

Technical Specialist Memo – Stormwater and ITA specialist

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| To: | Warwick Pascoe – Premium Project Lead Celia Wong – Senior Planner, Resource Consents Louise Barclay & Jo Hart – Senior Planner, Notices of Requirement |
| From: | Martin Meyer |
| Qualifications & Relevant Experience: | I hold the qualifications of: Bachelor of Science in Environmental Science and Physical Geography, Post Graduate Diploma in Science & Technology and have 9 years of experience within three waters. I have prepared expert evidence and technical assessments for resource consent applications and fast-track applications. |
| 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: | 18/05/2026 |

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)
DIS60466273 (stormwater)
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_Land adjacent to the designation boundary)

2.0 Documents Reviewed

- *Part 2 – The Project* dated 15 December 2025 and prepared for NZ Transport Agency Waka Kotahi
- *Part 3 – Project Benefits* dated 15 December 2025 and prepared for NZ Transport Agency Waka Kotahi
- *Part 4 – Resource Management Act 1991 Approvals* dated 15 December 2025 and prepared for NZ Transport Agency Waka Kotahi
- *Assessment of Stormwater and Flooding Effects* dated 15 December 2025 and prepared for NZ Transport Agency Waka Kotahi
- Northwest Rapid Transport, Indicative Design Plans – General Arrangement, dated 28 November
- Assessment of Ecological Effects, 15 December 2025 and prepared for NZ Transport Agency Waka Kotahi

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

- E33.4.1(A12) – discharge of contaminants permit

Laydown areas are considered (unlisted) industrial or trade activity areas. Where discharge of contaminants from these areas exceeds less than minor effects on the receiving environment without a treatment device (failure to meet PA standard E33.6.1.2.2) this will trigger the need for a consent under E33.4.1(A12).

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

AUP(OP)

E8 Stormwater Diversion & Discharge E8.4.1(A5/A10)

25 'treatment area' locations were identified, 10 areas (TA 13, TA 17 - TA 25) are proposed to discharge via the existing Auckland Council public stormwater network under the Regional Stormwater Network Discharge Consent. Please refer to the Healthy Waters and Developer Engineer memo in regard to these areas.

The remaining 15 areas of new impervious areas consist of utilising new NZTA culverts (TA 12, TA 14), and existing NZTA culverts (TA 1, TA 6 – TA 9), new outfalls discharging to the receiving environment (streams TA 2, TA 3, CMA TA 11) and existing outfalls discharging to the receiving environment (CMA TA 10), and existing wetland outfalls (TA 4, TA 5), existing NZTA outfalls (TA 15, TA 16).

TA1 is the largest impervious area, consisting of 73,000m². This area has additionally been identified as requiring hydrology mitigation due to a modelled velocity increase of 6.5% during a 95th percentile event, with moderate susceptibility to erosion without mitigation.

Assessments on stream erosion were carried out on treatment areas TA 1 and TA 4 to TA 9. Others were excluded due to size and/or inclusion or exclusion from the SMAF zone based on the applicants inclusion/exclusion criteria based on various rules from E8 and E10 (described in Appendix A of the Stormwater and Flooding Effects report). The rules for exclusion and inclusion appear based on the sub-rules for individual activities occurring in isolation prior to their discharge, and whether the rules would trigger the need for hydrological mitigation. While I understand this method in terms of hydrological mitigation requirements, stream erosion assessment is also required by the general standard E8.6.1(2). It is unclear from the assessment provided that no stream erosion is occurring in other areas downstream of private discharges. It would be recommended that a spatial assessment showing erosion risk for all areas downstream from the highest discharge point is undertaken to demonstrate that general standard E8.6.1(2) is met being that 'The diversion and discharge must not cause or increase scouring or erosion at the point of discharge or downstream.' given the substantial and potentially cumulative effects within

particular catchments. EG Tōtara Creek has 5 area, TA 1 to TA 5, but TA 2, 3 were excluded from assessment on stream erosion as if seen as isolated activities would not trigger the need for hydrological mitigation explicitly. This does not confirm that E8.6.1(2) has been met for these areas. The substantial increases in impervious area within urban stream environments may exacerbate erosive conditions and should be assessed to demonstrate the cumulative effects on the stream will not exacerbate erosion.

Various stormwater quality treatment is proposed through the busway and at stations. The stormwater report has identified pollutant loading using a contaminant load model developed previously by Auckland Regional Council and documented in Technical Report No.2010/004 (ARC, 2010A). This also utilised existing treatment devices within stormwater catchments. Contaminants of concern (Zinc, Copper and Total Suspended Solids – TSS) were predicted for a fleet of electric buses. Based on this modelling it was found low, negligible or positive effects on contaminants even where no treatment device is used. An augier condition has been provided whereby a minimum 75% total suspended solids removal and the requirement to treat all impervious surfaces is specified.

A proposed condition requiring additional hydrological mitigation in the form of attenuation devices where the Project is predicted to increase stream flow velocities by more than 5% in a 95 percentile storm event has been provided (Condition No. 9.)

The stormwater report identified that below 5% increase in velocity within streams the potential effects on erosion are low or negligible (less than 2% increase in velocity). I would recommend that this condition and the effect of up to 5% increase in velocities of the receiving streams is further assessed by an expert on stream erosion and downstream effects before acceptance, this is outside my expertise, so assessment from a geomorphologist or other expert is recommended to assess these effects on the environment. Streams may react in a variety of ways to increased discharge velocities and volumes especially where large land use changes have and will occur.

E9 High Contaminant Generating Carparks and High-use Roads

The busway is proposed to be separated from existing high-use roads and is not considered to trigger the need for treatment under E9. While not formally described as an 'ancillary area' the vehicle loading will be substantially different to the state highway, and will be often separated from the highway directly.

The applicant has identified a high contaminant generating carpark being a park and ride at Brigham Creek. This requires treatment to meet the requirements of E9.4.1(A6). A constructed stormwater wetland is proposed to provide treatment of these areas, this is considered adequate where the wetland is built to GD01 guidelines.

An augier condition has been provided whereby a minimum 75% total suspended solids removal and the requirement to treat all impervious surfaces is specified.

E10 Stormwater Management Areas (Flow 1 and Flow 2)

TA1, TA4 to TA9 are located within SMAF zones. Hydrology mitigation is required under E10 for these areas. The applicant has assessed that this can be provided mostly through new or upgraded wetlands. However TA 8 within the Mānutewhau Stream is identified as constrained for space in providing a storage device.

Due to this constraint the activity is considered as activity E10.4.1(A10) as it contains areas that won't comply with Standard E10.6.1 and Standard E10.6.4.2.

Modelling for TA 8 identified an increase of discharge from 332.6L/s to 344.57L/s. The approximate impervious area to be added being 2,200m². The stream erosion assessment for the Mānutewhau noted some erosion in the stream. Refer to the Memo from the Development Engineer on this area, but I would further recommend this area be assessed within the previous mentioned stream erosion expert assessment. Where it is identified to agree with the applicants assessment that TA 8 is low risk for erosion then this is acceptable as the only SMAF area unable to meet hydrological mitigation requirements.

E33 Industrial or Trade Activities

Construction laydown spaces are proposed as part of the project. Given the (requested) lapse period of 25 years, and no specified timeframes or locations of laydown areas it is expected that some of these areas may exist in excess of 6 months.

Where a laydown area is not a temporary activity as defined in the AUP, it is considered to be an 'industrial or trade activity' area, there is a potential for a discharge of contaminants from these areas without appropriate management of stockpiles, storage of vehicles/machinery and other activities associated with these areas. The provisions under AUP(OP) provide for determination that these areas are managed appropriately throughout their use to minimise the risks to the receiving environment, provide treatment where necessary and prevent high-risk activities such as machinery/vehicle servicing.

It is recommended that information on proposed laydown areas is provided, including activities to take place, start and end dates where able or estimated length of activity, and the necessary evaluation of these areas per the requirements of E33.

National Environmental Standards for Freshwater

The project is within 100m of multiple natural inland wetlands. Hydrological function change or water level changes to these wetlands is a discretionary activity under the NES-F 45(4) and 45(5) for the purposes of taking, damming, use, diversion or discharge of water within or within 100m setback from a natural inland wetland.

The assessment of ecological effects and RMA approvals documents identify 2 wetlands within the project area, and states that wetlands were avoided by indicative design. It specifies many other wetlands were found through a desktop analysis within 100m of the project areas, however no hydrological assessment was provided. The applicant states they do not expect to trigger NES-F 45(4) and 45(5), however further information on the wetlands within the bounds of these clauses should be provided along with their indicative catchments to show that they are not linked hydrologically or that the effects will not alter the hydrological function/water level of these wetlands from the proposed works.

Where they are not linked, or hydrologically connected, it can be confirmed that the NES-F will not be triggered under the hydrological clauses.

5.0 Section 67 Information Gap

At the time of writing this Memo I have identified the following information gaps:

Description of Missing Information

1. *Medium Risk – Assessment against E33*
2. *Medium Risk – Hydrological Effects on Wetlands within 100m of Project Area*
3. *Medium Risk - Geomorphic Assessment (outside my expertise)*

Why is this Information Essential?

1. *Wetlands within 100m of the project area may be affected hydrologically by the changes in impervious area and diversions of stormwater. The applicant should provide confirmation of and comment on the effects of the proposal on wetlands within the NES-F trigger to confirm wetlands hydrological function will not be affected.*
2. *Laydown areas operating for long periods are considered to have a risk for the discharge of contaminants. The applicant should assess their proposed activities against E33 and provide an Environmental Management Plan and detail the activities/management and/or treatment proposed for laydown areas that will exist in excess of 6-12 months. This provides assurance that the activity and risks are managed per the policies E33.1 (1) to (3).*
3. *The applicant has requested a condition to allow up to 5% increase in stream velocities. Streams in urbanised catchments are often already in an erosive or susceptible condition due to historic*

urbanisation pressures. It is unclear that proposed increases will not create effects that are less than minor or low on these streams. The applicant has stated 0-2% increase is negligible on erosion risk, and 2-5% is low. A geomorphic report of the streams could be undertaken to assess and confirm the applicants risk criteria for changes based on the increased velocities and flows that are suggested by the indicative design. The applicant would then be able to better target treatment of the most susceptible streams if necessary.

| Information gap | Nature of deficiency | Decision-making impact | Risk / uncertainty created |
|---|--|--|--|
| 1. Assessment against E33 | - No assessment of laydown areas which are considered industrial or trade activity areas, for aggregate, machinery, equipment and potential areas used for various associated activities may present a risk for the discharge of contaminants. | The need for a consent for the discharge of contaminants may be required where the activity does not meet E33.6.1.2 and the provision of an environmental management plan. | Medium Risk – discharge of contaminants to receiving environment |
| 2. Hydrological Effects on Wetlands within 100m of Proposal | - Wetlands within 100m of the project area have been identified, but assessment on the hydrological effects on these wetlands were not provided. | Determine whether triggers for NES-F 45(4) and 45(5) for restricted discretionary activity occur. | Medium Risk – loss of wetland habitat |
| 3. Geomorphic Assessment | - Detailed assessment of the effects of additional flows on the streams within the proposal area to determine erosion risks from the changes in flow. | Cannot determine if the proposal meets the assessment criteria required E8.6.1(2) or if the activity meets the requirements of E10.8.2(1)(b). | Medium Risk - Potential for ongoing erosion of streams once impervious areas are established |

6.0 Recommendation

I am in support of the application. Subject to the information gaps being filled and assurance to the risks raised and the proposed conditions.

7.0 Proposed Conditions (Resource Consent)

Stormwater Permit Condition 8.

I agree with this condition

Stormwater Permit Condition 9.

Note Gap 3 raised in 5.0 above. Confirmation from a geomorphologist that stream erosion at point of discharge or downstream will not be exacerbated with a 5% increase in stream velocities.

Stormwater Permit Condition 10.

I agree with this condition

Additional Conditions

The use of additional conditions for the construction of private stormwater management systems, including the following:

X1 Stormwater management works

The following stormwater management works must be constructed for the catchment areas and design requirements. The works must be completed prior to construction of further impervious surfaces.

| Works to be undertaken | Catchment area: impervious (total) | Design requirement(s) |
|----------------------------|------------------------------------|---|
| <i>Example New Wetland</i> | <i>Example Catchment Area</i> | <ul style="list-style-type: none"> In accordance with Guideline Document 2017/001 Version 1 (GD01) |
| <i>Example Outfall</i> | <i>Example Catchment Area</i> | <ul style="list-style-type: none"> In accordance with Guideline Document 2017/001 Version 1 (GD01) Hydrology Mitigation requirements in accordance with E10.6.3.1.1 |

X2 Operation and Maintenance Plan

An Operation and Maintenance Plan must be provided to council and certified by council **5 working days** prior to the post-construction meeting required by this consent. The stormwater management system must be managed in accordance with the final Operation and Maintenance Plan. The plan shall include:

- details of who will hold responsibility for long-term maintenance of the stormwater management system and the organisational structure which will support this process.
- a programme for regular maintenance and inspection of the stormwater management system.
- a programme for the collection and disposal of debris and sediment collected by the stormwater management devices or practices.
- a programme for post storm inspection and maintenance.
- a programme for inspection and maintenance of the outfall; and
- general inspection checklists for all aspects of the stormwater management system, including visual checks.

X3 Any amendments or alterations to the operation and maintenance plan must be submitted to Council for certification, in writing **prior to implementation**.

8.0 Proposed Conditions (Notices of Requirement)

NOR aspects have been covered by Healthy Waters memo.