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22 December 2022

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Tēnā tātou,

Ōtaki to north of Levin Highway Project- – Response to request for additional information pursuant to section 92 of the Resource Management Act 1991

This letter provides a response to the request for further information pursuant to section 92 of the Resource Management Act 1991 ("RMA") received on [add date] in relation to the notices of requirement for designations ("NoR")[1] to authorise the Ōtaki to north of Levin Highway Project ("Ō2NL Project" or "the Project")

The information requested and the Waka Kotahi NZ Transport Agency ("Waka Kotahi") response is set out in the following table or attached.

No.	Jurisdiction	Information requested	Waka Kotahi response
Traffic and Transport			
97.	HDC	*Section 18.6 of the AEE notes that the works to relocate and improve the Tararua Road and existing State Highway 1 intersection are partly within the existing SH1 designation (Designation D2, 'State Highway 1). Paragraph 21 of the Final Technical Assessment A – Transport confirms that the project includes improvements at this location, however, there is no detail –[provided in the geometric design of the*	A drawing is provided in Volume III Plan Set: General Arrangement drawing 310203848-01-100-C1017.

[1] Horowhenua District Council – 504/2022/22 & Kapiti Coast District Council - RM220254

No.	Jurisdiction	Information requested	Waka Kotahi response
		proposed intersection/level crossing upgrade works at this location. *Could the Applicant please provide details of the geometric design for the (existing) SH1 / Tararua Road intersection?*	
98.	HDC	*At paragraph 3.3.3, Final Technical Assessment A – Transport, reference is made to the East West Arterial (EWA) which is acknowledged to provide additional capacity in the transport network.* *Could the Applicant please confirm that the EWA could occur without Ō2NL? What are the traffic and transportation effects that would flow from the EWA not being established once O2NL is constructed?*	Waka Kotahi understands that the East West Arterial (EWA) is a transport connection that is proposed as part of the Tara-Ika development and so it would be advanced as per the requirements of that development. The Ō2NL Project does not preclude that transport connection from being constructed. An assessment has not been made of the transport network with Ō2NL and without EWA as it has been assumed that EWA is needed to support the level of growth forecast in Tara-Ika.
99.	HDC	*The Final Technical Assessment A – Transport (paragraph 46) indicates that the East West Arterial (EWA) connecting the central part of Tara-Ika to Arapaepae Road has only been assumed to be in place with Ō2NL and is not part of the Do-Minimum, however this appears inconsistent with the demand assumptions (at paragraph 196, the Transport Assessment states that side road delays could restrict the amount of development that could occur within Tara-Ika).* *Additionally, the Final Technical Assessment A – Transport (paragraph 164) describes infrastructure upgrades assumed to take place in the Do-Minimum and specifically states (paragraph 164g) that this*	The traffic modelling shows that the East West Arterial is needed to address the transport effects associated with the full build out of Tara-Ika (by 2039). Waka Kotahi had understood that the HDC intended to lodge RMA planning applications for the EWA at a similar time to the planned lodgement of RMA applications and notices of requirement for the Ō2NL Project. Therefore, as the EWA would be subject to its own RMA processes, it was necessary to be able to identify the effects of the combination of the EWA and the Ō2NL Project, with the effects of the EWA to be addressed through a separate application. The Do Minimum network was agreed with HDC (and KCDC) and this excluded the East West Arterial (EWA).

No.	Jurisdiction	Information requested	Waka Kotahi response
		includes local road improvements associated with Tara-Ika. *Could the Applicant please explain why the East West Arterial (EWA) connecting the central part of Tara-Ika to Arapaepae Road has only been assumed to be in place with Ō2NL and is not part of the Do-Minimum?*	
100.	HDC	*Could the Applicant please confirm that the Tara-Ika development can occur irrespective of or prior to Ō2NL, albeit with potential restrictions upon development if assessments identify capacity / safety issues on the road network?*	The Ō2NL Project notices of requirement and applications for resource consent do not prevent other RMA applications being lodged, nor does it prevent Tara-Ika development from occurring where it is located outside of the land subject to the proposed designation for the Ō2NL Project. Where the Tara-Ika development is proposed to occur on the land subject to the notice of requirement, Waka Kotahi will work with the developer to understand how and if the developer's requirements can be met in a manner that does not prevent or hinder the Ō2NL Project (pursuant to section 176(1)(c) of the RMA). The potential road network capacity / safety issues associated with the development of Tara-Ika would be a matter for consideration through RMA consent process/es for that development.
101.	HDC	*The Final Technical Assessment A – Transport (paragraph 113) provides a breakdown of trip patterns for vehicle trips heading north along SH1 from a point to the north of Ōtaki. This is based on TomTom GPS data.* *Could the Applicant please provide sampling rates for the TomTom travel time data, and a comparison provided between the TomTom data and the modelled travel times (for 2018)?*	Average travel times are based on weekday sample sizes ranging from 700-1,000 in the AM peak, 1,300-6,600 in the interpeak and 400-1,300 in the PM peak for the three key journeys (Ōtaki to SH1 north of Levin, Ōtaki to central Levin and Ōtaki to SH57 north of Levin). 2018 Modelled and 2018 TomTom travel times are similar, with differences of between +1 % (0.2min) for Ōtaki to north of Levin, +4% (0.6min) for Ōtaki to Central Levin and -7% (1.6min) for Ōtaki to SH57 north of Levin.
102.	HDC	*Could the Applicant also please provide further information and detail with regard to existing patterns*	Using traffic model outputs (which consider trips between model zones, not trips within zones), two thirds of trips have an origin or destination in the area encompassing Ōtaki and Levin (17% of trips stay within this area and

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		of travel through and within the area?	49% have one trip end in this area). One third of trips travel all the way through this (Ōtaki and Levin) area.
103.	HDC	*The Final Technical Assessment A – Transport (paragraphs 188 – 193) suggests that travel times will increase significantly in the Do-Minimum scenario. Table A.7 compares observed TomTom travel time data for 2018 with modelled data for 2039. Such a comparison may introduce differences which are attributable solely to the reliability of the observations (sampling rates etc) and/or the reliability of the modelling.* *Could the Applicant please provided information with regard to the TomTom sampling rates, or the comparison should be between modelled data for 2018 and that for 2039?*	See response to request 101 that includes a comparison of TomTom GPS data and modelled data.
104.	HDC	*Could the Applicant please provide information in relation to the overall changes in travel distances and CO_2 emissions as a result of Ō2NL?*	Climate change considerations are discussed in section 3.5 of the Supporting Information and Assessment of Effects on the Environment' Report (Volume II). For completeness, Waka Kotahi notes that the effects of greenhouse gas emissions associated with the O2NL Project (including 'enabled emissions') is not a relevant consideration in respect of decisions on the notices of requirement for the Ō2NL Project. In particular, section 104E of the RMA, while now repealed, continues to apply to the Ō2NL Project because the notices of requirement were given before 30 November 2022.
105.	HDC	*The Final Technical Assessment A – Transport (paragraph 219) describes walking and cycling facilities to be provided associated with Ō2NL but the only references to Tara-Ika are to connections at Queen Street East and Tararua Road, and there is no reference to the*	The Ō2NL Project has assumed that these additional east west (vehicular, walking and cycling) connections would be provided as part of the development of Tara-Ika. These east west connections are not currently in place and they are not required to be constructed or in place by the Ō2NL Project. The Ō2NL Project does not preclude the development of these additional east-west connections between Tara-Ika and urban Levin.

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		pedestrian/cycle overbridges shown by the Tara-Ika Masterplan. Furthermore, the walking and cycling benefits of the SUP (Transport Assessment paragraphs 263 – 266) make no mention of the connectivity to Tara-Ika and the proposed E-W connections across Ō2NL. *Could the Applicant please comment on the treatment of Tara-Ika and the provision of east-west connectivity (vehicular, walking, cycling) both with and without/prior to Ō2NL?*	
106.	HDC	*Could the Applicant please provide further information and detail with regard to existing patterns of travel through and within this area?*	See the response to request 102 above.
107.	HDC	*The modelling indicates that movements between the south and the Levin CBD will route via Tararua Road (rather than exit at the Taylors Road intersection and travel by means of the existing SH1).* *Could the Applicant please clarify that the route which traffic is expected to take between the Levin central area and Ōtaki / South will be via Tararua Road and that this will be the new point of entry to Levin from the south?*	Yes, the preferred route from Levin CBD to Ōtaki would be via Tararua Road and the Ō2NL Project.
108.	HDC	*It is understood that the baseline growth assumption relates to the adoption of the 75th percentile growth scenario. The Final Technical Assessment A – Transport states (paragraph 44) that sensitivity testing*	The sensitivity testing was undertaken to determine if the Ō2NL Project would perform adequately after a sustained period of very high growth (as envisaged by the 95th percentile growth scenario). The figure below (also included at full size at Attachment 1) provides projected level of service at 2039 using the 95th percentile growth scenario. This can be compared with Figure A.19 in Technical Assessment A. It shows

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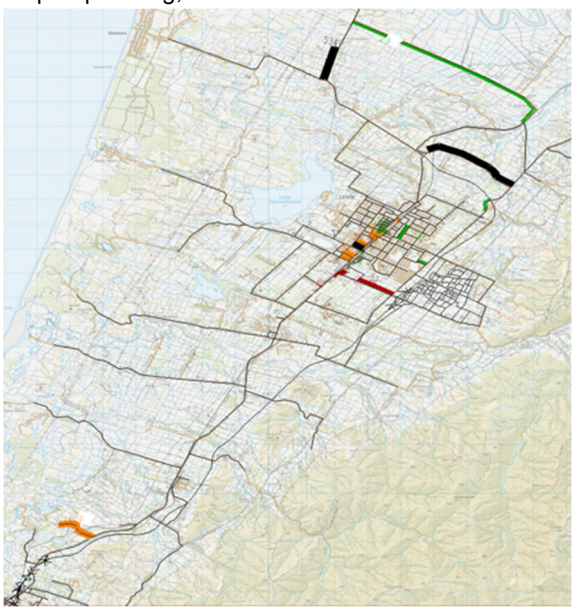
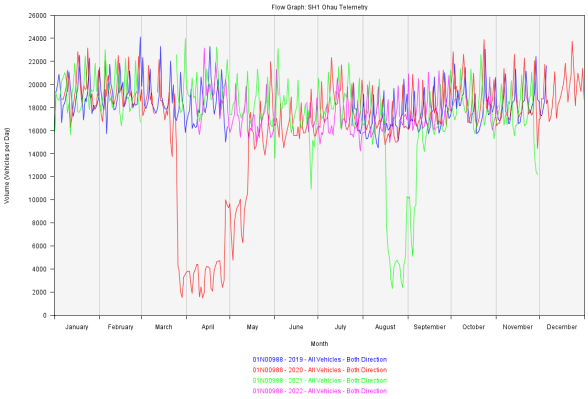
		has been undertaken for a 95th percentile growth scenario, but no results have been presented. *Could the Applicant please provide information in relation the 95th percentile growth sensitivity tests?*	that there are no significant delays on, or on approach to the new highway, but there are other parts of the transport network near the new highway that may need further consideration, as part of business-as-usual transport planning, should this situation eventuate. 
109.	HDC	*The Final Technical Assessment A – Transport (paragraph 112) suggests that current volumes have recovered close to pre-Covid (2018) levels and therefore the 'existing' volumes remain relevant.* *Could the Applicant please provide a more detailed analysis of changes in traffic volumes through this period and also comment on the effects of Covid upon forecast traffic volumes for 2039, and whether these will be lower as the result of losing two years of growth?*	The graphs included below (and provided as Attachment 2) provide actual count data at the two telemetry sites at SH1 Ohau and SH57 Shannon for volume trends between 2019 and 2022. The graphs indicate that the impacts of COVID-19 at both locations is related to the lockdown period durations. Analysis of this TMS data, shows that excluding the lockdown periods, volumes in 2021 were higher than 2019 (+1% at SH1 Ohau and +6% at Shannon). The data available indicates that there may have been some short-term impacts but does not indicate that it is necessary to adjust the traffic growth projections that have been used. 

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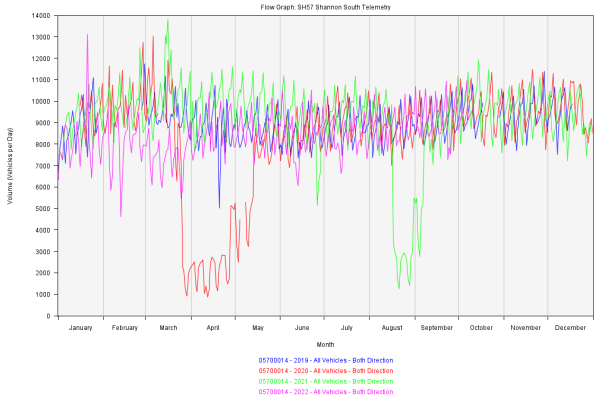
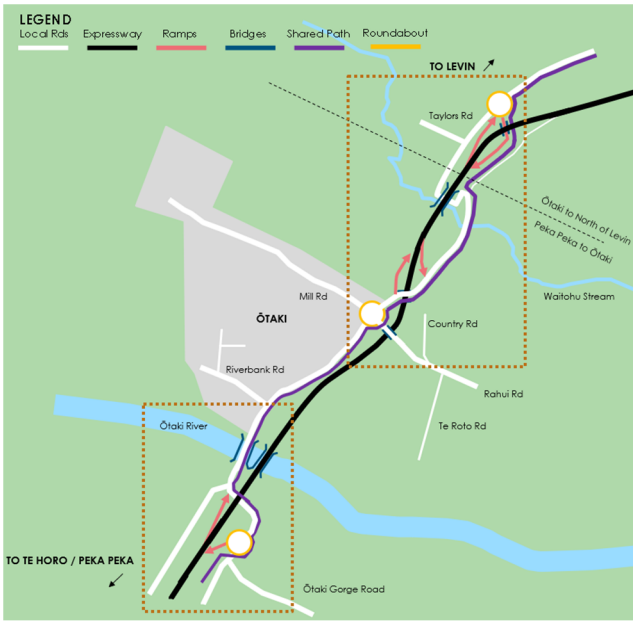
			
110.	HDC	*The Final Technical Assessment A – Transport (paragraph 256) indicates that modelling of conditions at the (old) SH1/Tararua Road intersection using SIDRA rather than SATURN, changed the forecast level of service from E to B.* *Could the Applicant please comment upon the reliability of intersection modelling in SATURN, given the use of SIDRA to identify a lower level of service for the (existing) SH1 / Tararua Road intersection?*	The SATURN modelling was undertaken on a worst-case intersection form with fewer lanes. More detailed assessment and subsequent design updates added a lane to respond to the poor performance of the intersection (as signalled by a Level of Service E) identified by SATURN and hence SIDRA modelling of updated layout shows improvement to a Level of Service B. Therefore, there is no issue in reliability of using SATURN, as it modelled a different layout.
111.	HDC	*Could the Applicant also please provide more information in relation to what this means for the reliability of the SATURN-based delay forecasts elsewhere and for queue lengths and delays at this critical intersection?*	See the response to request 110 above. There have been no other changes in layouts between SATURN and SIDRA proposed. Therefore no reliability issues in respect of the use of the SATURN model arise.
112.	HDC	*The Final Technical Assessment A – Transport (paragraphs 27 and 268) claims that 'investment in more frequent and attractive public transport options for surrounding communities' may arise from the 'old highway' being quieter.*	This was identified as an opportunity only. Current public transport services are subject to the same delays as general traffic which are outlined through the Technical Assessment A (refer to pages 25 – 54).

No.	Jurisdiction	Information requested	Waka Kotahi response
		Could the Applicant please provide evidence that existing public transport services are constrained by travel conditions within the existing road network?	
113.	HDC	*The Final Technical Assessment A – Transport (paragraph 32) suggests that a detailed construction methodology will be provided with a Construction Traffic Management Plan (CTMP). Some further information is provided at paragraphs 282 – 300. While it is acknowledged that construction logistics are necessarily coarse at this stage of project development, it is expected that further information should be provided in the form of a draft CTMP as part of the application, to provide a reasonable assurance that effects during the construction phase are able to be managed.* *Could the Applicant please provide a draft CTMP as part of the application material?*	The actual and potential effects of construction traffic are described in Technical Assessment A (Transport) (provided in Volume IV) and the approach to managing those effects is provided in Part H of the Supporting Information and Assessment of Effects on the Environment Report (Volume II). This Report specifically refers to proposed designation conditions provided as Appendix Five to Volume II. The proposed designation conditions (DCT1) require the preparation of a Construction Traffic Management Plan (CTMP) and the objective and the content of the plan are specified in Schedule 2 (to the conditions). The stated objective of the CTMP is to manage property access, construction traffic and safety for all road users associated with the construction of the Project. Any proposed work on local roads, including the creation of access for construction traffic, will be subject to separate approval processes with the relevant road controlling authority (either Horowhenua District Council or Kāpiti Coast District Council). The CTMP will be prepared and provided to Councils as part of the section176A (RMA) outline plan process, and as described in proposed Condition DGA6.
114.	KCDC	*Could the Applicant please explain why the decision has been made to provide one option for Taylors Road (southern interchange) when discussions and communication with KCDC have not been closed out?*	Details of options considered and assessed (using multi-criteria analysis) and then how a preferred option was selected is described in Part E of the Supporting Information and Assessment of Effects on the Environment Report (Volume II), which includes specific additional consideration described in section 28.1.
115.	KCDC	*Could the Applicant please provide more information on the problem that the Taylors Road interchange is trying to solve, the alternatives assessment undertaken for the Taylors Road location*	Please refer to the response to request 114 and also to Attachment 3 that provides more information about the half interchange proposed including how Taylors Road is anticipated to perform.

No.	Jurisdiction	Information requested	Waka Kotahi response
		and the basis for decision making?	
116.	KCDC	*Could the Applicant please provide evidence of how the community and stakeholders were engaged with in reaching the proposal for Taylor Road access that has been presented in General Arrangement Plan – Indicative Sheet 18?*	Details of consultation and engagement activities undertaken is provided in Part F of the Supporting Information and Assessment of Effects on the Environment Report (Volume II). Specifically, the design of the southern interchange and the proposed arrangements at Taylors Road (as shown on the drawings provided in Volume III) were part of the consultation and engagement undertaken in April – May 2022 on the preliminary concept design for the Project as described in Section 35.3.2. Information boards used at these events included: Ōtaki to north of Levin Engagement display boards part 1: Connections (nzta.govt.nz). A newsletter was also distributed to the local community that depicts the current design: Ōtaki to north of Levin update - April 2022 (nzta.govt.nz). No specific written feedback was provided from the community in respect of the proposed design at Taylors Road. The community members who discussed the design with the Project Team, at open days and community events, supported the increased connectivity that the southern interchange would provide.
117.	KCDC	*Could the Applicant please comment on the safety, operations, and maintenance requirements for the Taylors Road linkage as the alternative arterial to the proposed Expressway?*	The Taylors Road realignment (which was constructed as part of the Peka Peka to Ōtaki Project) would only be used as an alternative to the state highway in very rare circumstances when the approximately 600m stretch of new highway between the end of the north facing ramps north of Ōtaki and the start of the south facing ramps at Taylors Road needs to be closed. The chances of an incident that closes one direction on this short stretch are very small, and the chances of a two-way closure are smaller still. In the event that this section is closed then a temporary diversion onto Taylors Road and through Ōtaki itself may be required (if two lanes are closed on the state highway then the remaining two lanes could be used to provide 2-way movement). The operation (including safety) of the temporary diversion would, as per normal state highway operations, be managed by traffic control. Due to the expected infrequent nature of needing such a closure it is unlikely that maintenance requirements would be affected. Nevertheless, these matters can be resolved at the time of occurrence.
118.	KCDC	*There is no Transport System Plan displaying the transport linkages and integration (Local Traffic, Expressway Traffic, PT, and Active Modes) with the*	The diagram below has been prepared displaying transport linkages and integration with the PP2Ō Project (now open) as requested (and is provided at full size as Attachment 4):

No.	Jurisdiction	Information requested	Waka Kotahi response
		PP2Ō project and Ōtaki community and no detailed traffic / active mode volumes for the roads / links around Ōtaki to allow for consideration of the assessment of effects (Transport, Economics and Community/Social). *Could the Applicant provide a Transport System Plan to demonstrate the integration and outcomes of the Ō2NL and PP2Ō projects?*	 The table below provides annual average daily traffic flows through this part of the network at 2019, and at 2039 with the Ō2NL Project and without the Project (Do Min): **Location** / **Current (2019)** / **2039 Do Min** / **2039 with Ō2NL** SH1 south of Taylors Road: 16,700 / 23,900 / 27,400 Current SH1 south of Mill: 19,300 / 6,000 / 6,200 Mill Road: 5,900 / 9,000 / 9,600 The modelling shows that there is very little change to traffic volumes in and around Ōtaki as a result of the scheme. We have not modelled active mode numbers along the corridor but the shared use path is estimated to attract 150-200 trips per day on the opening year 2029/2030 and 200-250 by 2039.
119.	KCDC	*Could the Applicant please provide details for the cross section and configuration of the proposed shared path south of the Pukehou Rail Overbridge and the standard of the shared path and describe how it will be consistent with the KCDC Cycleways, Walkways and Bridleways Strategy?*	Refer to Geometrics Plans (including typical sections) and also section 3.6 of the Design and Construction Report (DCR) (provided as Appendix Four to Volume II) for intended outcomes for the proposed Shared Use Path (SUP). The DCR explains that the SUP will be designed with reference to the Austroads Guides for walking and cycling and is expected to be fully sealed and the width will generally be a minimum of 3.0m wide plus 0.5m buffer strip. When using the shoulder of the existing SH1, the path will be appropriately separated from traffic.

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			There are no other current or planned cycleways in the KCDC cycle map (kapiti-coast-cycle-map-2022.pdf) for the proposed SUP to tie into. The KCDC CWB strategy is no longer available on the Council website and may have been replaced by the Sustainable Transport Strategy (March 2022).
120.	KCDC	*The Final Technical Assessment A – Transport (paragraph 32) suggests that a detailed construction methodology will be provided with a Construction Traffic Management Plan (CTMP). Some further information is provided at paragraphs 282 – 300.* *Could the Applicant please provide more detailed access plans and a draft CTMP as part of the application material?*	As set out in respect to request 113, the proposed designation Conditions require the preparation of a Construction Traffic Management Plan (CTMP) and the objective and the content of the plan are specified in Schedule 2 (to the proposed Conditions). The CTMP will amongst other things include the location and management of site access routes and access points for heavy vehicles. The CTMP will be provided as part of the Outline Plan process, which will also confirm the design of the Project and its construction methodology.
121.	KCDC	*Volume III 01 - General Plan Set contains limited detail on the layout of the Active Modes cross section and design, specifically:* *a. Integration plan with Ōtaki and the PP2Ō Shared Path* *b. Cross section south of the Pukehou Rail Bridge to avoid it being hard up against the existing state highway.* *c. Connections from the shared path to local roads e.g. Forest Lakes Road* *Could the Applicant please provide this detail?*	a. The Ō2NL Project Shared Use Path (SUP) is intended to connect directly onto the end of the PP2Ō shared use path. The design of the SUP and the intended connection with the PP2Ō shared use path will be confirmed through the outline plan process. b. Please refer to response to request 119. The design of the SUP and the relationship with the existing state highway will be confirmed through the outline plan process. c. The scope of the SUP and how it connects to the local road network is as shown on the Drawings provided in Volume III and does not include connections across the existing state highway to Forest Lakes Road for example. Please also refer to the response to request 119 that refers to where information on the intended SUP design standards can be found in the notice of requirement documentation.
122.	KCDC	*Could the Applicant explain how road user legibility and understanding for Ōtaki has been addressed from a legibility and transport user perspective given there are*	The Ō2NL Project is not making any changes to how Ōtaki is accessed from the highway network (and the recently completed PP2Ō Project). Please refer to response to request 118. The proposed southern interchange will allow road users from Forest Lakes / Manakau heading to and from Otaki / Wellington onto the state highway network.

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		3 interchanges within 3.5km of each other?	The SUP will provide access to the current road and the PP2Ō SUP. The detailed design of the Ō2NL Project including signs will be confirmed through the outline plan process.
Landscape and Visual			
123.	HDC and KCDC	*The Final Technical Assessment J - Terrestrial Ecology, Appendix J.1, refers to properties with a numerical ID, however there is no table or plan provided that links the numerical ID to a specific property address. Could the Applicant please provide either a plan or table?* *The Technical Assessment D - Landscape Visual and Natural Character has a table of properties using the Stantec ID number (refer Appendix D.3 Visual Effects pgs. 127-215). Could the Applicant please clarify if the Stantec ID number is the same as the numerical number that is referred to in the Terrestrial Ecology Technical Assessment?*	The property identifiers (including Stantec ID numbers) should be the same as used and shown on the Land Requirement Plans and described in the Land Requirement Schedule, both of which are provided in Volume III.
124.	HDC and KCDC	*Could the Applicant please explain how the Councils will be involved in the Design Audit process from a stakeholder perspective, as described in section 4.1 CEDF?*	As set out in proposed conditions DTW5 and DGA6(c).ii. Design Review Audits will be carried out prior to construction and every three months during the construction period. They will be made available to the Councils on request. The pre-construction Design Review Audit will be provided to Councils as part of the outline plan process.
125.	HDC and KCDC	*While condition DLV1 requires the implementation of the landscaping planting shown on the Planting Concept Plans, could the Applicant please advise what the process they propose to be used to certify or amend the planting Concept Plans (e.g. a similar approach as proposed in*	Landscape plans will be included in the outline plan submitted to Councils as required by section176A(3)(e) of the RMA. The Councils can request changes to the landscape plans through the outline plan process. Once the outline plan is confirmed, any subsequent changes to the landscape plans would need to be authorised as an amendment to the outline plan, and subject to the same process.

No.	Jurisdiction	Information requested	Waka Kotahi response
		conditions REM2 & REM3 for the Ecology Management Plan for Regional Councils?	
126.	HDC and KCDC	*Condition DLV1 addresses Landscape Planting. DLV1 b) states that:* *Landscape planting must be implemented, maintained, monitored and replaced to achieve a 90% survival rate at five (5) years following the date that initial planting commenced;* *Could the Applicant please comment on whether a percentage canopy cover rather than a percentage of plant survival would be a better tool for measuring planting success at the time of Final Completion? For example, if a mass plant failure occurred in Year 4 after planting, and replacement using small grade plants occurred, does it consider this as satisfying the 90% survival rate where the aim in terms of planting success is to create a self-sustaining plant community that is sufficiently established to shade and fend off weed species?*	It is agreed that canopy coverage be added to condition DLV1, as follows: "*b) Landscape planting must be implemented, maintained, monitored and replaced to achieve a 90% survival rate and 80% canopy coverage of the ground at five (5) years…*" This approach is consistent with Waka Kotahi P39 Specification section G Planting, which requires: • No greater than 10% loss for grades less than 15lt/PB28 (i.e. most plants); and • No loss for plants over 15lt/PB28 (i.e. specimen trees, street trees); and • 80% canopy coverage of the ground An updated suite of conditions will be provided through the ensuing processing phases.
127.	HDC and KCDC	*Could the Applicant please comment on the consistency of the proposed conditions across Ecological and Landscape conditions in terms of post installation maintenance and management regimes and the criteria for measuring planting success?*	Standards have been derived in response to effects. So for example the planting standards in proposed condition DLV1 (which relates to visual and general landscaping) differ from the standards in proposed condition REM13, which relates to ecological offsetting. The standards for landscaping are Waka Kotahi P39 Specification section G Planting referred to in response to request 126. The standards derived for the ecological offsetting are based on the Biodiversity Offset Accounting Model which has specific requirements as explained in Technical Assessment J (Terrestrial Ecology).
128.	HDC and KCDC	*Could the Applicant please comment on how weed*	Methodologies for pest plant control within ecological mitigation and offsetting sites will be detailed in the

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		infestation in the rehabilitation, restoration and landscape plantings, particularly where they adjoin ecological mitigation and off-setting sites, is to be managed and how this is addressed in consent conditions?	Ecological Management Plan (EMP), as required by proposed resource consent condition REM1, and as described in Schedule 7 to the proposed Conditions. This will, in summary, describe the distribution and abundance of all pest plant species. Control methodologies will then be devised based on the type and size of pest plant infestations present. Timelines for initial pest plant control, site preparation, planting, and post-planting maintenance and monitoring will be supplied. No specific weed controls are proposed in the rehabilitation, restoration and landscape planting areas, and this would occur as necessary to meet the maintenance and management standards in proposed condition DLV1. Specific actions as provided for in the EMP may be undertaken in these planting areas to ensure that standards in REM12 are achieved.
129.	HDC and KCDC	*Could the Applicant please comment on how pests and weeds on Waka Kotahi land that lies outside the designation that potentially will lie idle /not farmed until practical completion of the works will be controlled?*	Most areas of property located outside of the designation are expected to be continued to be used as they are today. Weed and animal pest control would be undertaken as part of any standard property management practice.
Economics			
130.	HDC and KCDC	*The Final Technical Assessment O - Economics and Town Centre Impacts does not consider or assess the effects of points of access and egress on Ōtaki businesses.* *Could the Applicant please provide an assessment of the economic effects of the north of Ōtaki interchange on the Ōtaki town centre?*	An assessment of the economic effects of the Ō2NL Project on the retail strip on state highway through Ōtaki (and on the Ōtaki town centre) is provided in Technical Assessment O (Volume IV), at paragraphs 20 and 78. This assessment assumes that the north of Ōtaki interchange is in place. Please note that the PP2Ō Expressway (now open) means that through traffic can bypass this retail strip through Ōtaki.
131.	HDC and KCDC	*The north of Ōtaki interchange does not provide direct access to the communities of Manakau or Ohau and the Final Technical Assessment O - Economics and Town Centre Impacts does not consider alternative alignment options and the*	Details of options considered and assessed (using multi-criteria analysis) and then how a preferred option was selected is described in Part E of the Supporting Information and Assessment of Effects on the Environment Report (Volume II). The option assessments considered impacts on the transport network in terms of the varying scale of safety and efficiency benefits which, in turn, form the basis for economic benefit.

No.	Jurisdiction	Information requested	Waka Kotahi response
		economic effects that alternatives may present in relation to growing the local communities of Manakau and Ohau, provide more resources locally and reduce trips and trip distances that alternatives which enabling direct access would provide. *Could the Applicant please provide an assessment of alternative alignment options and the economic effects of alternatives on the local communities of Manakau and Ohau?*	Socio-economic effects, way of life and community cohesion aspects were specifically considered as part of the corridor selection process and are summarised on pages 119 – 121 of the Indicative Business Case (December 2018) and described in detail in Appendix E to that report. Refer: Technical reports | Waka Kotahi NZ Transport Agency (nzta.govt.nz)
132.	HDC and KCDC	*Could the Applicant please explain how the O2NL interchange at Taylors Rd, north of Ōtaki optimise the economic and social capacity of Ōtaki and Manakau?*	The Ō2NL Project retains the existing social and economic capacity of Ōtaki and Manakau by retaining existing connections via the existing state highway and local roads. The removal of traffic from the current state highway to the Ō2NL Project will provide safety and journey time reliability benefits for users who continue to use the old state highway. New interchanges to the north of Ōtaki and at Levin provide improved connections to the region.
133.	HDC and KCDC	*The economic effects of O2NL on Tara-Ika and the economic role of Tara-Ika in relation to Levin/Horowhenua are not covered within the Final Technical Assessment O - Economics and Town Centre Impacts, which only considers global issues concerning Levin/Horowhenua and those relating to the existing town.* *Could the Applicant please provide an assessment of the economic effects of O2NL on the Tara-Ika growth area?*	The Horowhenua District Council are part way through a Plan Change process that relates to the Tara-Ika growth area. This plan change (HDC PC4) seeks to enable development in the Tara-Ika growth area, and is currently subject to an Environment Court appeals process (refer to section 9.5.4.3 of the Supporting Information and Assessment of Effects on the Environment report (Volume II)). As far as Waka Kotahi understands, no resource consents have been granted that would enable large-scale development at Tara-Ika. As such, large-scale development at Tara-Ika does not form part of the existing environment in respect of the Ō2NL Project notices of requirement. Accordingly, no assessment of effects on that development is required. However the Ō2NL Project has been designed on basis that urban development is planned to occur at Tara-Ika in the future by for example proposing low noise road surfacing. That said, as discussed in Technical Assessment A, the Ō2NL Project provides capacity in the transport network that is needed to realise the full extent of Tara-Ika. Therefore, the Ō2NL Project will have a significant positive 'enabling' impact on the Tara-Ika development.
134.	HDC and KCDC	*Could the Applicant please explain what the community connectivity impacts and*	See response to request 133 in terms of effects on Tara-Ika.

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		associated economic effects of providing connections only at Queen Street East and Tararua Road on Tara-Ika and the eastern part of Levin are, including between Tara-Ika and Waiopehu College?	The Ō2NL Project does not preclude the development of additional east west links between Tara-Ika development area and Levin. These links as well as the Ō2NL Project are depicted on the Tara-Ika Structure Plan and are to be brought forward by developers of the Tara-Ika development area, as required to support the Tara-Ika development.
135.	HDC and KCDC	*Could the Applicant please explain why/how it considers that not providing the local connections over the 2km wide extent of the interface between Tara-Ika aligns is consistent with the Project Objectives (as set out in Volume II, Part A s.4.6) and the various documents listed in s.1.4 of the CEDF (pgs 16 & 17), in relation to addressing community connectivity, severance, economic, social and environmental sustainability?*	One of the Ō2NL Project objectives is to '*provide appropriate connections that integrate the state highway and the local road network to serve urban areas*'. Further to the responses to requests 133 and 134, it is acknowledged that Tara-Ika is a planned urban area that does not form part of the existing environment or have a road network. The precise form of Tara-Ika urban area and network is not yet known and is subject to future planning and resource consent processes. The phasing of the development is not defined and initial phases will not, and later phases ultimately may, require additional connections to be provided. The Ō2NL Project proposed to reconnect existing local roads across the new state highway (Queen Street East and Tararua Road) and as part of these to include new walking and cycling facilities. These together with a new interchange on Tararua Road will support the Tara-Ika development.
136.	HDC and KCDC	*Could the Applicant please provide the empirical information to demonstrate the social, economic and environmental sustainability impacts of the proposed approach to connections at Tara-Ika and how that relates to the cross connections and urban form proposed in the Tara-Ika Structure Plan?*	In addition to the responses to requests 133 and 134, the Ō2NL Project sustains the connection of the existing environment and the social sustainability of the community, it provides ability to connect to these existing links and does not preclude a new connection being provided in the future for a future community.
Urban Design			
137.	HDC and KCDC	*Could the Applicant please explain why/how, in omitting to provide the connections illustrated by the Tara-Ika Plan Change 4 Structure Plan, the proposal is or can be consistent with the Waka Kotahi Design Principles described at page 10 of the CEDF, specifically, and in*	The CEDF principles listed apply to how the Ō2NL Project design is to be advanced and are not intended to apply to development being advanced by others. Waka Kotahi through page 10 of the CEDF supports the development of future connections at Tara-Ika in conjunction with the future development of the Tara-Ika growth area. As explained above in response to Request #134 these links are to be brought forward by the developer of Tara-Ika as and when they are required

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		relation to the omission of east-west connections located between Queen Street East and Tararua Road, how the proposal fully and optimally follows the first six of these design principles, in particular Principles 2,3,5 and 6?	by the Tara-Ika development. The Ō2NL Project does not preclude such connections. Also see response to request 133.
138.	HDC and KCDC	*Could the Applicant please explain how O2NL, by treating the planned rezoning and urban growth provided for by Plan Change 4 at Tara-Ika as not part of the existing environment, addresses and meets the following project objective:* *'….to provide appropriate connections that integrate the state highway and local road network to serve urban areas" (refer AEE Volume II, Part A, p23)?*	See responses to request 133 and 135.
139.	HDC and KCDC	*Could the Applicant please explain what the social and urban design effects would be from the East-West Arterial not being established once O2NL is constructed, including on delivery of the outcomes anticipated and provided for by Plan Change 4 Tara-Ika?*	As explained above (responses to requests 133 and 135) the Ō2NL Project does not preclude a connection being provided in conjunction with the future development of Tara-Ika. The hypothetical effects of not providing such a future connection would need to be addressed by that development and are beyond the scope of this notice of requirement.
140.	HDC and KCDC	*Could the Applicant please explain how the 'Project Shared Use Path and Possible Future Connections – Indicative, not part of Ō2NL Project' diagram (CEDF page 128) provide for the potential for connections to the strategic cycleways that are included in the Tara-Ika Plan Change 4 Structure Plan?*	See responses to request 133 and 135. Page 128 of the CEDF notes that other developments may in the future provide additional walking and cycling facilities. Where these have been developed and interface with the Shared Use Path (SUP) proposed by the Ō2NL Project then they can be joined to the SUP at that time by the developer. The SUP has been located on the eastern side of the proposed Ō2NL Project state highway in response to Horowhenua District Council request that it be located on the eastern side so that it may form part of the Tara-Ika walking and cycling network (refer to Table 3-5 on page 15 of the Design and Construction Report, provided as Appendix Four to Volume II).

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141.	HDC and KCDC	*The AEE Vol II, Part A, page 19 states: "Waka Kotahi will continue both through statutory planning processes but also through future integrated master planning processes and the improvement programme to work with stakeholders to achieve the sustainable urban access critical to reducing enabled emissions."* *Could the Applicant please explain how matters of connection, severance and emissions will be achieved and how the proposal is consistent with this statement?*	See responses to request 133, 135 and 140. The reference on page 19 relates to broader Waka Kotahi responsibilities rather than what is achieved through the Ō2NL Project. They reflect an overall approach of working with councils to integrate urban planning and transport planning to help reduce enabled emissions. The connections provided by the Ō2NL Project are described in sections 3.6.and 3.13 of the Design and Construction Report (Appendix Four to Volume II) and the social effects of the Project (including severance) are assessed in Technical Assessment E (Social Impact Assessment) provided in Volume IV. The Ō2NL Project includes a shared use path and walking and cycling facilities are provided on local roads that are re-connected across the new state highway. This approach promotes multi-modal access opportunities and aligns with sustainable urban access objectives.
142.	HDC and KCDC	*Could the Applicant also please explain the impact on enabled CO_2 emissions for the foreseeable future in allowing for movement between the 3500+ houses at Tara-Ika and Levin relative to the impact if the connections were to be provided?*	See response to request 104 and 139. The impact of the Tara-Ika development are matters that need to be addressed by the developers of the Tara-Ika development noting that the Ō2NL Project does not preclude additional connections from being provided, consistent with the Tara-Ika Structure Plan.
143.	HDC and KCDC	*The Final Technical Assessment A-Transport notes at paras 102-105 that the Ō2NL Project is consistent with the HDC District Plan and "has strong alignment with transport policy at regional and national level."* *Could the Applicant please explain how this comment considers the Tara-Ika Plan Change and the effects of Ō2NL on that area, in particular the east-west connections to and from Tara-Ika, including provision for convenient walking and cycling using planned strategic cycleways.*	See response to request 104, 133, 134, 135 and 141.

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144.	HDC and KCDC	*The Final Technical Assessment A-Transport notes at para 206: "Severance can be created when a road acts as, or feels like, a barrier to movement. This tends to be because people feel unsafe crossing the road. … If people do not make journeys they would like to, this has negative consequences at both social and economic levels."* *While this comment specifically refers to at-grade crossing, could the Applicant please how this principle applies to the Tara-Ika growth area and its relation to Levin, and what the precise magnitude of the negative consequences of absence of crossing are?*	See response to request 104, 133, 134, 135 and 141.
145.	HDC and KCDC	*Final Technical Assessment A-Transport at Figure A.27 shows a diagram describing "2039 Induced and Suppressed Trips in Levin" which shows a connection over the Ō2NL from Tara-Ika on and connecting to Arapaepae Road on the alignment of Liverpool Street, which is inconsistent with the General Arrangement Plans in Volume II-02.* *Could the Applicant please explain how the induced traffic analysis would change if that connection across the Ō2NL were to be excluded?*	If the East West Arterial was excluded, then traffic is anticipated to disperse to Tararua Road and Queen Street East. This is a slightly longer journey for some road users and so there would be a potential for a slight reduction in car travel.
146.	HDC and KCDC	*In relation to implementing the CEDF could the Applicant please explain:* *(a) what is the full process of the Design Review Audit including appointment of suitably*	a) The Design Review Audit is expected to be led by the Project's CEDF authors / team who will draw upon technical experts (as required). The expectation is that our iwi partners will form part of the CEDF authors / team. b) See response to request 124.

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		qualified person(s) to cover all elements covered by Chapter 4 of the CEDF? *(b) what is the scope for questioning and/or comment and/or possibly certification by the District Council of any Design Review Audit?*	
147.	HDC and KCDC	*Could the Applicant please describe how the project relates to HDC's Tara-Ika urban growth area as per HDC's Plan Change 4, including the road and pedestrian and cycle connections that are part of that plan change?*	The relationship of the Ō2NL Project with Tara-Ika is described in the Supporting Document and Assessment of Effects on the Environment Report (Volume II) in Part A, Part B (sections 7, 9.1, 9.3, and 9.4), Part D (section 18) and Part E.
148.	HDC and KCDC	*Could the Applicant please explain how Ō2NL in relation to Tara-Ika responds to the existing traffic network and its problems as discussed by Technical Assessment A-Transport (para 206) to meet the identified Project objectives, which include "To provide appropriate connections that integrate the state highway and local road network to serve urban areas."*	See response to request 135.
149.	HDC and KCDC	*Could the Applicant please comment on the following photo simulations contained in Volume III Section 10-Photo Simulations:* *(a) the state of completion of rendition of the proposed planting at Viewpoint 4 in the Queen Street East over-bridge as this currently does not include the proposed tree stands nor the 'tree avenue' described in the 09-Planting drawing for this area.* *(b) Viewpoint 14 appears to not show the*	The photo simulations do not depict all planting so as to not unnecessarily obscure the Ō2NL Project proposed state highway or existing vegetation (relevant particularly to VP4 where existing vegetation screens the Prouse homestead/ Ashleigh). All proposed planting areas are shown on the Planting Concept Plans provided in Volume III. What is shown and not shown is described below, to assist: a) VP4 - The planting shown represents conservative growth rates at approximately Year 5. The proposed taller planting that would be in the foreground of this image (which comprises a combination of ecological offset planting, the avenue of trees along the western boundary of the Prouse property, and proposed groups of trees on the Queen Street East bridge embankment) has not been shown in the photo simulations.

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		planned tree clusters. (The purpose of the yellow lines to describe intervening planting is understood. However, the cluster planting described on the landscape drawings ideally would be included to ensure consistency.)	b) VP14 - Planting shown represents conservative growth rates at approximately Year 5. Proposed taller planting in the foreground of this image which comprises a combination of ecology offset planting and the proposed groups of trees on the embankments has not been shown in the photo simulations.
Terrestrial and Freshwater Ecology			
150.	HDC and KCDC	*Throughout Technical Assessments J and K, property identifiers are used, however there appears to be no table/reference map which shows the property identifications.* *Could the Applicant please provide a property identification reference map as part of the drawing set or as part of these Technical Assessments?*	The property identifiers used should be the same as those used and shown on the Land Requirement Plans and described in the Land Requirement Schedule, both of which are provided in Volume III.
151.	HDC and KCDC	*Proposed condition REM12 outlines performance targets relating to planting implementation and management.* *Could the Applicant please clarify the difference between enrichment and replacement planting, which appear to be used interchangeably in this condition?*	In condition REM-12, under Terrestrial offset and enhancement planting, 'enrichment plants' refer to mature phase species that will be planted at least three years after the revegetation species have been planted (by which time sufficient shelter is provided). These species include titoki, kohekohe, hinau, and totara. Replacement trees refers to planting (mature phase species) within existing habitats such as Arapaepae Bush, where they can be regarded as enrichment or enhancement species, in that they will over time help to improve floristic diversity and structure.
152.	HDC and KCDC	*The accepted methodology for long-tailed bat surveys includes surveys in spring/early summer (for breeding females and depend young) and later summer/autumn (for juvenile range establishment and adult mating).* *Could the Applicant please explain the rationale for undertaking a single ABM deployment for bat*	In our opinion, the general paucity of bat roost habitat within the Project footprint, together with an absence of bat records west of the Tararua Range, precluded the need for a follow-up bat survey.

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		monitoring during bat active period?	
153.	HDC and KCDC	*Proposed condition RTE7 outlines the requirements relating to the provision of indigenous buffer planting. The proposed timing of the planting under b)ii) specifies that buffer planting be undertaken before the end of the first planting season following the Project being open to the public.* *Could the Applicant please clarify and confirm the timing of the buffer planting because this appears to be inconsistent with the recommendations of Technical Assessment J (paragraph 207 (d) and (e), pg 63) where buffer planting is identified as a mitigation measure for potential dust deposition, which can occur during construction?*	Condition RTE7 will be modified to require buffer planting to be undertaken in advance of construction occurring where practicable. In some instances buffer planting may not be able to be undertaken in advance due to lack of access to property, or due to construction phasing requirements, noting that planting should not occur during summer.
154.	HDC and KCDC	*Proposed conditions RTE2 e) and RTE3 e) could be interpreted in its current form that if an active nest is found subsequently to work starting that activity can continue inside of 50m exclusion zone if activity doesn't cause nest failure.* *Could the Applicant please clarify whether a 50m exclusion zone will be established in the event of nest identified by Condition RTE2/3 d) consistent with the methodology in RTE2/3 b) and e)?*	Both conditions state that '*where an active nesting site is identified by a monthly survey ….. works may continue subject to a suitably qualified person or persons confirming that the works will not cause the next to fail.*' There is no reference to 50m radius exclusion zones and these do not apply. The suitably qualified person may conclude that such a zone needs to be established or that works do not effect a nest that has established whilst that work was underway.
Noise and Vibration			
155.	HDC and KCDC	*The Final Technical Assessment B – Noise and Vibration presents several differing ranges of noise criteria. For operational*	For this technical assessment "reasonable noise" has been taken in the context of the construction of a major piece of infrastructure, and as guided by the identified performance standards – see paragraphs 67 onwards. This is consistent with NZS 6806 which provides three

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		traffic noise, these include criteria based on NZS 6806:2010, WHO guidelines, and subjective response criteria based on UK planning guidance. *Could the Applicant please explain what noise criteria have been selected as guidance to what is "reasonable"?*	different categories, with differing outcomes to residents, but all may be "reasonable" based on engineering / geographic constraints, and local context. For the Ō2NL Project, as set out in Table B.26, compliance with NZS 6806 Categories and comparison with WHO Guidelines were considered as evaluation factors for mitigation design. The assessment of residual effects considers compliance with NZS 6806 categories, comparison with WHO guidelines, and likely subjective response separately, rather than deriving a single criteria for reasonable/unreasonable.
156.	HDC and KCDC	*At Paragraph 20 of the Final Technical Assessment B – Noise and Vibration the first sentence notes that the operational noise levels will be reasonable. However, the following sentence notes that for some receivers, the operational noise "…may be disruptive, or very disruptive….". These two sentences appear to be contradictory.* *Could the Applicant please explain this contradiction and what noise criteria has been used to make this assessment?*	Paragraphs 71 and 86 of the Technical Assessment B (Noise) explain that the terms 'disruptive' and 'very disruptive' are derived from the UK planning framework. Paragraph 343 explain that 'disruptive' and 'very disruptive' effects generally correlate to Category B PPFs (as per NZS6806). Paragraphs 18 and 19 of Technical Assessment B (Noise) explain that the operational noise from Project may mean that in some instances residents change how they use their property. This may mean that residents change the location of where they undertake some of their activities on their property to inside or on a sheltered aspect. Other activities may be avoided or undertaken less frequently. This is consistent with expectations for Category B (and C) PPFs (as per NZS6806), where little outdoor amenity can be expected on areas directly exposed to road-traffic noise. While not desirable, as discussed above in Response #155, these effects may still be and are considered to be reasonable in the context of a project of this scale.
157.	HDC and KCDC	*At Paragraph 45 of the Final Technical Assessment B – Noise and Vibration, no reference has been provided for the research referred to, regarding New Zealanders exposed to road traffic noise.* *Could the Applicant please provide the relevant reference to the document for this research?*	These figures are from the AECOM National Land Transport (Road) Noise Map 2019 Project Report which are available at: https://nzta.govt.nz/assets/Highways-Information-Portal/Technical-disciplines/Noise-and-vibration/Research-and-information/Other-research/national-land-transport-road-noise-map-2019-05-16.pdf
158.	HDC and KCDC	*There appear to be some anomalies between the*	The annual average "Existing" noise level has been included in Appendix B4. These have been estimated on

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		information provided in Table B.12 and the same information set out in Appendix B4 of the Final Technical Assessment B – Noise and Vibration. For instance, Table B.12 shows that the current noise level at 47 Sorenson Road is estimated to range between 45 and 50 dB LAeq(24h) whereas Appendix B4 states that the range is 50 to 55 dB LAeq(24h). This type of anomaly between the two sections of the report occurs for a number of assessment locations. *Could the Applicant please explain why is there a difference in current noise level estimates in Table B.12 and Appendix B4?*	an area-wide basis, without differentiation between PPFs based on vegetation cover and localised noise sources. These estimates have been prepared to assist in understanding what future noise levels might sound like. There are some differences with the measured short-term levels reported in Table B.12, which are at specific locations, and based on conditions with little wind. The estimated $L_{Aeq(24h)}$ from measurements is discussed in response to Request #159. The estimate of the annual average on an area basis is considered appropriate, informed by measurements and observations. As shown in Figure B.6, there is significant variation in the $L_{Aeq(24h)}$ and undue weighting on a 15-minute measurement is not considered appropriate.
159.	HDC and KCDC	*At Paragraph 167 of the Final Technical Assessment B – Noise and Vibration, the current ambient noise levels in the area of Sorensons Road are reported as 45 to 55 dB LAeq(15 min) (15 min) during the day, and 35 to 45 dB LAeq(15 min) (15 min) at night. The next sentence concludes that the 24 hour sound level in this vicinity has been estimated as 50 to 55 dB LAeq(15 min) (24h).* *Could the Applicant please explain how this conclusion was reached?*	As the measurements were only 15 minute snapshots of the day and night, during relatively calm conditions, it is anticipated that there will be also be some “loud” noise events outside of the measurement window. These events would increase the $L_{Aeq(24h)}$ slightly above what would be calculated using the 2x15min values alone. Due to the energy averaging process, unobserved high noise periods would have greater effect on the $L_{Aeq(24h)}$ than unobserved quiet periods. Therefore, the stated $L_{Aeq(24h)}$ ranges are considered appropriate for this location and for their purpose.
160.	HDC and KCDC	*At Paragraph 223 the Final Technical Assessment B – Noise and Vibration notes that the noise from the road milling has not been considered in the construction noise assessment, due to it being a short-term activity.*	Milling as part of resurfacing may be required either to transition between two road surfaces, or to reduce the ground levels and is work that is anticipated as being needed to tie-in (or join) the new state highway with the existing state highway. Paragraph 223 of Technical Assessment B (Noise) explains that milling at tie-ins is an activity that is anticipated to take hours (not days) and is likely to occur at night (although it may not). Due to the short duration the specific effects are not measured but are proposed to

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		Road milling machines typically have a sound power level of around LWA 110 dB and the activity is scheduled to occur at night times, therefore could the Applicant please address the noise effects of nighttime road milling in the construction noise assessment?	be managed. The proposed conditions (provided as Appendix Five to Volume II) requires the preparation of a Construction Noise and Vibration Management Plan. The content of this management plan is provided in Schedule 2 of Appendix Five and item (h) states that where noise is predicted to be exceeded, a schedule will set out mitigation and controls to minimise effects as far as reasonably practicable. This means that milling work (if undertaken at night) will be subject to this process. This Schedule process is described in paragraphs 310 and 311 of Technical Assessment B (Noise).
161.	HDC and KCDC	*There are two Figures provided which illustrate the location and type of proposed operational noise mitigation, being Figure B.29 of Final Technical Assessment B – Noise and Vibration and Figure 42-4 of "Volume II Supporting Information and Assessment of Effects on the Environment.* *Could the Applicant please confirm which Figure should be relied on as they are different in terms of level of detail provided?*	Figure B.29 provides a pictorial summary of the noise treatment design for the Project as a whole. The Councils should refer to the extent of surfaces and barriers as shown on the noise drawings provided in Volume III (refer to figures NV201-218). Proposed conditions DRN1, DRN2 and DRN3 deal with operational noise and noise barriers and these do not refer to these drawings. These conditions set out the extent of mitigation required by chainage and specifically DRN3 requires the extent of mitigation that is proposed be confirmed as part of the s.176A Outline Plan process (as per condition DG3).
Water Quality			
162.	HDC and KCDC	*Could the Applicant please explain how the National Policy Statements – Fresh Water (NPSFW), Regional Policy Statements and district plan requirements related to water quality are addressed in the proposed designation conditions such that they fulfil the territorial authority obligations under these instruments?*	The proposed designation conditions manage land use effects as regulated by the district plans. That reflects s.176(1)(a) of the RMA, which provides that once a designation is included in a district plan, s.9(3) does not apply to the project subject to the designation. The conditions that address water quality matters are proposed to apply to the various discharge consents and water permits required for the Project works from the respective regional councils. Accordingly, the designation conditions do not address water quality matters. This differentiation of functions is recognised in Chapter 11 of the Horowhenua District Plan where it states that: *"…given the framework of the law, many of the methods that have been identified for dealing with water issues involve actions by Horizons Regional Council, as set out in the One Plan, whose functions enable it to have more direct influence over activities involving water. It should be noted that the "water" issue below is principally concerned with the land use effects on water and the surface of the water. It is acknowledged that Horizons*

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			Regional Council is principally responsible for the quality and quantity of water within Horowhenua." The obligations of the territorial authorities with regards to the proposed designation conditions is to assess them in terms of their legality and effectiveness in managing the relevant adverse effects of the Project, and to recommend changes to Waka Kotahi as the Requiring Authority. A full assessment of the Project against the relevant provisions of the NPS-FM, the respective RPS's, and the respective Operative and Proposed District Plan's is provided in Part I of the AEE.
163.	HDC and KCDC	*The KCDC District plan, Policy INF Gen P4 calls for the use of adaptive management measures.* *Could the Applicant please clarify how this adaptive approach has been incorporated into the mitigation measures proposed to manage water quality effects?*	Policy INF Gen P4 (clause e) requires adaptive management measures to be implemented where uncertainty may exist around impacts over time. In this case, the water quality mitigation measures proposed are based on significant experience on other similar projects across New Zealand. The receiving environments and their characteristics are well understood as are the nature of the Project activities that require consent. On that basis, there is no uncertainty around what impacts the Project activities may have over time and an adaptive management approach is not required in terms of clause e) of the policy.
164.	HDC and KCDC	*The CEMP requirements as required by the designation conditions do not appear to be connected to the CEMP required by the resource consent conditions. The designation conditions are silent on the matter of minimizing and managing erosion. Could the Applicant please clarify how the requirements of the territorial authorities under the relevant national, regional and district policies and objectives and in relation to erosion are captured in the conditions for this application and how the CEMP will be prepared and approved to address both district and regional requirements?*	Refer to response to request 162. The approach to managing effects is provided in Part H of the Supporting Information and Assessment of Effects on the Environment (provided in Volume II). Relevant sections include: - Sections 59.2 and 59.3 describe the approach and process proposed for management plans. An explanation as to content is provided in section 59.2.2 and the proposed approval processes (which councils) are in section 59.3. - Section 60 provides information on the measures to manage effects and specifically the role of management plans in implementing those measures. Section 61 summarises the effects that are managed by the designation and the resource consent conditions.
165.	HDC and KCDC	*Technical Assessment H - Water Quality recommends instream water quality*	Refer to response to Request #162, which explains that water quality is managed through the regional consent applications and conditions.

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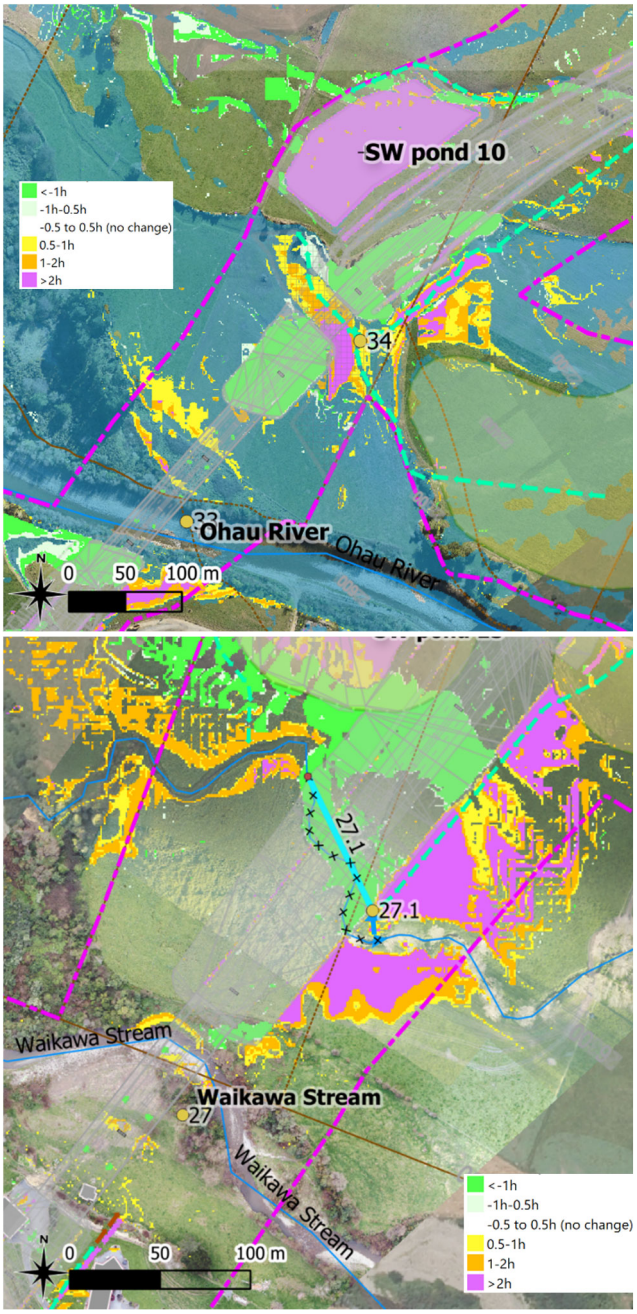
		monitoring upstream and downstream of the construction zone to determine the water quality effects of the project. *Could the Applicant please clarify how this is captured in the conditions?*	Conditions in respect of water quality monitoring and erosion and sediment control are proposed in Appendix Five of Volume II. Refer to for example RFE4, RGW2 & 3, RES1-10 and RWB2.
166.	HDC and KCDC	*Technical Assessment H - Water Quality outlines the methodology used to estimate concentrations contaminants in the receiving environment during construction. These are based on current TSS values in the stream which are increased on a pro-rata fashion based on a % increase in sediment generation for the contributing catchment.* *Given this is the case, could the Applicant please explain how we can be confident that the concentrations estimated are accurate enough to enable acute effects during rain fall events to be adequately assessed and how will the predicted 40% change in catchment D which exceeds the One Plan target will be minimised?*	Refer to response to Request #162, which explains that water quality is managed through the regional consent applications and conditions. The Erosion and Sediment Control Technical Report (provided as Appendix 4.3 to Appendix Four in Volume II) provides details of the sediment yield estimates (refer page 24 to 31) and includes an explanation as where estimation has been used on previous projects, that USLE significantly over estimated actual yields (paragraph 119) and thence the confidence that can be taken from the available prediction tools.
167.	HDC and KCDC	*The Design and Construction Report recognizes that higher intensity rainfall events have the potential to increase the volume and sediment load discharged from sediment control devices and has set trigger events above which more significant outflows from sediment control devices are likely to occur.* *Could the Applicant please clarify how these events affect downstream water quality in the receiving environment and how do the*	Refer to response to request 162, which explains that water quality is managed through the regional consent applications and conditions. The Erosion and Sediment Control Technical Report (provided as Appendix 4.3 to Appendix Four in Volume II) describes the proposed management approach. The outputs from this report inform Technical Assessment H (Water Quality) and in turn informs Technical Assessment K (Freshwater Ecology). The development of the proposed erosion and sediment control was iterative in response to outputs and response from Technical Assessments H and K (as well as Assessment J). The approach is then provided for in the proposed resource consent conditions provided in Appendix Five to Volume II.

No.	Jurisdiction	Information requested	Waka Kotahi response
		mitigation measures proposed respond to this increased risk of adverse water quality effects in high intensity rain fall events and appropriately minimise them?	
168.	HDC and KCDC	*The operational estimates of contaminant concentrations in the receiving environment are based on an average annual rainfall depth. Runoff and entrainment of contaminants tends to be worse during high intensity rain fall events.* *Could the Applicant please clarify how the shorter term, potentially acute effects resulting from such events have been addressed and shown to be appropriately minimised?*	Refer to response to request 162, which explains that water quality is managed through the regional consent applications and conditions. The operation of the stormwater treatment devices is described in Appendix 4.2 which is provided with the Design and Construction Report (Appendix Four to Volume II). In terms of water quality treatment of rainfall runoff, the "first flush" volumes will go through the treatment train of swales and constructed wetland before release into the receiving environment. The lengths of the swales are long and with a flat gradient, meaning a long residence time for water in the swales. After swale treatment, flows pass into the forebay and constructed wetland volumes for further treatment by settlement, biofiltration and vegetated uptake. The storage volumes are large compared to short duration, high intensity rainfall volumes and so water spends a long time inside the constructed wetlands. This means that the "first flush" from high intensity, short duration rainfall is treated through the treatment train of swale and constructed wetland – minimising the effects of road contaminants reaching beyond the constructed wetland facilities.
169.	HDC and KCDC	*The extent of earthworks will not be uniform across the construction period. Could the Applicant please explain when peak earthworks will occur and how does the USLE and recommended erosion and sediment control approach accommodate this peak, manage the extent of unstabilised construction footprint and thus address the relatively increased potential risk to water quality?*	Refer to response to request 162, which explains that water quality is managed through the regional consent applications and conditions and to Request #166, which explains that USLE can significantly overestimate actual sediment yield. Paragraph 125 of the Erosion and Sediment Control Technical Report (provided as Appendix 4.3 to Appendix Four in Volume II) provides the assumptions for the USLE calculation, which includes an assumption that the catchment will be fully exposed for the full eight months of the earthworks period (assumption (b)). This assumption is conservative as in practice areas will be progressively stabilised.
170.	HDC and KCDC	*Could the Applicant please explain what erosion and sediment controls are proposed for yard areas,*	Refer to response to request 162, which explains that water quality is managed through the regional consent applications and conditions.

No.	Jurisdiction	Information requested	Waka Kotahi response
		temporary works areas and other activities undertaken during the enabling/establishment works period, how this will be documented and how will the appropriateness of the controls be confirmed?	Section 4.3 of the Design and Construction Report (Appendix Four to the Volume II) confirms that erosion and sediment control measures are proposed to be used during establishment works. Proposed resource consent conditions (provided as Appendix Five to Volume II) require that erosion and sediment control plans to be certified by the regional councils (refer to condition RES3 and RES6 for example).
171.	HDC and KCDC	*Parts of the proposed project will be constructed in a flood plain.* *Could the Applicant please explain how the additional risks to erosion and sediment controls and consequently, water quality, have been addressed in these areas?*	Refer to response to request 162, which explains that water quality is managed through the regional consent applications and conditions. Almost the entire Ō2NL Project will be constructed on the piedmont alluvial plain at the foot of the Tararua Range. In general, such landforms are low angle and low energy environments subject to deposition rather than erosion. Consequently, the environment should naturally mitigate rather than exacerbate the risk of erosion and the need for sediment control. The measures proposed are therefore conservative, greater than likely necessary.
172.	HDC and KCDC	*Technical Assessment H - Water Quality states that hydrological effects could be mitigated through increased infiltration in catchments predicted to have > 10% impervious area.* *Could the Applicant please explain how and where this will be achieved?*	Refer to response to request 162, which explains that water quality is managed through the regional consent applications and conditions. The operation of the stormwater treatment devices is described in Appendix 4.2 which is provided with the Design and Construction Report (Appendix Four to Volume II). This explains that any potential increase in runoff during the 'extreme' design event considered (1% AEP +CC) will be accommodated within the stormwater management system. This generally relies on attenuation and then infiltration and percolation. When infiltration and percolation are not possible (when events exceed the design standards) excess flow will be discharged to existing watercourses. Any effects of the proposed highway on water quality will be 'less than minor' compared to other contaminants. All contaminants will be 'diluted' by the large flows.
174.	HDC and KCDC	*Technical Assessment H - Water Quality does not address the potential effects and mitigation in relation to water quality and flood plain function for the material supply areas adjacent to the Ohau River and Waikawa stream.* *Could the Applicant please provide this information?*	Refer to response to request 162, which explains that water quality is managed through the regional consent applications and conditions. The Draft Erosion and Sediment Control Plan (provided as Appendix 4.3.3 to Appendix Four in Volume II) applies to all earthworks, including material supply sites. Site specific erosion and sediment control plans (proposed condition RES1) will be prepared that respond to context and sensitivity with input from experts as required.

No.	Jurisdiction	Information requested	Waka Kotahi response
176.	HDC and KCDC	*The application states that in the absence of management actions, the effects of water abstraction are high and this includes potential exacerbation of water quality effects. Technical Assessment H - Water Quality does not appear to address this point.* *Could the Applicant please clarify the type, scale and potential risk to water quality from this activity?*	Refer to response to Request 162 that explains that water quality is managed through the regional consent applications and conditions. Management actions are proposed and, therefore, the stated potential high effect will not eventuate. In summary, the proposed water abstraction strategy, using various other sources of water prior to abstraction from rivers and a global consent to 'share the load' will largely avoid any water quality effects. Taking only from the existing core allocation (except when above median flows), only above minimum flow, and at a maximum rate of 10% of the minimum flow means that any effects will be within the measurement uncertainty (±8%) of open channel flow. The effects of abstraction will therefore be 'less than minor' and not "high".
177.	HDC and KCDC	*Could the Applicant please describe how* resource *the permanent stormwater devices will be operated and maintained in a manner that enables them to provide efficient and effective treatment of stormwater prior to discharge and how will performance of these devices be assessed and reported during operation?*	The operation of the stormwater treatment devices is described in Appendix 4.2 which is provided with the Design and Construction Report (Appendix Four to Volume II) (facilities) and is described in response to request 168. Technical Assessment H (Water Quality) (Volume IV) assesses the effects of stormwater runoff from the operation of the Project and this confirms that an overall positive effect on water quality. The water quality mitigation measures proposed are based on significant experience on other similar projects across New Zealand. The receiving environments and their characteristics are well understood as are the nature of the Project activities that require consent. Accordingly, no conditions are proposed requiring the performance on the devices to be reported during operation. The proposed stormwater treatment system will fall within Waka Kotahi maintenance regime. Maintenance of swales and constructed wetlands is documented in New Zealand best practice guidelines in the Wellington region and elsewhere. The key features are visual monitoring of plant health, sediment and litter capture volumes, clear flowpaths and free-flowing conditions in pipes/catchpits. Maintenance is generally carried out with hand tools, gardening skills and clear of the traffic lanes. Access for vehicles and small machinery will be incorporated into the landscape design of the device areas.
Hydrology and Flooding			
178.	HDC and KCDC	*Para 115 in the Final Technical Assessment F – Hydrology and Flooding report indicates inundation duration will be short, based on the short catchment response times. The Report*	Please find below figures that show the change in duration of inundation from the Ō2NL Project during the 1% AEP design event (1:100 year flood event at 2130 and allowing for climate change) (provided at full size as Attachment 5).

No.	Jurisdiction	Information requested	Waka Kotahi response
		provides two figures (F.15 and F.25) showing pre and post water level comparisons over time at two locations with neither of these figures appearing to extend over a long enough period to account for when inundation depths approach zero metres. *Could the Applicant please quantify the changes to the duration of flood inundation on active pasture and/or crop land beyond the designation boundary within the 2D extents of the three models? (This could be mapped as a time difference between pre and post O2NL construction from when inundation commences to when inundation ceases for a range of time bands (minimum of 0 to 1 hour) and for both the 10 year and 100 year scenarios).*	 These figures show that in a 1:100 year flood event at 2130 and allowing for climate change: - Ohua River - the duration of inundation increase is approximately 60 minutes in a small section of the property located to the east of the Project. - Waikawa Stream - the duration of inundation increase is between 60 and 120 minutes on land upstream of the Project. Technical Assessment F therefore concludes that the final highway could be constructed so that any effects outside of the designation would be 'less than minor'.

No.	Jurisdiction	Information requested	Waka Kotahi response
			The reasons for this conclusion were that those few areas potentially affected: - Are small and of limited extent; - Are under pastoral land use ; - Are generally already prone to flooding, or immediately adjacent to areas prone to flooding; - Any increase in the depth of flooding will be small, generally only a few centimetres; - Any increase in the duration of flooding will be short, generally less than an hour or two; - Given the above, the area will recover rapidly from any increased inundation; and - The potential effects of the increased flood risk will be infrequent and only during extreme events.
179.	HDC and KCDC	*Figures showing peak water level differences and velocity changes in the Final Technical Assessment F – Hydrology and Flooding Report do not include a legend clarifying the various colour bands.* *Could the Applicant please provide legends for these Figures?*	A revised version of the technical report to include the legends that were omitted in error has been prepared and included in Attachment 6.
Contaminated Land			
180.	HDC and KCDC	*Could the Applicant please explain how, at this stage in the project, excluding site contamination from the application does not pose a material issue/risk to other disciplines regarding their respective design/approach, and therefore the overall project concept?*	The NoR is based on a concept design to allow an envelope of effects to be assessed and consented, and the extent of the land required for the Project to be defined sufficiently for the NoRs to be given. Detailed design stages undertaken subsequent to the confirmation of the NoRs will incorporate the findings of a range of updated investigations (for example, site specific geotechnical assessments and detailed site investigations). Any material findings from the contaminated land investigation will be factored into that detailed design process. Should the detailed design process necessitate any changes to the designation conditions, or result in additional land being required, then any necessary RMA approvals will be sought at the time. This is common practice throughout the country for major linear infrastructure projects. It is important to note that any risks associated with not seeking contaminated land related resource consents are borne solely by Waka Kotahi as the Project proponent.

No.	Jurisdiction	Information requested	Waka Kotahi response
181.	HDC and KCDC	*The submitted PSI has identified 35 'potential HAIL sites', 30 within the proposed designation and 5 adjacent and has further ranked these sites as either 'low', 'medium' or 'high' risk, based on 'the likelihood and the nature of contamination existing at the site from a particular activity'. Eight sites ranked 'medium' risk and one site ranked 'high' risk are identified as requiring further investigation and these sites are listed in proposed condition REW4.* *Following the process set out in the NES-CS, and as full site walkover has not yet been undertaken, could the Applicant please comment if it would be more appropriate to first require the PSI to be revised and updated following a complete site inspection, and then require DSIs for all identified pieces of land where the PSI cannot conclude that it is 'highly unlikely that there will be a risk to human health if the change of use is made' (Regulation 8(4) and/or that the soil disturbance component cannot meet permitted activity thresholds (Regulation 8(3))?*	Waka Kotahi considers that the PSI is complete for its intended purpose and does not require subsequent revision.
182.	HDC and KCDC	*The PSI states that the risk screening system is based on the Ministry for the Environment (MfE) Contaminated Management Guideline No 3: 'Risk Screening System'.* *Could the Applicant please provide the template and workings of the risk screening, including the parameters adopted and the inputs?*	This information is not required to better understand the nature or extent of effects given that no applications have been made during this process. This is a technical approach matter that can be discussed by the relevant experts during and as part of the preparation of any future applications for resource consent under the NES-CS.

No.	Jurisdiction	Information requested	Waka Kotahi response
Planning			
183.	HDC and KCDC	*Section 19 of Volume II Part D states:* *'The activities that require resource consents pursuant to sections 9(2), 13, 14 and 15 of the RMA, the NES-F, the NES-CS, One Plan and the PNRP are described in detail within the Rule Assessment at Appendix One and summarised below. Appendix One also sets out the permitted activity rules applicable to the Ō2NL Project.* *All regional resource consents required for the Ō2NL Project are being sought as part of this application, whether they are explicitly specified or not. If, after detailed design is complete, further or different consents are required these will be sought at the time'.* *Section 19.7 of Volume II Part D states:* *'Waka Kotahi will undertake detailed site investigations (DSIs) including soil testing of sites traversed by the Ō2NL Project in subsequent design phases and once land access becomes available. Informed by the DSI results, if necessary*	Waka Kotahi confirms that DSIs will be undertaken as access to the sites where investigations are required becomes available. Until this access is secured Waka Kotahi is not in a position to confirm whether any resource consents are necessary. Should the investigations confirm that a resource consent is required by the NES-CS regulations, then such consents will be sought at that time. The proposed approach to contaminated soil is embedded by proposed resource consent condition REW4. Waka Kotahi does not anticipate that any resource consent required by the NES-CS regulations will necessitate works outside of the designations. However, if this is the case Waka Kotahi has the ability to, if necessary, seek an alteration to the designation under section 181 of the RMA.

No.	Jurisdiction	Information requested	Waka Kotahi response
		Waka Kotahi will then apply for any resource consents required by the NES-CS regulations and/or the relevant Regional Plans. Waka Kotahi will share the results of the DSI with the relevant district and regional council when they are completed.' *These paragraphs appear to contradict each other and there is potential that the consents required by the NES-CS could affect the alignment of the designation. Could the Applicant please explain why potential consenting requirements under the NES -CS do not need to be addressed at this stage?*	
184.	HDC and KCDC	*The O2NL Project does not include a connection between East Levin and Tara-Ika between Tararua Road and Queen Street East, and yet this is shown as a key component of the Tara-Ika Structure plan.* *Could the Applicant please provide a place based comparison of the before (no link) and after (with the pedestrian link and then a multi-mode link) assessment of connection options.*	See the response to request 139.
185.	HDC and KCDC	*Appendix 5, reference D.1 and D.2 describes the designation as:* *'The construction, operation, maintenance and*	The term improvement in the context of the designation relates to potential improvements that may be needed to be undertaken to enable the continued efficient, effective and safe operation of the land transport system. Such improvement activities may for example include new

No.	Jurisdiction	Information requested	Waka Kotahi response
		improvement of a state highway and shared user path and associated infrastructure, between Taylors Road (to the north of Ōtaki) and State Highway 1 north of Levin known as the Ōtaki to North of Levin Highway Project'. *Could the Applicant please explain what is meant by 'improvement' and describe the nature of the activities undertaken that would constitute improvement?*	improved barriers, pavement, lane control or lighting technology.
186.	HDC and KCDC	*Appendix 1 of the AEE provides a Rules Assessment against the Horizons One Plan and the Proposed Natural Resources Plan for the Wellington Region, however, there is no assessment of the Project against the Kapiti Coast District Council and Horowhenua District Council District Plan rules.* *Could the Applicant please provide an assessment of the Project against the HDC and KCDC District Plan rules, to demonstrate that a Notice of Requirement to designate is the most appropriate mechanism to achieve the objectives of the Requiring Authority (s.171(1)(c) RMA)?*	Waka Kotahi notes that the s171(1)(c) of the RMA test is not whether the work and designation are the most appropriate mechanism for achieving the Project objectives, but whether the work and designation are reasonably necessary to achieve the Project objectives. An assessment of whether the work and designation is reasonably necessary to achieving the objectives of the Ō2NL Project is provided in section 72.2 of the Supporting Information and Assessment of Effects on the Environment Report (Volume II). No assessment of the District Plan rules is necessary to address s171(c).
187.	HDC and KCDC	*Section 12.8 of the AEE notes that the design and timing of reconnecting network utilities effected by the O2NL will be discussed and developed in consultation with network utility owners.* *Could the Applicant please comment on whether the intention is to rely on the Network Utility provisions of the HDP and KCDP to*	The scope of the proposed designation (through the NoR) seeks to authorise all works needed to construct, maintain and operate the state highway. It was intended that this extended to include any works necessary to protect, relocate and reconnect network as required to enable the Ō2NL Project. These works fall within the proposed definition of 'establishment works' included in the proposed Conditions (see also section 4.3 the Design and Construction Report provided as Appendix Four to Volume II). As explained in the response to request 192, these works are generally permitted by the rules in the HDP and KCDP. It is for this reason Waka Kotahi seeks that

No.	Jurisdiction	Information requested	Waka Kotahi response
		undertake these works, and whether these works are likely to be permitted by the District Plans?	the requirement for an outline plan is waived under section 176A(2) (see response to request 193).
188.	HDC and KCDC	*Section 18.6 notes that within the Kāpiti Coast District, for several hundred metres, the SUP is located outside of the Ō2NL designation, but within the existing SH1 designation.* *Section 19.12.3 of the AEE notes that in some locations the SUP is located outside of the area subject to the proposed designation.* *(a) Could the Applicant please clarify if those parts of the SUP that are outside the proposed O2NL designation are within the existing SH1 designation, or are there parts of the SUP that fall outside either designation?* *(b) If the SUP is located outside either the existing SH1 designation or the proposed O2NL designation, could the Applicant please comment on the potential resource consents that may be required under the KCDP, or if the works are permitted by the rules in the KCDP?*	The existing property boundaries for SH1 are shown in a brown line on drawing set 02 – General Arrangement and the proposed Ō2NL Project designation is shown in a purple line. This shows the SUP is within the Ō2NL Project designation and when the SUP is outside of the purple lines, it is within the brown lines which is the existing SH1 designation. Therefore, the SUP is within the existing SH1 designation when not within the Ō2NL Project designation.
189.	HDC and KCDC	*Section 19.12.3 of the AEE notes that the works to relocate and improve the Tararua Road and existing SH1 intersection are located outside of the proposed designation and partially within the existing SH1 designation and 'where the SUP and intersection are not within the existing or*	It is assumed that this request relates only to the works proposed at the intersection of Tararua Road with SH1 and the associated level crossing of NIMT. A planning assessment of works against the rules of Horowhenua District Plan is attached (Attachment 7). The works associated with the relocation of the level crossing can comply with the rules in the District Plan and Therefore no resource consent or designation is required from HDC to authorise the works. However, s176(1)(b) approval will be required for any works undertaken on the KiwiRail designation, including

No.	Jurisdiction	Information requested	Waka Kotahi response
		proposed designations, the rules in the HDP apply'. *Could the Applicant please provide an assessment of the SUP and intersection works that are not located within the existing or proposed designation against the HDP rules and identify whether the works are permitted or will require consent under the HDP?*	the closure of the existing level crossing and the construction of the relocated level crossing.
190.	HDC and KCDC	*Section 10.1 of the AEE, final paragraph discusses the Design Audit process and makes reference to a Figure, however the Figure appears to be missing.* *Could the Applicant please provide the referenced Figure?*	The reference to a figure in Section 10.1 of Volume II is an error and therefore the reference to a figure should be ignored.
191.	HDC and KCDC	*Section 3.3.3 of the AEE notes the following:* *'The Tara-Ika Structure Plan shows an east/west arterial road (referred to as East West Arterial) crossing over Ō2NL and connecting the Tara-Ika Growth Area with Arapaepae Road. The East West Arterial provides access to the proposed commercial centre of Tara-Ika and provides additional capacity in the transport network. As the East West Arterial will cross over O2NL it will required bridging, which will require RMA approvals. It is expected that the RMA approvals will be sought in the near future.'* *(a) Could the Applicant please explain what structures (i.e. bridging and supports) would be required to accommodate the EWA and O2NL as depicted in the District Plan and NOR (noting that*	See the responses to request 133 to 139. Any structures necessary for the East West Arterial do not form any part of the scope of NoR for the Ō2NL Project and therefore any description of, or design of, such structures is not relevant to the consideration of the NoR. For this reason, the effects of such structures are not relevant to the consideration of the NoR. In addition, Waka Kotahi notes that the construction of the East West Arterial is not a permitted activity and that it would require separate district council and regional council consents.

No.	Jurisdiction	Information requested	Waka Kotahi response
		construction of the EWA road itself is currently a permitted activity albeit subject to s178(2))? *(b) Do any effects on the environment arise from these structures (including e.g. traffic and transportation effects, social and urban design effects, landscape / visual effects, cultural effects, and effects on the delivery of the outcomes anticipated and provided for by Plan Change 4 Tara-Ika)?*	
192.	HDC and KCDC	*Section 18.2 of the AEE notes that 'establishment works are limited in scale and have minor adverse effects. Further, establishment works are generally permitted by the rules in the relevant District Plan. It is on this basis that Waka Kotahi seeks to waive the requirement for an outline plan for establishment works'.* *Could the Applicant please undertake an assessment of the establishment works as defined in Appendix 5 Draft Conditions, to confirm that establishment works are permitted by the HDP and KCDP and that the subsequent request to waive the for an outline plan is appropriate?*	See the response to request 187. A planning assessment has been undertaken for the establishment works. This assessment confirms that the establishment works are permitted. The assessment is provided as Attachment 8. Condition DGA8 states that the "*requirement for an outline plan for establishment works is waived under section 176A(2) of the RMA*". The intention of the Condition is to confirm that the circumstances in section 176A(2) apply to establishment works and therefore the requirement for an outline plan is waived. For the avoidance of doubt, Waka Kotahi confirms that it seeks that the requirement for an outline plan for establishment works (as described in section 4.3 of the Design and Construction Report (provided as Appendix Four to the Volume II) are waived under section 176A(2).
193.	HDC and KCDC	*Could the Applicant please comment on the intent of proposed condition DGA8 - Establishment Works when there is a process specified under the RMA (s.176A(2)) for a Requiring Authority to seek a waiver to an Outline plan requirement?*	See the response to request 192.

No.	Jurisdiction	Information requested	Waka Kotahi response
194.	HDC and KCDC	*Final Technical Assessment N – Productive Land, at paragraph 7 notes that the 'extent of the restored land (and to what state it will be restored) is unknown'.* *Could the Applicant please explain what are the options available for restoration and are there minimum standards required that could be set as conditions to enable as much highly productive and highly versatile land to be restored?*	Paragraph 7 in Technical Assessment N is referring to land that is needed for construction purposes and following construction will be no longer required for the future operation and maintenance of the Ō2NL Project state highway and shared use path. On these areas of land (that are not permanently required for the operation and maintenance of the Ō2NL Project), the general approach to restoration is to clear construction materials, replace topsoil (either stockpiled or sourced) and revegetate with grass. In some instances, land will have been used during construction in a manner that is likely to result in an adverse impact on the underlying condition of the soil, subsoil and substructure layers, when compared to the pre-Project condition of the soil in a particular locality. In other instances construction activity may not have any material effect on the productivity and versatility of the land post construction. It is not possible to provide minimum standards that relate to versatile land and instead the point being made is that land under the construction footprint will become available again following construction and is not permanently lost to production, although productivity potential of this land area is likely to be impacted in some instances.

Waka Kotahi trusts that the above responses sufficiently address matters raised in your request for additional information. Please do not hesitate to contact the us if you have any queries.

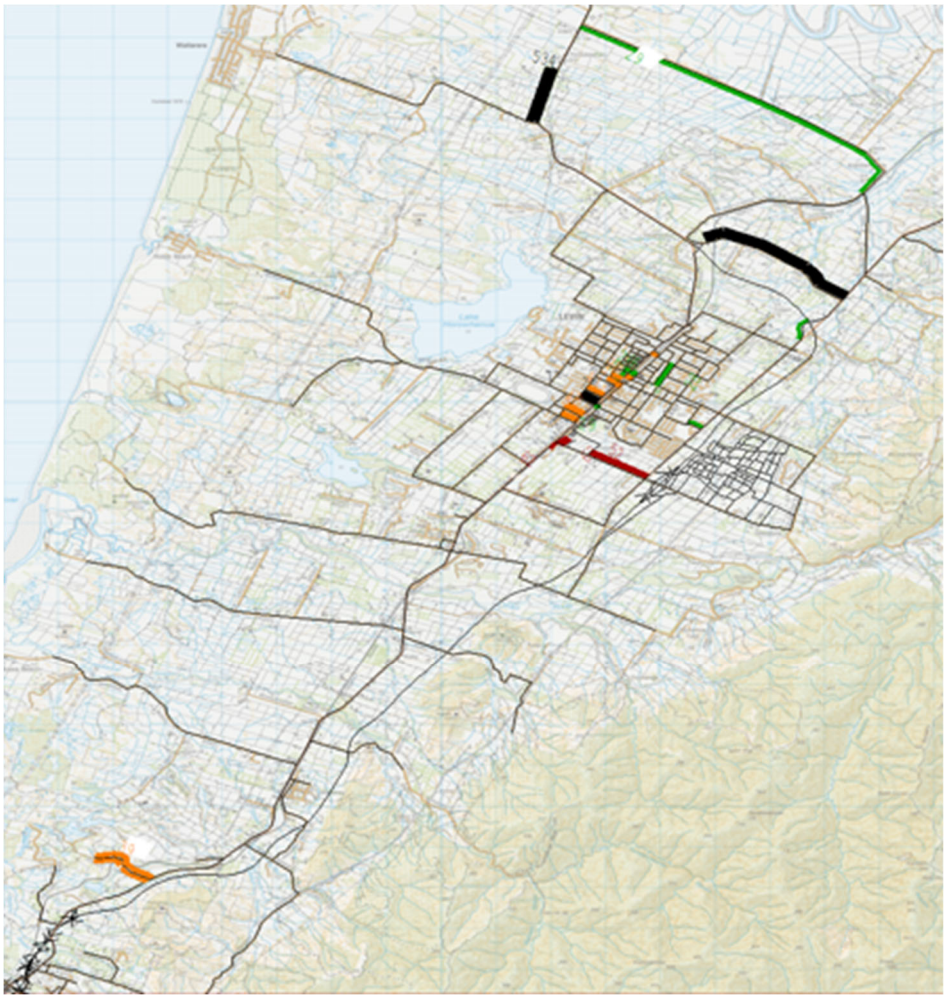
Nāku noa, nā

Caitlin Kelly, Principal Planner

Attachments:
Attachment 1: Transport Level of Service at 2039 using the 95th percentile growth scenario
Attachment 2: Traffic count data at telemetry sites at SH1, Ohua and SH57, Shannon
Attachment 3: Memo from Phil Peet, Stantec providing an assessment of the transport performance of Southern Intersection (Taylors Road)
Attachment 4: Transport links and integration with the PP2Ō Project (now open)
Attachment 5: Change in duration of inundation from Ō2NL Project at Ohau River and Waikawa Stream in 2130
Attachment 6: Updated Technical Assessment F (Hydrology and Flooding)
Attachment 7: Assessment of the proposed works at the intersection of Tararua Road and State Highway 1 and level crossing NIMT against the rules of Horowhenua District Council Plans
Attachment 8: Assessment of establishment works against the rules of Horowhenua and Kāpiti Coast District Plans

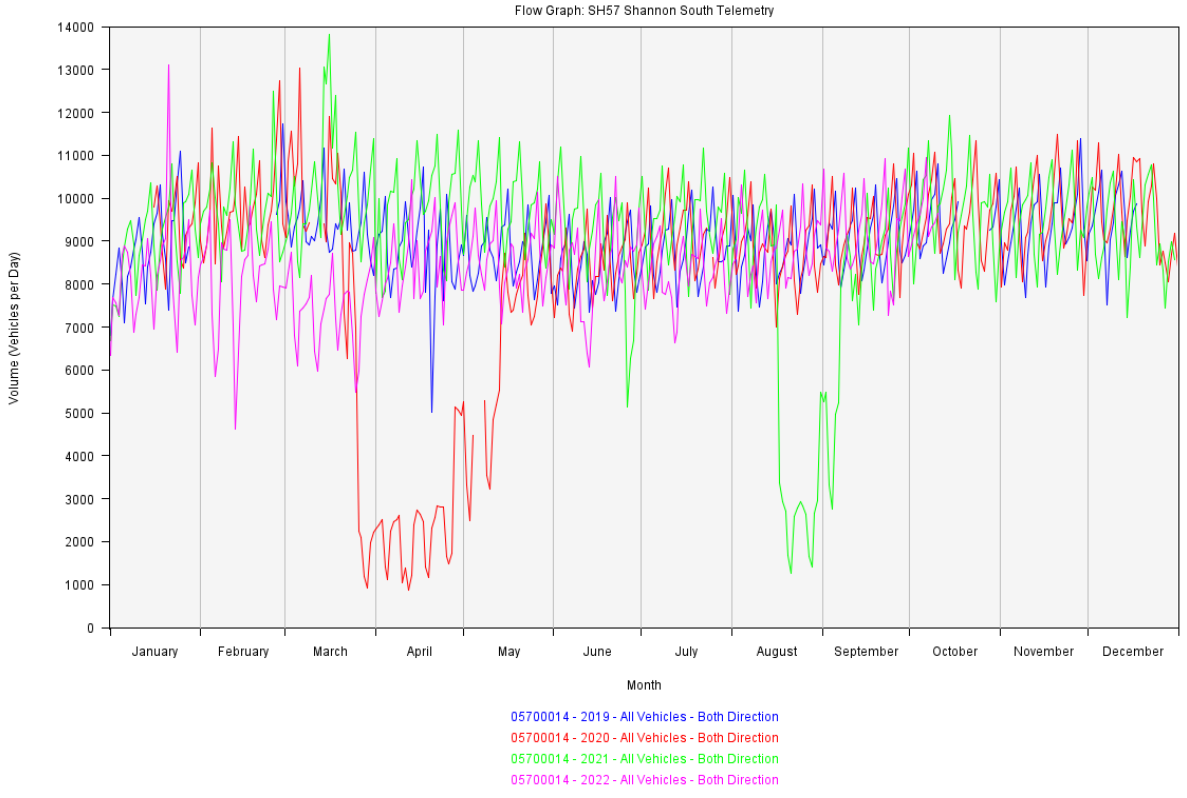
Attachment 1: Transport Level of Service at 2039 using the 95th percentile growth scenario

This figure is referred to in response to Request # 108



Attachment 2: Traffic count data at telemetry sites at SH1, Ohua and SH57, Shannon

This figure is referred to in response to Request # 109.



Attachment 3: Memo from Phil Peet, Stantec providing an assessment of the transport performance of Southern Intersection (Taylors Road)

Provided in response to Request #115

Stantec

Memo

To:	Rob Napier Waka Kotahi	From:	Phil Peet & Sam Rudge Wellington
Project/File:	310203848	Date:	8 July 2022

Reference: Ōtaki to North of Levin Taylors Road Interchange Outcomes

1 Purpose

To summarise the available evidence and rationale for including an interchange at Taylors Road as part of the main works on the Ōtaki to North of Levin (Ō2NL) project.

The two options considered in detail are shown below, with the no connection option in Figure 1 and the half interchange in Figure 2.

Figure 1: Taylors Road no connection

Figure 2: Taylors Road half interchange

Both options maintain property access to all required properties.

2 Option History and Issues Identified

Interchange Optioneering Timelines

- The interchange options report developed in mid-2020 identified principals for interchange design including location. The interchange principals and design requirements considered:
  - Current urban form
  - Future urban form
  - Environmental and cultural impacts
  - Suitable separation between interchanges and other significant structures
  - Direct impacts on well-established residential / commercial areas are to be avoided if possible
  - Interchanges need to connect to an existing road (and the existing road ideally should be of a standard and function that it serves a reasonable community catchment), and
  - Interchanges are generally not to be located where ramp entry and exits would be on tight horizontal curves, and
  - Interchanges need to be safe for all modes.
- Taylors Road was not identified as a potential interchange location at this time.
- Local road options for accessing Taylors Road were developed at high level in mid-2020 and progressed through an MCA Process The MCA process identified grade separating the current SH1 with Ō2NL with no connection between and a T intersection serving Taylors Road.
- A concurrent MCA process identified that no interchange in the Manakau area was preferred.
- In August 2020 public consultation on the MCA preferred option at Taylors Road and the lack of Manakau interchange was undertaken. This is shown in Figure 3.

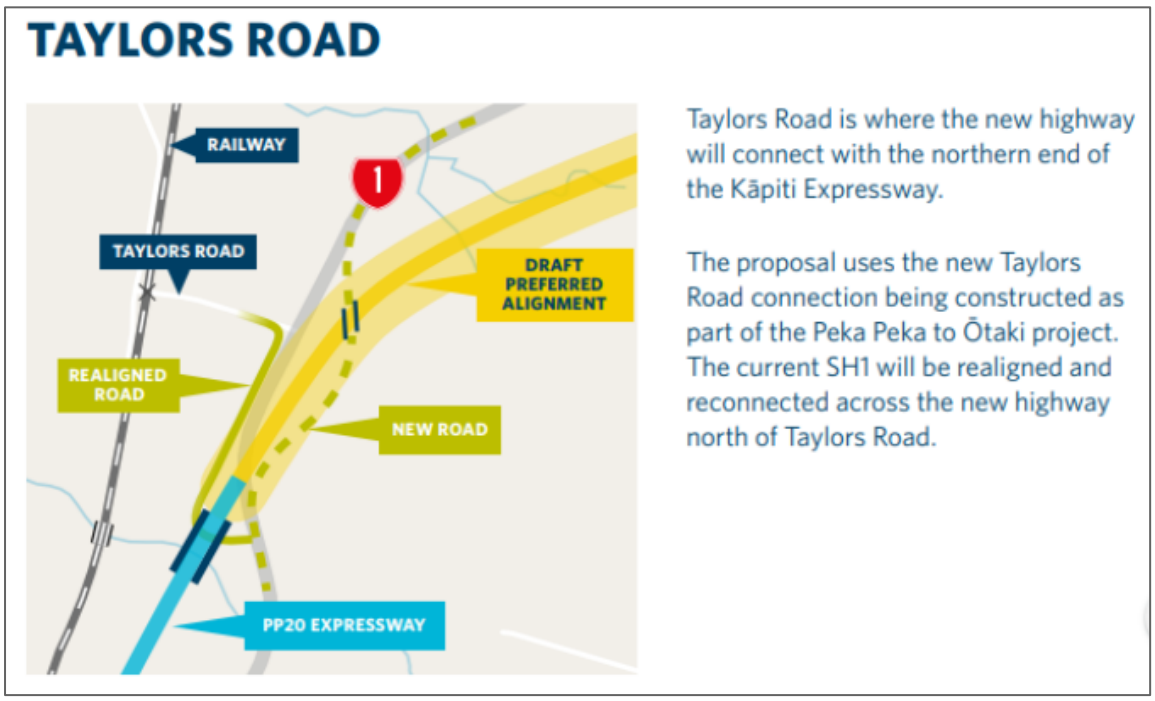


Figure 3: August 2020 consultation option

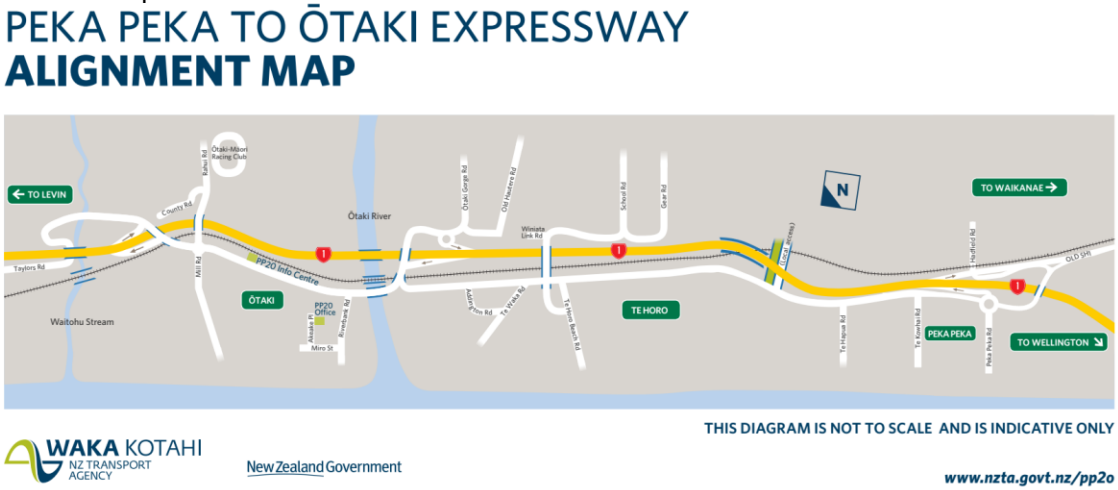
Full details for interchange requirements, and the development and shortlisting process, is outlined in the Interchange Options Report. Details of the option selection is available in the Ō2NL MCA Report.

Reference: 310203848

Identified Issues

At this stage further consideration was given to network connectivity in this area, specifically the difference between the current situation, what will be in place after PP2Ō opens and then what will happen after Ō2NL opens. The road user experience timeline is thus:

- PP2Ō will open in late 2022 with two half interchanges, south facing ramps south of Ōtaki and north facing ramps in north Ōtaki. PP2Ō will tie into the existing SH1, approximately 300m north of the Taylors Road. Once PP2Ō is operational, there will be a seamless and direct connection between PP2Ō and the existing SH1 north of Ōtaki for about 7 to 8 years. During the 7 to 8 years, traffic volumes on the "old SH1", between Taylors and Mill Roads, is likely to drop from 18,000 vpd to about 300 vpd.



- Once Ō2NL is opened, traffic volumes on this same section of the old SH1 will increase to approximately 3,000 vpd. This volume is vehicles travelling to/from Manakau and Ohau who are now having to travel through Ōtaki to access the south facing ramps south of Otaki to access SH1. It is likely that motorists accessing Manakau and Ohau would have become used to using PP2Ō (for about 7 to 8 years) and are likely to have an expectation of continuing to use the expressway to bypass Ōtaki.

Maps of this staging, and what this means for Taylors Road traffic, are presented in Appendix A.

Other issues or opportunities in this area include:

- The Ō2NL Project identifying that no interchange in the Manakau area is required, which means that there will not be another place for Manakau and Ohau traffic to access the new highway to travel south.
- The cost of a large structure to grade separate traffic
- The impact of the project on Māori land.

This led to the project team identifying an alternative option which can improve connectivity and achieve the project objectives. The timelines for several considerations which lead to the development of the half interchange are outlined below.

Design Review

In late 2020, the Design Team identified a possible option for addressing the above issues, which involved

- An additional half diamond interchange with south facing ramps near Taylors Road
- Utilising the grade-separation connection already proposed for reconnecting old SH1 to:
    - Connect northbound highway traffic more directly onto the old SH1 (through to Manakau)
    - Connect southbound highway traffic from the old SH1 (from Manakau)

The design review also concluded that this option can be delivered for no additional cost (and potentially marginal cost reduction) than the no connection option as the bridge structure can reduced in length and provide for unidirectional traffic movement only (i.e.as a southbound on-ramp), so is a smaller structure.

Waka Kotahi then progressed the option through their MCA process which found in favour of the original option with no interchange. The MCA was in favour of the half interchange for resilience and social considerations, but strongly against it in terms of visual impacts and noise impacts.

The remainder of this memo discusses those benefits and impacts.

3 Traffic Impacts

As the presence and absence of a half interchange has significant impacts on the connectivity and therefore route choice of the option, the two options were run through the project traffic model for 2039 under the 75%ile growth scenario (this model run did not have an interchange in the Manakau area). The traffic volumes north of Ōtaki are shown in Figure 4.

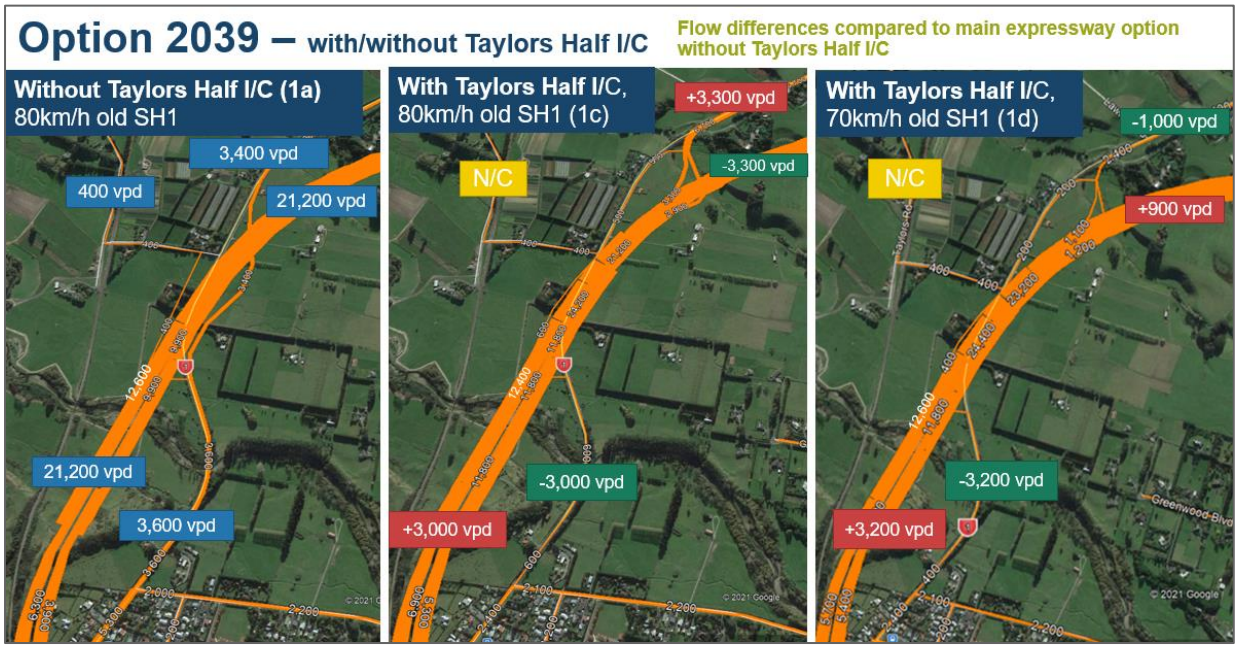


Figure 4: Traffic volume differences north of Ōtaki

It can be seen that under this scenario the half interchange removes approximately 3,000 vehicles off the current SH1 north of Ōtaki, compared to having no connection.

Reference: 310203848

It also shows the impact of the average speed on access to the north. It is known that Waka Kotahi does not use a 70 km/h speed limit, however this would be representative of the speed environment with the proposed revocation programme dropping the towns to 50 km/h and 80 km/h remaining on the fully rural sections and the perception of the new highway being a more attractive route. With this in place, traffic volumes on the old SH1 north of Ōtaki would be approximately 2,400 vehicles per day.

Further south in Ōtaki the difference is not as significant, but removes a reasonable proportion of the Ōtaki township traffic as seen in Figure 5.

Figure 5: Impacts to traffic volumes through Ōtaki township

The presence of the half interchange reduces traffic flow through the Ōtaki township, while not as significant as the impacts north of Ōtaki, at a 14% reduction it is a moderate proportion of the traffic .

In summary, in comparison to the direct option with no access, the half interchange would,:

- Remove around 3,000 vehicles per day on the stretch of old SH1 between Taylors Road and the PP2Ō north facing ramps north of Ōtaki as vehicles can use the new highway over this length
- No change in traffic on Mill Road for trips to Ōtaki Town Centre or Ōtaki Beach
- Remove around 1,000 vehicles per day on the old SH1 through Ōtaki as vehicles from the Manakau and Ohau use the new highway for longer trips south.

4 Benefits and Disbenefits

A discussion about the relative merits between options for some key considerations is outlined below:

Project Objectives

Resilience

The scoring of project objectives during the MCA process only differed in terms of resilience. Not providing an interchange scored worse due to the large distance between south of Ōtaki and Tararua interchanges, creating a large diversion back onto the existing highway. This diversion would be needed for any incident along this 20km stretch of highway. The provision of the half interchange reduces the distance travelled for some detours by approximately 4km, but importantly avoids diverting all traffic through the Ōtaki township. While the road alignment for the detour was noted to be worse than the no interchange option, it was considered that overall this was an increase in the corridor's resilience compared to the no interchange option.

The worst case from the half interchange option would be a flood event that closed the access road under the Waithou Stream Bridge at the same time as an incident occurred on the Peka Peka to Ōtaki expressway over the Waitohu Stream Bridge. This is because the access road is the diversion route. However, this is considered to be incredibly unlikely as it is two unlikely events happening concurrently. It is also an issue that will be present upon PP2Ō opening and not worsened with Ō2NL[1].

Safety

From safety perspective there are benefits to both options:

- The close proximity of the on and off ramps could lead to weaving issues, however this has been discussed with technical experts from Waka Kotahi and was judged to be acceptable given the capacity of the new highway and merge / diverge volumes.
- The presence of the half interchange removes a forecast 3,000-3,200 vehicles per day from the old highway, including approximately 1,000 vehicles per day through the township itself to access destinations to the south. This is an approximate 15% reduction in traffic which has an associated safety risk improvement particularly for pedestrians and cyclists.

Other Project Objectives

No other project objective resulted in a preference for one option over the others. However, it is noted that the project objectives purposely consider benefits and impacts highway traffic rather than detailed consideration of local access.

Other MCA Considerations

Noise and Vibration

[1] In fact it is better with Ō2NL because there will be four lanes provided meaning improved contraflow opportunity, plus the entirety of the highway is elevated through this flood catchment, which is not the case with only PP2Ō in place.

From a noise and vibration perspective the no interchange option was preferred as it avoided the likelihood of additional noise and/or vibration effects on nearby dwellings created by traffic stopping and starting at the roundabout. This is likely to affect around half a dozen properties in proximity to the roundabout, but it is noted that these dwellings will likely be experiencing a reduction in traffic noise due to most traffic moving onto the new highway.

Visual

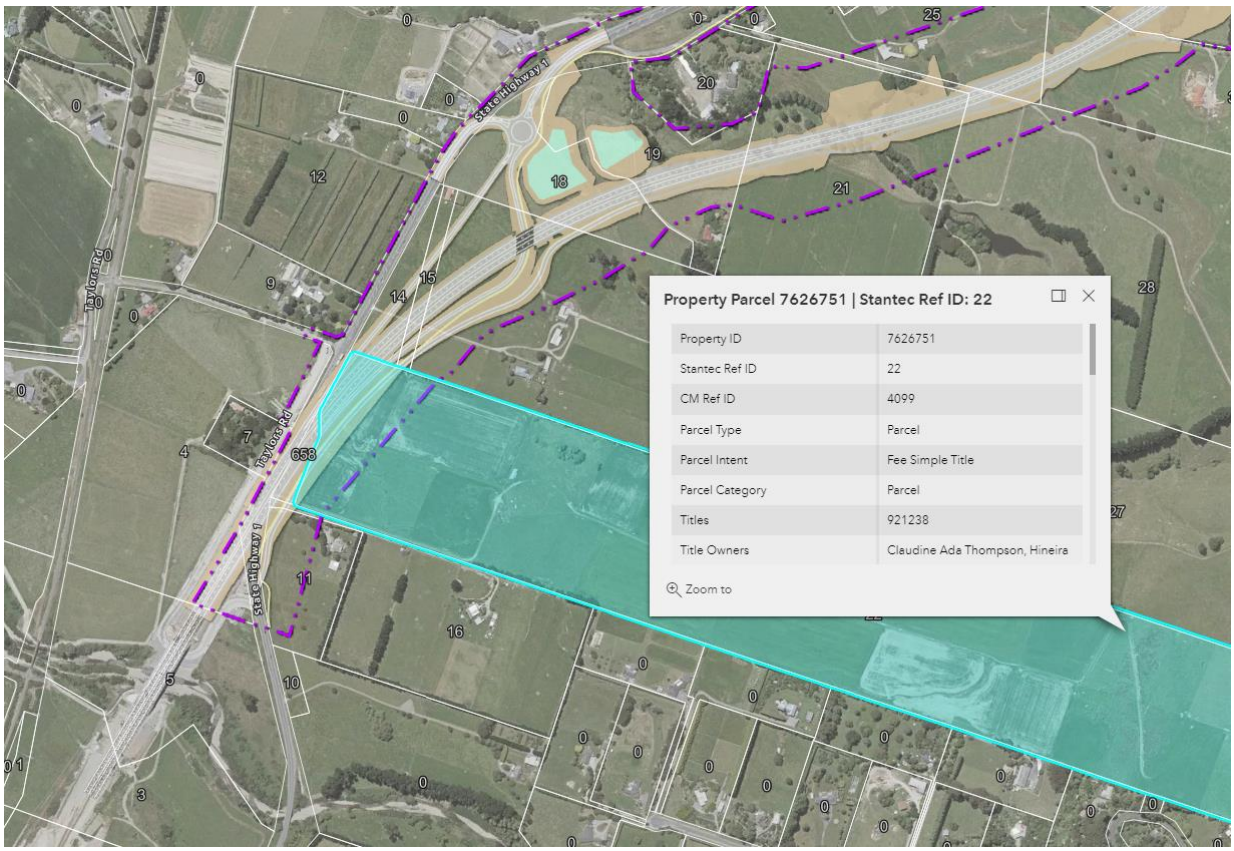
Through the MCA process it was noted that the no interchange option would result in “flowing curves”, follow the historic existing SH1, and would form part of a legible local spine linking Ōtaki, Manakau, Kuku, Ōhau, and Levin. It was judged that the half interchange was inferior as it would result in increased visual clutter (a mix of different forms with no aesthetic coherence) and the historic spine road between Levin and Ōtaki would be diverted through a circuitous and less legible route.

Other Considerations

Māori Land

The half interchange option allows a tighter curve under the new highway which enables the on-ramp and property access road to be much closer to the highway and therefore a reduction in land needed from the Māori land parcel in this area. This landowner has been affected already by PP2Ō and ideally further land take should be minimised.

Reference: 310203848



Costs

The half interchange has savings of approximately $5M compared to the no interchange option. While the half interchange has additional costs in terms of pavements and earthworks, it has reduced complexity and size for the structural elements which more than offsets the additional roadbuilding costs.

Access

There are significant access benefits from delivering the half interchange. The southern Horowhenua area will retain direct access onto the Kāpiti Expressway without needing to traverse through Ōtaki. Access to Taylors Road from the north is simpler, and there is better connectivity to the expressway and destinations to the south. Not providing the half interchange will increase traffic through Ōtaki which will have a negative amenity impact on the township.

Traffic accessing Ōtaki from Manakau and Ohau will join the new highway at Taylors Road, use a 600m stretch of PP2Ō then leave the highway north of Ōtaki. This will mean some local trips using the new highway for local trips and is not expected to create any issues.

Future Proofing

The provision of access onto the Kāpiti Expressway without traversing Ōtaki will enable growth in southern Horowhenua without an interchange in the Manakau area. It is likely that this will delay the need for an interchange in this area compared to not delivering the half interchange.

Walking and Cycling

Both options can facilitate a direct link between the PP2Ō and the Ō2NL shared use paths.

Land Acquisition

The half interchange option requires more land, but the MCA process did not identify either option as being more difficult. Both options impact on the same land parcels. As above, the half interchange is likely to have lesser effects on Māori owned land.

Alternative Route

The half interchange does not provide as higher standard alternative route in the event that the new highway is closed as it requires traffic to divert onto the route underneath the Waitohu Stream bridge. However, this is only an issue if an incident takes place on the 600m stretch between the end of the north facing ramps north of Ōtaki and the start of the south facing ramps at Taylors Road and the chances of an incident on this short stretch are very small.

As noted above, the half interchange does help mitigate the chance that SH1 traffic is required to divert through Ōtaki.

5 Council Suggested Alternative

After the development of the half interchange, a hybrid quarter interchange with full north south connectivity on the old alignment was proposed by a council representative. This was developed to ensure a two-way two-lane parallel route to SH1 throughout Kāpiti. This is outlined in Figure 6.

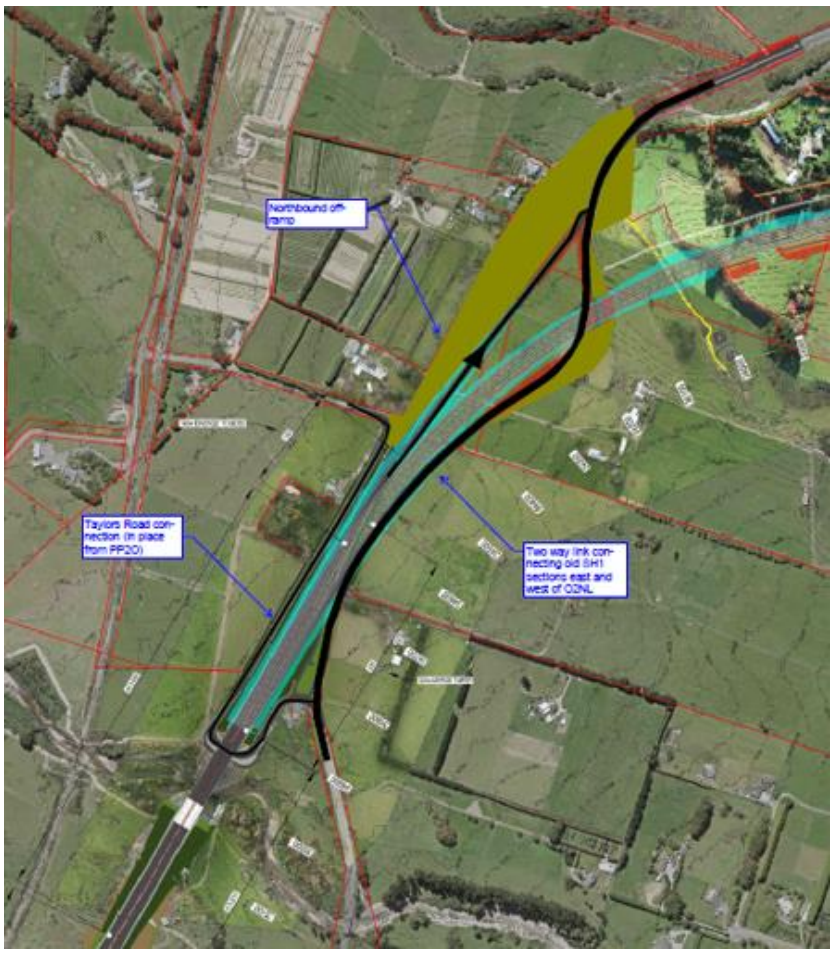


Figure 6: Quarter interchange option

Notably, to create the two-way-two lane link, it necessitated the removal of the southbound on-ramp onto the new highway.

The option was assessed at a high level but not progressed. In its favour it:

- does not have a roundabout in close proximity to the houses thereby reducing noise; and
- provides a parallel two-way two-lane road; and
- provides for north-bound trips from the highway to Manakau and Ohau

However, in terms of issues it:

- would introduce network legibility considerations as only one ramp is provided. This means that northbound trips need to take a different route to southbound trips.
- does not provide benefits to southbound travellers.
- only provides resilience benefits in one direction.
- creates a safety risk of inadvertent wrong-way use of the off-ramp by confused drivers which is more difficult to design out without a roundabout
- may have visibility issues for traffic traversing under the new highway
- requires the larger two-way link and therefore increased structural costs.

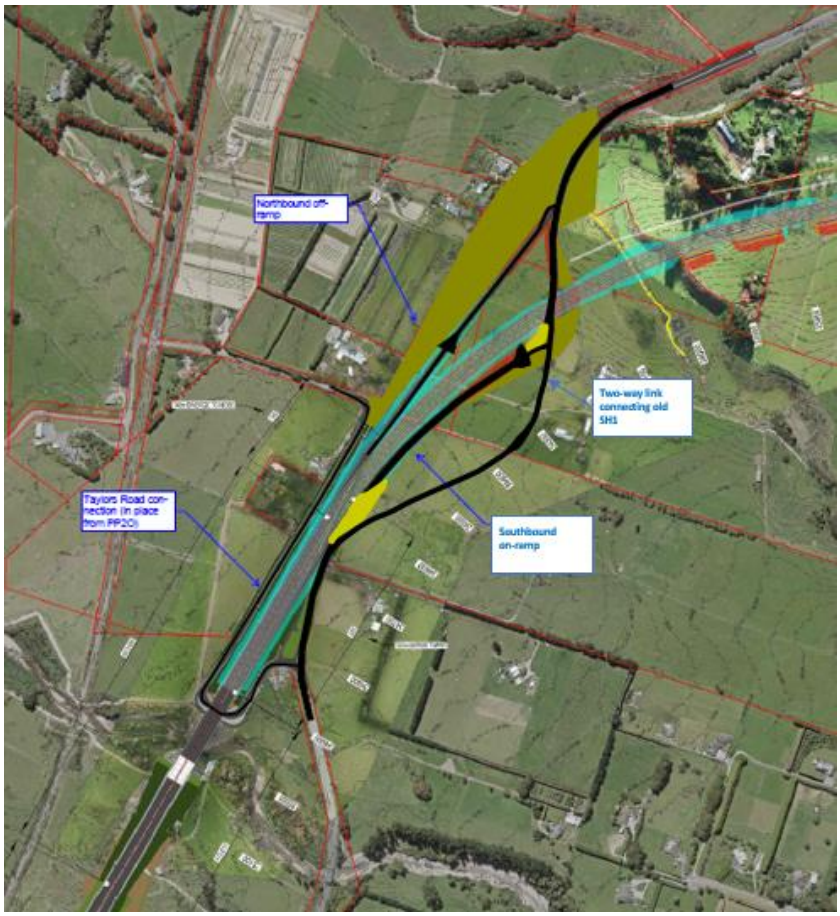
- would preclude safely being able to add a southbound onramp in the future if desired.
- results in all Taylors Road movements using the double dog leg underneath the Waitohu Stream Bridge with no alternative option if closed (such as due to flooding).

The option was discounted as while there were some benefits, it only solves half the problems and leaves half the issues. The consistency in northbound and southbound trips provided by the other two options is considered to provide a better outcome.

6 Ability to Deliver Parallel Route and Ramps

Consideration was given to whether it would be possible to deliver a two-way two land parallel route as well as south facing ramps at this location. To provide both it is likely the following would be required:

- A considerably larger structure to ensure visibility
- A realigned road that meets geometric and visibility standards, including those for the intersections.
- Increase earthworks to enable sufficient area to provide for safe turning movements onto the on-ramp
- Increased land take to enable the above works



A key concern of this option is the additional land take needed to construct this link. It would be greater than either of the previously identified options and is likely to require land outside of the previously advised 'blue haze' presented to the landowner and outside the currently identified draft designation.

This option also creates two new priority intersections onto the reconnected old SH1. Neither of these priority intersections would be Safe System compliant and on the basis of traffic speeds and the turning movement types involved, when crashes do occur at these conflict points would likely result in death or serious injury.

This option would add significant cost and high severity crash risk without adding significant benefit.

Although it would allow a parallel route, it would only improve resilience in the extremely rare scenario that both the Taylors Road diversion and Waitohu Stream bridge are closed at the same time. It would not likely address the landscape and visual concerns or the noise concerns. This is not considered to be a significant improvement in outcomes compared to the cost and impact.

7 Summary

Despite the MCA process identifying no interchange as the preferred option for the area, the DBC has progressed a half interchange. When considering just the project objectives, it was the preferred option in the MCA process, and it has other wider benefits such as maintaining the traffic pattern that road users will have become familiar with and expectant of for 7-8 years, delaying the need for a Manakau area interchange, removing traffic from the Ōtaki township and allowing more direct access to the highway from Manakau and Ohau. These effects were not considered by the MCA criteria and their exclusion from the MCA does not preclude them being used to inform the decision-making process.

The progression of a half interchange will improve the resilience of the corridor, while improving community outcomes and connectivity which is one of the project objectives and key outcomes sought by the project.

Regards,

Stantec New Zealand

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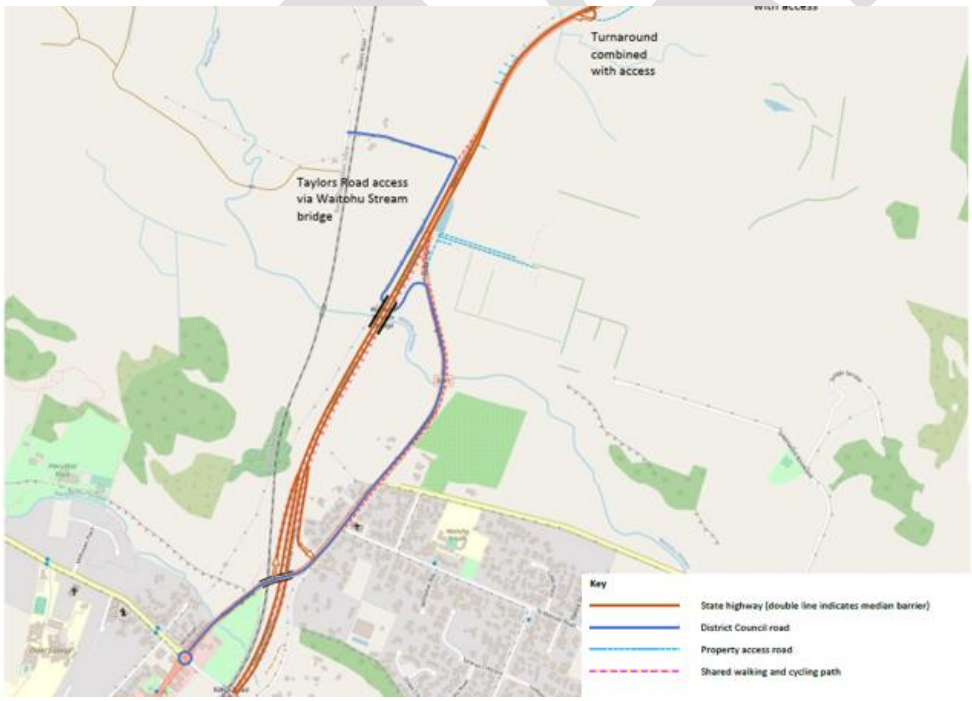
Appendix A: Staging of the Taylors Road Connections

PP2O not open

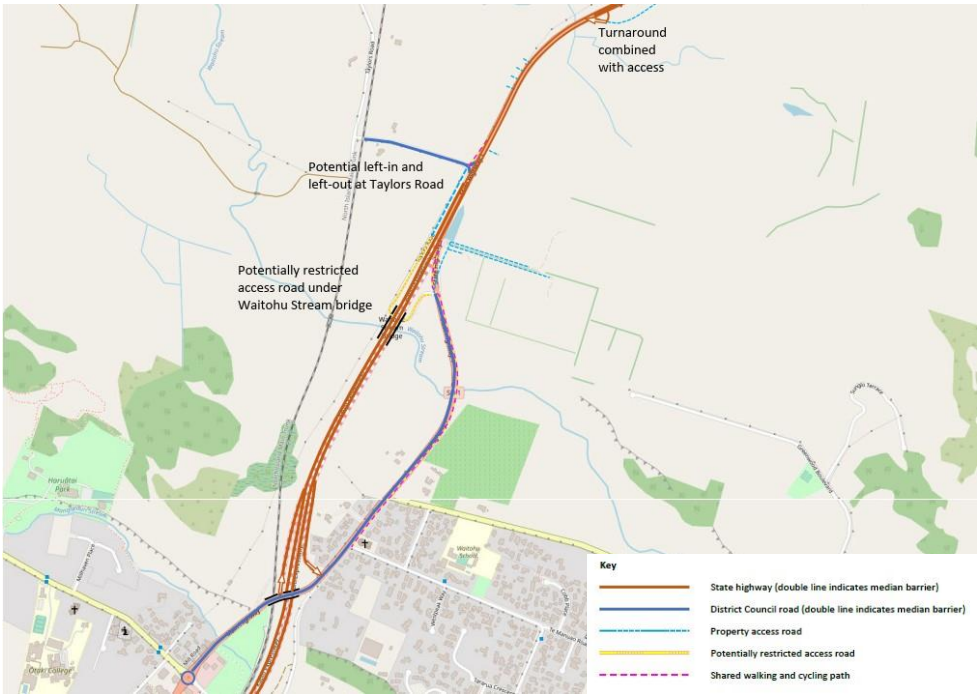
- now to late 2022
- Taylors Rd traffic uses dog legs under bridge



PP2O open

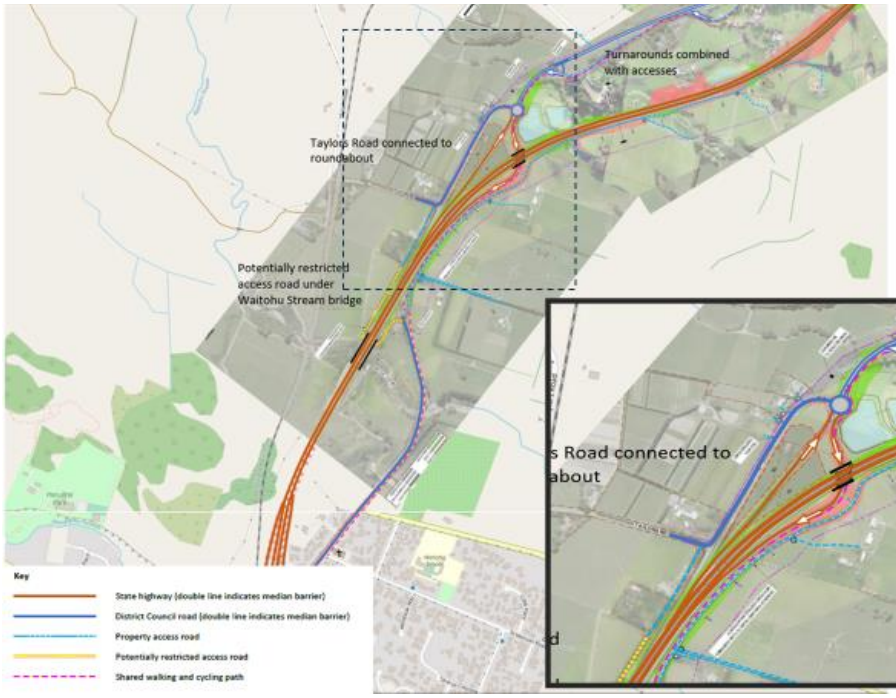
- late 2022
- Taylors Rd traffic uses dog legs under bridge
- Travel south to Ōtaki to head north on expressway

Reference: 310203848



PP2O & Safety Works

- 2023
- Taylors Rd left-in & left-out
- Turnaround at Ōtaki interchange and SH1 turnaround facility
- Bridge dog-legs closed or restricted use (walking & cycling?)

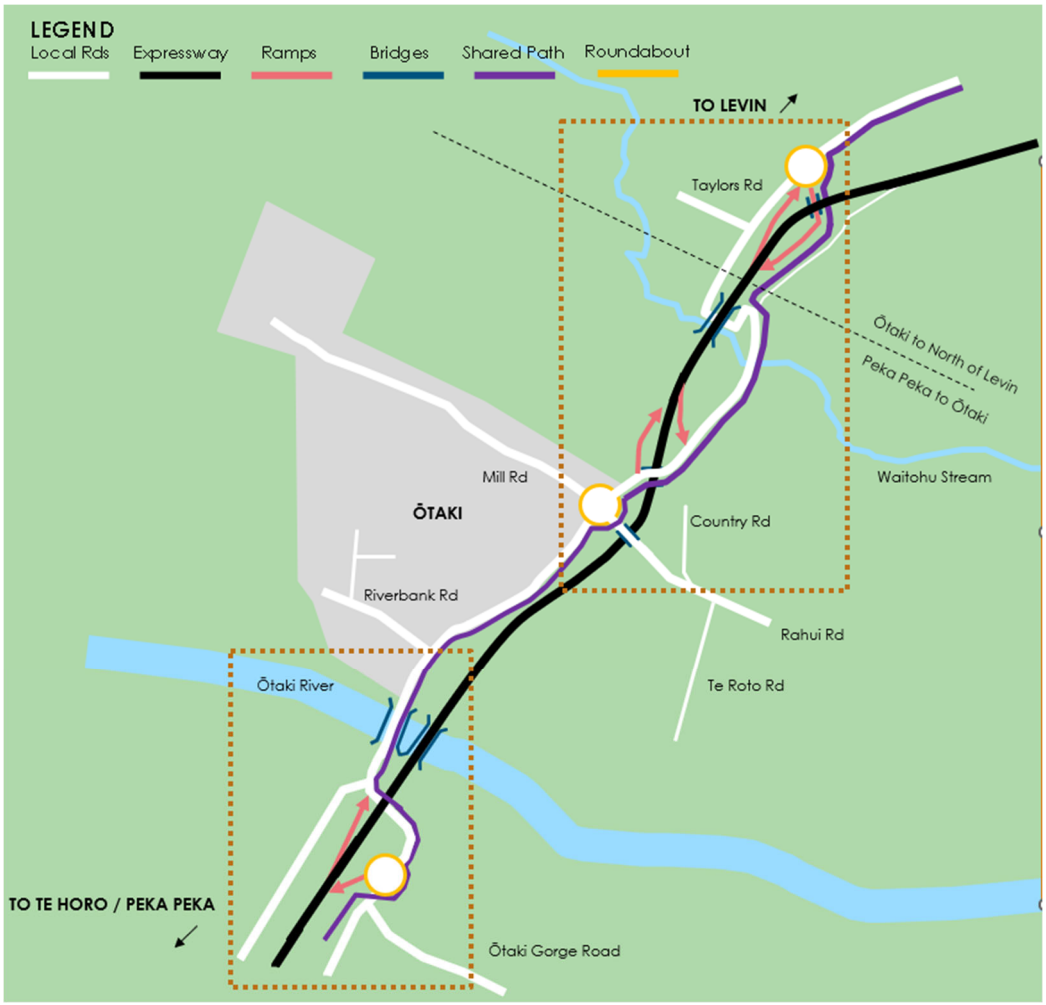


Ō2NL Open

- 2029
- Taylors Rd connected to new roundabout
- Taylors Road traffic uses old SH1 northwards, or expressway southwards
- Bridge dog-legs closed or restricted use
- Walking and cycling via connected PP2Ō and Ō2NL shared paths

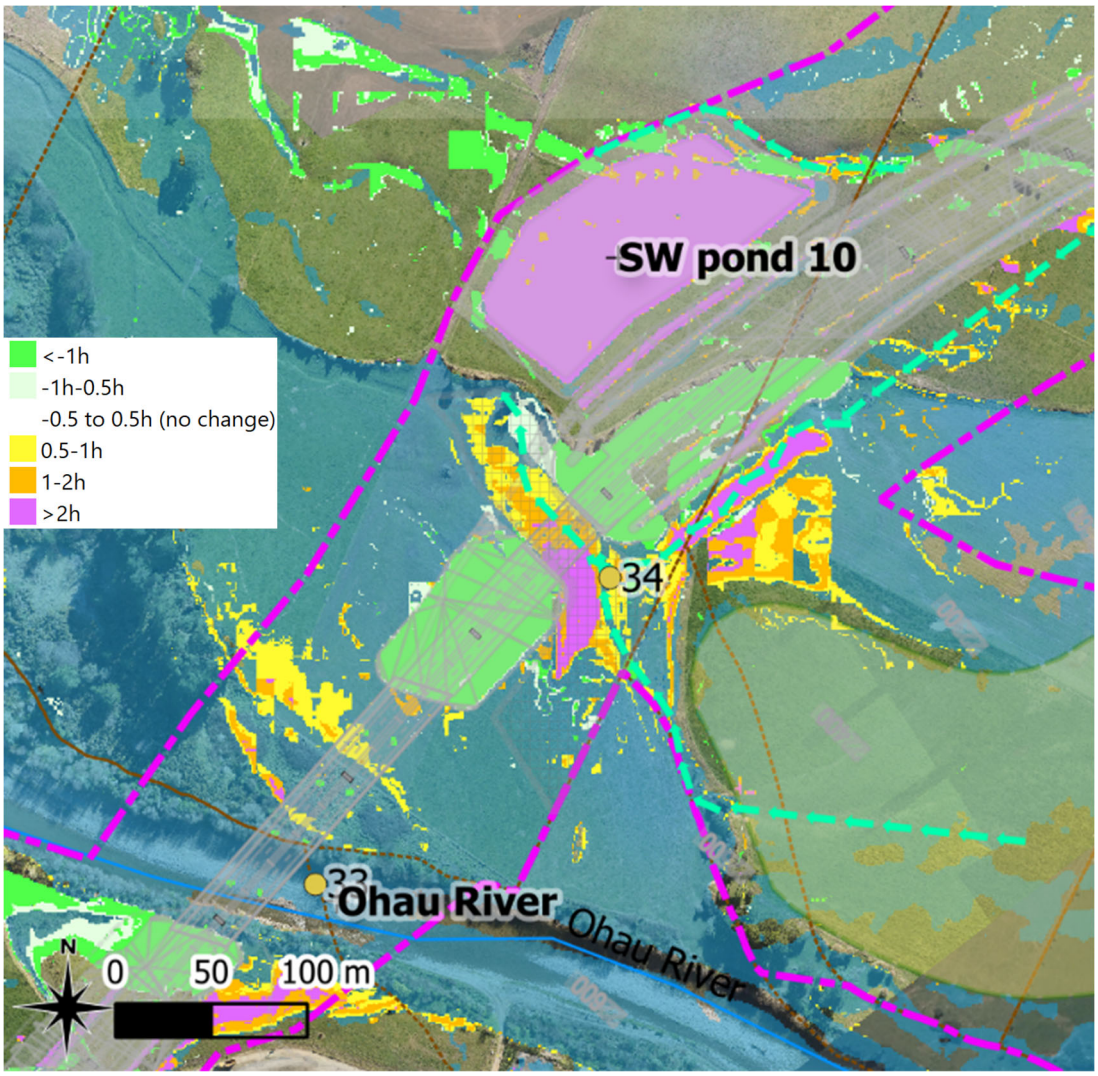
Attachment 4: Transport links and integration with the PP2Ō Project (now open)

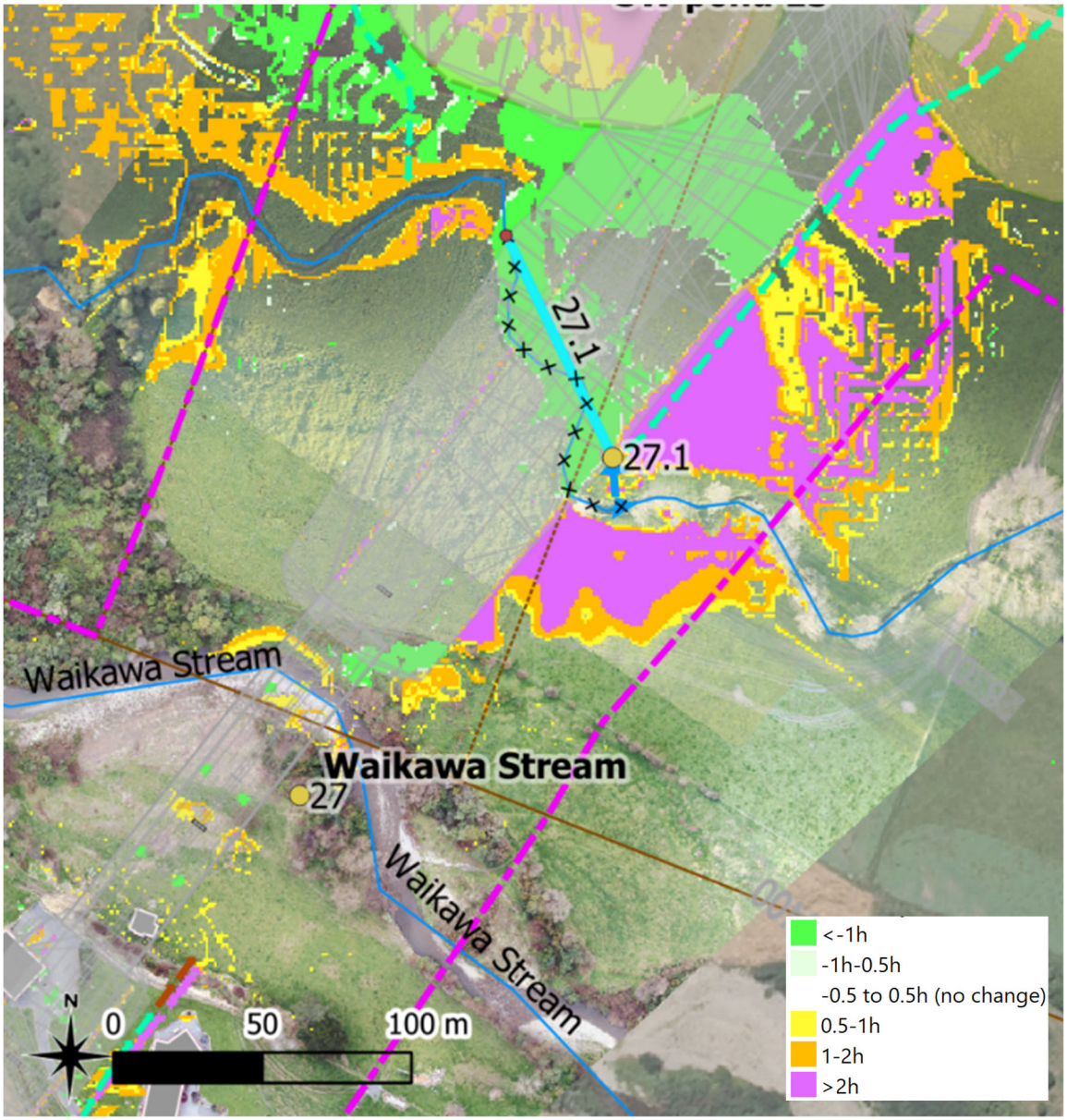
The figure below is referred to in response to Request # 118.



Attachment 5: Change in duration of inundation from Ō2NL Project at Ohau River and Waikawa Stream in 2130

The figures below are referred to in response to Request #178.

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Attachment 6: Updated Technical Assessment F (Hydrology and Flooding)

A revised version of this report has been uploaded to the SharePoint site and also to the Waka Kotahi web site: RMA applications | Waka Kotahi NZ Transport Agency (nzta.govt.nz)