications for Engineering Plan Approval.

HWFR remain available to continue points of discussion with the Applicant or assist the Panel on matters outlined within this assessment as needed.

7.0 Proposed Conditions (Resource Consent)

HWFR have reviewed the proposed regional consent conditions within Appendix A of Part 4.

Conditions relating to the management of NZTA stormwater assets only have not been commented on and have been addressed as part of the Regulatory Stormwater Specialists assessment.

8.0 Proposed Conditions (Notices of Requirement)

HWFR have reviewed the proposed designation conditions within Appendix A of Part 4 of the Application. The conditions are generally supported by HWFR subject to the following suggested amendments (in green underline and ~~strikethrough~~).

In respect of the management of flood hazards, the following conditions have been recommended to be applied to ALL NoR's:

- Condition 8

  Flood Hazard

  For the purposes of Condition 9
  (a) Danger Rating means low (green), moderate (yellow) or high (red) danger rating determined in accordance with Schedule A.
  (b) Building/s means any lawfully established residential, commercial or community building, which exists at the time the Outline Plan is submitted, and excludes sheds, garages and other ancillary buildings.
  (c) Maximum Probable Development is the maximum impervious area permitted in the current zone/s in the AUP or, 70% impervious area if the land is zoned Future Urban in the AUP.
  (d) Pre-Project Development means the Maximum Probable Development at the time the Outline Plan is submitted.
  (e) Project Development means the Pre-Project Development and the Project.

  Comment: If the method of establishing and assessing flood effects is amended to be in accordance with PC120, then the 'Danger Rating' approach referenced within this condition will subsequently need amending.

- Condition 9

  (a) The Project shall be designed so that it does not cause the following beyond the Designation:
    (i.) An increase in Danger Rating; and
    (ii.) Either:
      (A) A more than 50mm increase in flood level on land parcels with Building(s) and a Low Danger Rating; or
      (B) A more than 100mm increase in flood level on:
        i. land parcels with no Building(s) present.
        ii. land parcels with Building(s) and a Moderate or High Danger Rating~~.~~; and
    (iii.) Where the diversion and discharge of stormwater runoff is to the reticulated public stormwater network:
      (A) No new/additional habitable floor affected by flooding in 1% AEP event and no increase in frequency of existing flooding.
      (B) No significant increase in the risk to the operation and structural integrity of other infrastructure in 1% AEP event.
      (C) No increase in inundation that affects a building on a property in 10% AEP.
      (D) No loss in overland flow path capacity, unless provided by other means.

  Advice note: Where the requirements of 9(a)(iii)(A)-(D) cannot be met a Stormwater Management Plan that includes supporting information to justify an alternative as the BPO for the given project is required to be provided to Auckland Council Healthy Waters & Flood Resilience for certification.

(b) Compliance with (a) shall be demonstrated through flood modelling:
  (i.) To show the difference in the 1% Annual Exceedance Probability (AEP) flood levels for Pre-Project Development and Project Development;
  (ii.) Using 332mm for the 24 hour rainfall depth that includes a 3.8 degree Celsius increase in temperature for climate change; and
  (iii.) Undertaken by a SQP.

(c) The Requiring Authority does not need to comply with (a) if the relevant landowner agrees to an alternative approach.

(d) In the Outline Plan, the Requiring Authority shall:
  (i.) demonstrate how (a) will be complied with by reference to flood modelling undertaken in accordance with (b); or
  (ii.) provide confirmation of any written agreement secured to reflect landowner agreement pursuant to (c) above.

Comment: If the method of establishing and assessing flood effects is amended to be in accordance with PC120, then the 'Danger Rating' approach referenced within this condition will subsequently need amending.

HWFR RWNDC has performance requirements for NZTA projects in relation to the management of flood hazards. For areas where the RWNDC may be relied on to authorise the diversion and discharge of stormwater runoff, compliance with Condition 9(a)(i) and (ii) would not necessarily comply the requirements of HWFR RWNDC.

Additions are proposed as 9(a)(iii) to ensure clarity and consistency between the requirements of the RWNDC and the NoR.