Fast Track Application – Response to Comments Received

Applicant: Rotokauri North Development Limited

Project: Rotokauri North – Stage 1

Reference: FTC000059

The following comments do not require specific responses:

- Comments received from the Minister for Maori Crown Relations: Te Arawhiti.

The following tables respond to those comments which identify concerns with the proposal and/or seek amendments to the proposal. Comments in support do not require any specific response.

Table 1- response to comments from Kane & Deborah Lee

Reference	Comment Received	Applicant Response	
		Specialist/Expert providing response	**Response**
NA	*Please note we have a shallow bore at 416 Te Kowhai Road within 500 meters of Stage 5. Stage 1 shows drainage plans for this. We expect that our ground water and quality will not be upset because of any stage activities taking place during the development. Please confirm the safe guards and checks in place that ensure our safe access to ground water.*	**Groundwater:** Catherine Howell (WGA)	According to the WRC database, the bore located at 416 Te Kowhai Road is 62_115. The records show the bore is cased to 6.5 m and drilled to a depth of 10 m. As detailed in Table 6 and shown in Figure 1 of our report of our report (WGA212594-RP-HG-0002_B), the bore is 115 m from the nearest trench associated with the wastewater pipe installation. The calculated drawdown from dewatering this trench during installation of the wastewater pipe is not expected to extend beyond 12 m from the centre of the trench. Drawdown from wastewater pipe installation is not expected to exceed 0.6 m at the trench. The bore is not located within 200 m of a Sediment Retention Pond and

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		Specialist/Expert providing response	**Response**
			therefore is not likely to be affected by drawdown during construction of these features (WGA 2022). No other excavations below the groundwater table are proposed under this consent application. It is considered construction work at the site will not influence levels in this bore. In terms of water quality, the bore is upgradient of the site and water flow will not be in the direction of the bore from the site, therefore water quality of this bore is not expected to be influenced by any work on site. Monitoring is as per the regional consent conditions.
NA	*The current amount of traffic on Te Kowhai Road often makes it hard to exit and enter our property safely and the extra traffic flows caused by the development will only make this worse. It would be preferable for the speed limit to be reduced before development activities begin*	**Transport & Planning:** Leo Hills (Commute) & Renee Fraser-Smith (Tollemache)	Vehicle movements along the roading network adjoining the PC7 area (which includes the Stage 1 works area) and resultant safety effect were considered extensively as part of the PC7 process – the resulting provisions of the Decisions Version of PC7 include transport triggers identifying when upgrades to the roading network would be required for traffic safety. In relation to Te Kowhai Road / SH39, the PC7 provisions require the construction of the roundabout to serve the first development. The proposal complies with this. The applicant is unable to influence or initiate any speed changes to the state highway as they are under the control of Waka Kotahi.

Table 2- response to comments from Jennifer Connolly & Michael Forbes

Reference	Comment Received (Summary)	Applicant Response	
		Specialist/Expert providing response	**Response**
*1	Concerns with Exelby Road and vehicle movements increasing with development	**Transport & Planning:** Leo Hills (Commute) & Renee Fraser-Smith (Tollemache)	Vehicle movements along Exelby Road and its safety were considered extensively as part of the PC7 process – the resulting provisions of the Decisions Version of PC7 include transport triggers identifying when upgrades to Exelby Road would be required for traffic safety. The proposal falls below this trigger. Further, this application provides no direct link to Exelby Road (rather direct to SH39) and as per the traffic modelling undertaken for PC7 the increase is expected to be negligible without any direct connection.
*2	Concerns with dust/contaminants in water supply	**Engineering & Planning:** Jarred Stent (BBO) & Renee Fraser-Smith (Tollemache)	The proposal includes a draft Dust Management Plan, which will be finalised as a condition of consent and implemented onsite to mitigate potential effects of dust on neighbouring properties (including their water supply). As part of the works, contact details for the site managers will be made available to the neighbouring parties (as part of the conditions for the construction management plan) should any of these measures fail and complaints need to be remedied.

Reference	Comment Received (Summary)	Applicant Response	
		Specialist/Expert providing response	**Response**
*3	Concerns that given the flooding and rainfall, that the stream adjacent to the property (389 Exelby Road) would actually reduce to 80%.	**Planning:** Renee Fraser-Smith (Tollemache)	The overall approach to stormwater management onsite has included numerous attenuation devices to ensure that the runoff is maintained at 80% of pre-development flows.

Table 3- response to comments from Lorraine van Asbeck

Reference	Comment Received (Summary)	Applicant Response	
		Specialist/Expert providing response	**Response**
NA	Concerns with the SH39 roundabout, including: • Safety (road users and potential damage etc on property) • Decrease in value (noise and lighting)	**Transport & Engineering:** Leo Hills (Commute) & Jarred Stent (BBO)	In order to achieve the appropriate geometry for the roundabout the levels of the roundabout need to be lifted from the existing cambered road. The final design of the roundabout will adhere to the Waka Kotahi safety standards and includes independent safety auditing and reviews by Waka Kotahi staff to ensure that approaches meet guidelines. The roundabout itself will have an operating speed which is much lower than the 80km/hr sign posted speed limit of the state highway. Commentary on noise has also been provided by Agile consultants (and provided as an attachment) confirming that any noise increase is unlikely to be noticeable when compared to the existing noise levels.

Table 4- response to comments from Mark & Kay Moroney

Reference	Comment Received (Summary)	Applicant Response	
		Specialist/Expert providing response	**Response**
NA	Amend Hours/Days	**Engineering & Planning:** Jarred Stent (BBO) & Renee Fraser-Smith (Tollemache)	Construction hours of operation align with the already issued bulk earthworks consent from HCC, the HCDP standards, and the NZS for construction noise. These specifically mitigate construction noise and effects on neighbouring residential properties. Similarly, conditions for vibration are also proposed. The proposal includes a draft Dust Management Plan, which will be finalised as a condition of consent and implemented onsite to mitigate potential effects of dust on neighbouring properties. As part of the works, contact details for the site managers will be made available to the neighbouring parties (as part of the conditions for the construction management plan) should any of these measures fail and complaints need to be remedied. Site rubbish will be removed from site.
NA	Rubbish to be removed offsite (no dumping onsite or underground), or permits for fire		
NA	Dust control / noise control/vibration control		
NA	Houses should have rainwater tanks	**Planning:** Renee Fraser-Smith (Tollemache)	The Stormwater Discharge Report (Attachment 10) to the application specifically identified that individual lots/future houses be required to have a rainwater tank. This requirement has been reflected in the conditions of consent, which will form consent notices on the titles requiring future lot owners to install rainwater reuse tanks.

Reference	Comment Received (Summary)	Applicant Response	
		Specialist/Expert providing response	**Response**
NA	Concerns with Exelby/Rotokauri/Burbush Roads being used by construction traffic	**Transport & Planning:** Leo Hills (Commute) & Renee Fraser-Smith (Tollemache)	The Construction Management Plan included in the conditions of consent specifically requires the avoidance of Exelby Road. In terms of Rotokauri Road and Burbush Road, given the site is located directly off SH39 (which then links to SH1 and a full interchange) we consider it unlikely that these roads would be used by heavy construction vehicles. Lighter vehicles (e.g., contractors vans / utes) may use these roads; however, this is not anticipated to be significant in number and in any event will be less than when the site is fully developed as residential.
NA	HCC should lower the speed limit on Exelby/Rotokauri/Burbush Roads	**Planning:** Renee Fraser-Smith (Tollemache)	This is an HCC matter. The applicant is unable to require HCC to lower speed limits on these roads.
NA	Fencing/stock proof Perkins Bush[1]	**Planning:** Renee Fraser-Smith (Tollemache)	While Perkins Bush is **outside** of the landholdings subject to this application, the applicant has confirmed that there is no stock grazing the SNA. The applicant is aware that there was damage to a fence (due to a fallen tree) and this is in the process of being rectified – during this time the stock have been completely excluded from the paddock where the fence is damaged.

[1] Re-named as "Keruru Reserve" through PC7

Table 5- response to comments from Minister of Housing

Reference	Comment Received	Applicant Response	
		Specialist/Expert providing response	**Response**
NA	*I am aware that like any significant greenfield development, the provision of the necessary enabling infrastructure to support the proposed development is important to deliver good long term urban outcomes. We understand that Hamilton City Council (HCC) will be addressing the infrastructure requirements in the comments that they provide and I request that the panel gives careful consideration to how the infrastructure requirements will be addressed.*	**Engineering & Planning:** Jarred Stent (BBO) & Renee Fraser-Smith (Tollemache)	Implementation of the proposal does not require or rely on any infrastructure or funding being provided by HCC. The proposal includes all required infrastructure to service the development proposed. In summary: Roading: • all roading to service the development is proposed, and to be funded and constructed by the applicant. • The new intersection works with SH39, while requiring approvals from Waka Kotahi, are to be funded and constructed by the applicant. Stormwater: • A full suite of works have been proposed to manage stormwater, including works to recreate a stream channel, wetland devices, other "stream" devices, and riparian planting. All works will be funded and constructed by the applicant. • Internal reticulation is proposed and will be funded and constructed by the applicant. • On-lot devices are proposed, and will be required to be installed by future lot owners alongside the construction of dwellings.

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		Specialist/Expert providing response	**Response**
			Wastewater: • A new pump station and wastewater reticulation (including gravity main) is proposed and will be funded and constructed by the applicant. Water: Water is proposed in a staged manner due to the need for additional modelling to confirm the **timing** of additional bulk infrastructure to be constructed. All works proposed in the application are to be funded and constructed by the applicant. These include: • A new water supply network to service 150 lots including extensions of the main network • The proposed package of works also includes further extensions of the main network which will be constructed by the applicant at such time following 150 lots, and compliant with the results of the modelling.

Table 6- response to comments from Heritage New Zealand Pouhere Taonga

Reference	Comment Received (summary)	Applicant Response	
		Specialist/Expert providing response	**Response**
NA	HNZPT seeks an amendment to the pre-start meeting condition for the **Regional and District** Council Consent Conditions, to ensure advice is provided on the Accidental Discovery Protocol. All those operating on the site need to be aware of the Accidental Discovery Protocol's requirements to ensure that adverse effects on archaeology are avoided. HNZPT seeks the following amendment - <u>addition</u> "*Prior to the commencement of activities authorised by this consent on the site, the consent holder must hold a pre-start meeting that:* … *(b) includes representation from:* … *ii. the site representative, the contractor, and any other party representing the consent holder, <u>including the applicant's archaeologist who will introduce and explain the purpose of the Accidental Discovery Protocol.</u>*	**Planning:** Renee Fraser-Smith (Tollemache)	This has been updated in the conditions.

Table 7- response to comments from the Minister for Arts, Culture and Heritage

Reference	Comment Received (Summary)	Applicant Response	
		Specialist/Expert providing response	**Response**
NA	Support the changes required by HNZPT	**Planning:** Renee Fraser-Smith (Tollemache)	As above, this change has been made to the conditions.

Table 8- response to comments from Waikato District Council

Reference	Comment Received	Applicant Response	
		Specialist/Expert providing response	**Response**
NA	The effects of any activities requiring resource consent from Waikato District Council will be assessed at time of application	**Planning:** Renee Fraser-Smith (Tollemache)	The consents required from WDC have been **included** in the application for Fast Track.
NA	Traffic congestion around Rotokauri and Te Kowhai Schools is managed appropriately, Councils Roading Department are satisfied the proposal will not adversely impact on the safety and efficiency of the roading network within WDC jurisdiction	**Transport:** Leo Hills (Commute)	In terms of Te Kowhai School, this is located on Horotiu Road to the west of the subject site and in terms of Rotokauri school, this is located on Rotokauri Road to the southwest of the site. Both of these schools are some distance from the site and not on main feeder roads to Hamilton from the site. As such, the increase in traffic from the site to these schools is expected to be minimal. In fact, the Councils traffic model shows less than 5 vehicles per hour increase adjacent to these schools as a result of the proposal (indicating essentially no change).
NA	Council trust that all downstream effects of the proposal will be addressed by the Applicant	**Planning:** Renee Fraser-Smith (Tollemache)	The AEE and supporting documentation includes an appropriate assessment of downstream effects. Additional commentary on stormwater effects downstream has been included in the response to HCC and WRC comments.
NA	Council trust the Applicant will update/notify/consult with Waikato District Council of any activities that will/may impact land/people within WDC jurisdiction		No comment needed/required.

Reference	Comment Received	Applicant Response	
		Specialist/Expert providing response	**Response**
NA	Council understand we will have the opportunity to review draft conditions prior to determination of the application	**Planning:** Renee Fraser-Smith (Tollemache)	The proposed conditions have been **included** in the application for Fast Track.

Table 9- response to comments from Waka Kotahi NZ Transport Agency

Reference	Comment Received	Applicant Response	
		Specialist/Expert providing response	**Response**
Conditions	It is considered that the draft conditions be amended to reflect the legal name of Waka Kotahi which is the "NZ Transport Agency". Currently, Waka Kotahi is being referred to as "Waikai Kotahi" within the draft conditions.	**Planning:** Renee Fraser-Smith (Tollemache)	This has been corrected in the updated conditions.
Conditions	To ensure consistency with Plan Change 7, Waka Kotahi seek that the draft conditions be amended to reflect the requirement under Rule 3.6A.4.2 that the first new dwelling/lot shall provide a collector transport corridor to State Highway 39 and a new roundabout at that intersection with State Highway 39. The conditions as currently drafted do not make specific reference to the construction of the State Highway 39 roundabout prior to section 224 certification under the Resource Management Act 1991.	**Planning:** Renee Fraser-Smith (Tollemache)	This is not considered necessary as the Stage 1A works clearly includes the vesting of the road network inclusive of the roundabout (and other conditions requiring the construction of all infrastructure to be vested). However, a specific condition has been provided requiring completion of the intersection in the Stage 1A specific conditions.

Table 10- response to comments from the Department of Conservation

Reference	Comment Received (summary)	Applicant Response	
		Specialist/Expert providing response	**Response**
Effects on Lizards	• No evidence has been provided in the supporting documents that a lizard survey was undertaken in the Stage 1 area. • Copper skinks were classified as not threatened at the time of writing of the earlier report (T & T 2019). Copper skinks have since been declared threatened – declining. • The plan is to remove all existing features, including vegetation and waterways throughout the Stage 1 area. This will result in the death of any residual copper skink population. • The killing of absolutely protected wildlife is also an offence under the Wildlife Act 1953. The presence of copper skinks (a threatened species) also makes any areas of skink habitat an SNA under the Waikato Regional Policy Statement. • Recommend a new condition be added to the conditions that requires the production of a Lizard Management Plan for approval prior to any works starting.	**Ecology & Planning:** Shaw Mead (E-Coast) & Renee Fraser-Smith (Tollemache)	The copper skink is classified as ***not threatened*** (on the DoC website - https://www.doc.govt.nz/our-work/reptiles-and-frogs-distribution/atlas/atlas-details/?SpeciesID=13167). Regardless, the species appear to have been able to adapt relatively well to habitat change and are able to survive in certain urbanised environments. Copper skinks inhabit forest and open or shaded areas with adequate groundcover such as logs, rocks or long grass or deep leaf litter, and also encountered in urban areas: compost heaps, rock gardens, etc. Following on from these factors with respect to copper skink habitat, the reviewer's statement that due to the initial clearing of the site there will be "no lizards left to return into the site" is considered to be incorrect. The recolonization of copper lizards will for the most part occur from the surrounding areas, which include open paddocks, patches of exotic trees and residential properties (i.e., habitat suitable for the copper skink). A further relevant factor with respect to the disturbance of copper skinks during the development of Stage 1 is that they are a highly mobile species and the majority of individuals will move away from any disturbance and thus avoid mortality.

Reference	Comment Received (summary)	Applicant Response	
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			In addition, the applicant has already obtained resource consents across the site from both HCC and WRC to clear vegetation (which is a permitted activity) and undertake bulk earthworks. No such concerns regarding lizards were raised by either council during the processing of the application and no specific conditions of consent imposed. These consents can be implemented at any time by the applicant. Requirements under the Wildlife Act 1953 are a separate matter and, while it is acknowledged that separate approvals may be required, it is not appropriate to impose a condition on a resource consent requiring approvals under a separate statute. However, reference to this Act has been added as an advice note.
Effects on native fish, including black mudfish	• There is significant uncertainty using results from eDNA for fish species in watercourses with little or no flow. Consequently, trapping (e.g., Gee minnow traps) are the preferred method. Trapping needs to be intense to pick up mudfish, which can be very localised, especially when water levels are low, such as summer-autumn. • Attachment 16 Ecology Assessment also makes some assumptions about mudfish that	**Ecology & Planning:** Shaw Mead (E-Coast) & Renee Fraser-Smith (Tollemache)	eDNA testing was specifically requested by the WRC during pre-applications meetings, as trapping had been undertaken on the site previously (which also did not find any mudfish). Notably, the WRC comments on the applicant have not raised this as a concern, or requirement.

Reference	Comment Received (summary)	Applicant Response	
		Specialist/Expert providing response	**Response**
	are not substantiated by evidence in the document. • Recommend a new condition be added to the conditions that requires the production of a Mudfish Survey Plan for approval prior to any works starting.		It is noted that the waterways are not low, these features are dry during the summer months through into Autumn (these waterways are fed by overflow outlets from Lake Rotokauri some 1.4 km away). Although mudfish can survive periods out of water, it is unlikely that mudfish are ever present in the Stage 1 waterways. This is most likely due to the various pest fish species that inhabit Lake Rotokauri (rudd, koi carp, gold fish, catfish, brown trout and gambusia). Discussions with the WRC's freshwater fish expert (Dr Bruno David) supports the results of the eDNA testing; i.e., that mudfish are not inhabitants of the Stage 1 waterways. It is noted that the waterways for the most part will be deepened by up to 1.5 m from the existing levels; this may result in groundwater intrusion and maintain water in them throughout the year (i.e., be an improvement to the existing situation). No further testing is considered necessary. Regardless, the conditions include the requirement for a Fish Management Plan to be prepared, submitted and implemented.
SW Wetlands	• Recommend improvements or greater specificity in the design of the stormwater wetlands.	**Engineering (SW):**	The stormwater systems proposed bear no resemblance to the poor examples cited.

Reference	Comment Received (summary)	Applicant Response	
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	• Sediment and contaminant removal need to be allowed for in the design of the stormwater wetlands or they will eventually fill in and will no longer perform their design function	Eugene Vodjansky (BBO)	The stormwater treatment devices must comply with the agreed to requirements of HCC and WRC. Secondary treatment swales further enhance water quality.
Ohote Stream re-alignment	A condition should be added to specify the purpose of the Ohote Stream. Preferentially, this should be to protect and enhance the natural habitat for indigenous fish (as claimed in Attachment 16 Ecology Assessment). This condition should have measurable standards and include: • Temperature management o Water depth: The design should be changed to maintain (or create) a narrow deep channel. This is the closest proxy to a wetland channel (original natural habitat for the area) and is good for temperature regulation. If a 2-stage ditch design was implemented, a narrow and deep river channel could be set within the proposed floodplain concept from the plan, so no hydraulic functionality required for storm drainage would be lost. o Shading: Larger plants should be planted on the northern stream banks for shading (could be introduced or native trees). These do not need to be on the edge of the waterway, as long as they	**Ecology, Engineering (SW) & Planning:** Shaw Mead (E-Coast), Eugene Vodjansky (BBO) & Renee Fraser-Smith (Tollemache)	It is not considered necessary to add a new condition "specifying the purpose of the Ohote Stream"; under the district consents, the proposal includes provision to vest the stream and its margins as a drainage reserve in HCC and under the Regional consents requirements for detailed design, including a Stream Realignment Enhancement Plan and specifically that the planting needs to achieve a minimum lineal metres of stream habitat with suitable riparian margins. No further specificity is considered necessary. The proposed stream re-establishment is intended to provide a sustainable, geomorphologically appropriate, and ecologically enhanced habitat. Complexity is achieved through variation in floodplain width, bend apex pools, depressed bank areas for fringe wetlands (ideal spawning habitat), and widely varied planting. Temperature will be managed through the planting of wetland vegetation throughout the length of the stream, native trees in non-wetland portions of the floodplain, and the groundwater sourced base flow. The design has been coordinated with

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	are close enough to provide shade for part of the day.
	• Habitat complexity
	  o Bank and instream habitat: Reeds, carex and flax should be planted on the edge of waterways along both banks to provide fish cover and spawning habitat. Design should include addition of logs to the stream for habitat, hydraulic complexity and addition of carbon.
	  o Lighting: Avoid lighting near waterways, especially on bridges. Lighting can be detrimental to passage and flight paths of adult freshwater invertebrates. Lighting along waterways can also affect bats.
			ecologists and freshwater biologists on the design team and within WRC.
			
			With regard to the conditions suggested for shading as above, a specific planting plan is required at detailed design stage which will take into account the location of plants for shading, etc. No further conditions or specificity are considered necessary.
			
			With regard to the conditions suggested for bank and stream habitat, the Stream Realignment Enhancement Plan conditions already address suitable habitat.
			
			With regard to the conditions suggested for lighting, final placement will be addressed in the conditions on detailed design. No further conditions or specificity are considered necessary.
			
			Lighting design for drainage reserves where public access is provided for is a matter for EPA approval. There are a range of matters that must be considered including the safety of pedestrians, and it would be inappropriate to limit lighting where this could endanger residents through inadequate CPTED considerations. This matter was not included within PC7 as a matter of concern.

Reference	Comment Received (summary)	Applicant Response	
		Specialist/Expert providing response	**Response**
Potential Mitigation (bats)	• Inclusion of conditions requiring a Long-Tailed Bat Management Plan. • Bat Management Plan to include specific lighting conditions • Conditions banning cats.	**Ecology & Planning:** Shaw Mead (E-Coast), & Renee Fraser-Smith (Tollemache)	The applicant has already obtained resource consents across the site from both HCC and WRC to clear vegetation (which is a permitted activity) and undertake bulk earthworks. No such concerns regarding bats were raised by either council during the processing of the application and no specific conditions of consent imposed. These consents can be implemented at any time by the applicant. Requirements under the Wildlife Act 1953 are a separate matter, and while it is acknowledged that separate approvals may be required , it is not appropriate to impose a condition on a resource consent requiring approvals under a separate statute. However, reference to this Act has been added as an advice note. Lighting design for subdivision is a matter for EPA approval. There are a range of matters that must be considered including the safety of pedestrians and those travelling in vehicles. The standard lighting rules of the District Plan apply to the subsequent development of dwellings. The applicant does not consider that it is necessary to offer a blanket wide ban on cat ownership in this location. It

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			considers that this condition would be unenforceable on a subdivision consent, and against subsequent owners and occupiers of dwellings. No such rules banning cats were applied to PC7.

Table 11- response to comments from the Waikato Regional Council

Reference	Comment Received	Applicant Response	
		Specialist/Expert providing response	**Response**
3.3-3.5	*3.3 It is WRC's preference that these activities be treated as separate consents with specific authorisation numbers, certificates and consent conditions. This is consistent with WRC consenting protocol and will assist the implementation of consents.* *3.4 Notwithstanding (3.3), it is acceptable to include a schedule of general conditions which attach to all consents, particularly if/where this avoids duplication and is preferred by the applicant.* *3.5 Consent durations should reflect the temporary and permanent nature of the activities and be consistent with WRC durations for consent. The proposed consent durations require further consideration by WRC.*	**Planning:** Renee Fraser-Smith (Tollemache)	Should the Panel consider that these updates (or further updates) are necessary, the conditions can be updated accordingly. The package of works has already been split into "separate" consents as such based on the activities.
With regard to the **Rotokauri North Stormwater Discharge and Stream Corridor Re-establishment Report** (BBO, April 2022), (Attachment 10)			
4.1.2	*The report does not demonstrate that peak flow attenuation is being provided for the 2-year ARI event. Table 4-1 provides pre-development peak flow rates for the 10- and 100- year ARI events only. Flow attenuation should also be provided for the 2-year ARI event. If this design criterion cannot be achieved, then the applicant will need to justify why it cannot be*	**Engineering (SW):** Eugene Vodjansky (BBO)	While the proposed system does provide some peak flow reduction for the 2-year ARI design event, it does not match the existing condition 2-year ARI discharge. As proposed, the modelling indicates that the 2-year discharge will exceed the existing condition discharge by 0.464m^3/s, comparing proposed adjusted for climate change to the existing condition not adjusted for climate change.

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	achieved and demonstrate that no adverse effects are expected.		Comparing existing and proposed conditions, both without adjustment, the difference is 0.229m^3/s. Comparing existing and proposed with both adjusted for climate change, the difference is 0.081m^3/s. In an effort to improve the 2-year attenuation, the treatment wetland outlet weirs were modified to release flows above the EDV volume level more slowly. This approach had to be limited to the point where backwater into the stormwater pipe network did not surcharge the network to the point where the HGL was higher than 0.5m below the road surface. The on-line attenuation outlet could be narrowed to achieve the 2-year attenuation requirement, but fish passable velocities within the outlet culvert would not be achieved during a typical fish migration flow, approximated as half of the 2-year flow.
4.1.3	*The report states that the 2-year 1-hour duration event has been modelled using SWMM to determine the water quality volume. The water quality event is determined using 1/3 of the 2-year ARI 24-hour duration event, the applicant should use this to determine the water quality volume or demonstrate that the criterion used (2-year 1-hour duration event) is equivalent or more conservative.*	**Engineering (SW):** Eugene Vodjansky (BBO)	The water quality volume applied in the initial sizing of the treatment wetlands was 1/3 of the 2-year 24-hour ARI design event. For the purposes of dynamically modelling the stormwater system, the 2-year 1-hour event was used. The volume of the 2-year 1-hour event is nearly identical to 1/3 of the 2-year 24-hour event.

<table>
<tr><th rowspan="2">Reference</th><th rowspan="2">Comment Received</th><th colspan="2">Applicant Response</th></tr>
<tr><th>Specialist/Expert providing response</th><th>Response</th></tr>
<tr><td>4.1.4</td><td>The applicant has extracted rainfall data from HIRDS and has adjusted it by 2.1 deg Celsius for climate change. The applicant is requested to undertake a sensitivity test using RCP8.5 and the method outlined in the draft RITS update document (previously provided) for this site.</td><td>Engineering (SW):
Eugene Vodjansky (BBO)</td><td>The sensitivity test was applied, and the resulting discharges are in the table below:

<table>
<tr><th rowspan="2">Scenario</th><th colspan="2">2-yr flow (m³/s)</th><th colspan="2">10-yr flow (m³/s)</th><th colspan="2">100-yr flow (m³/s)</th></tr>
<tr><th>Existing</th><th>Proposed</th><th>Existing</th><th>Proposed</th><th>Existing</th><th>Proposed</th></tr>
<tr><td>No climate change</td><td>1.138</td><td>1.367</td><td>2.246</td><td>2.016</td><td>4.714</td><td>2.657</td></tr>
<tr><td>CC RCP 6.0</td><td>1.521</td><td>1.602</td><td>2.603</td><td>2.258</td><td>5.526</td><td>2.864</td></tr>
<tr><td>CC RCP 8.5</td><td>1.808</td><td>1.756</td><td>3.342</td><td>2.422</td><td>5.946</td><td>2.988</td></tr>
</table>

The 100-year discharge flow is below 80% of existing in all cases. Volume and freeboard are essentially unchanged in the 10-year and 100-year CC RCP 8.5 case.</td></tr>
<tr><td>4.1.5</td><td>No detail has been provided for the short lengths of swale that drain to and from the proposed wetlands, nor for the proposed wetland outlet configuration into the stream, or the details of the wetland themselves (plans showing the wetland components: inlet and</td><td>Engineering (SW):
Eugene Vodjansky (BBO)</td><td>The cross-sections of the stormwater reserve include sections of the secondary treatment swales. Typical cross-sections, longitudinal grades, and upstream/downstream inverts will be provided as the drawings advance. Calculations can be provided upon request, or we are happy to present the calculations and approach to Council. A very detailed 2D</td></tr>
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		Specialist/Expert providing response	**Response**
	outlet pool, banded bathymetry, etc.). Details are required for all components of the proposed stormwater management system to demonstrate a workable solution.		model of the stormwater reserve is in progress and will be used to identify any areas with erosive velocities. The 2D model will give a very good indication of the performance of the secondary treatment swales. Initial normal flow calculations indicate that the secondary treatment swales all have residence times that exceed 9 minutes in the water quality event. The internal bathymetry has been completed in the treatment wetland to an advanced preliminary level. This information has been attached with this response.
4.1.6	*There is no information about the proposed piped reticulation within the built-up areas to convey runoff to the proposed wetlands, other than the 10-year ARI design standard provided in Table 2-1. Details are required to confirm that a system is proposed, and that it has been designed appropriately.*	**Engineering (SW):** Eugene Vodjansky (BBO)	The stormwater pipe network has been designed and modelled using EPA SWMM. Due to the very flat nature of the site and the relatively high level of the constructed receiving environment, the largest nominal pipe diameter in the network is 750mm. The stormwater network design was based on initial preliminary street design. Detailed street design is now progressing, based on the stormwater network design. Minimum pipe cover is maintained. Preliminary drawings will be provided to WRC as they become available and will be provided with detailed design at engineering plan approval.

Reference	Comment Received	Applicant Response	
		Specialist/Expert providing response	**Response**
4.1.7	*There is no specific mention about how overland flows will be conveyed safely to the stream corridor in the report, details are required to demonstrate a workable solution*	**Engineering (SW):** Eugene Vodjansky (BBO)	Overland flows have been modelled with the pipe network in EPA SWMM, based on the initial street design. The street design is now being advanced to further optimise drainage. Catchpit spacing will be developed using the HEC-22 method, to manage bypass and accumulated street flow. The SWMM model will be updated to match the optimised street design and catchpit layout. All overland flow will be safely accommodated in the streets. Some increase in primary network capacity has been required to avoid excessive street flooding. NZS 4404 requirements for freeboard to building pads will be met or exceeded. Calculations, models, and worst cross-sections with flood levels (at worst case locations) will be provided to WRC as they become available and will be provided with detailed design at engineering plan approval.
4.1.8	*The applicant is unable to match pre-development peak flow rates for the 2- year ARI event, this is because the peak flow attenuation is being provided on-line, and if they throttled back the low flows then they would have velocities that are too high for fish passage through the outlet control structures under the roads. This requires further consideration and response by BBO.*	**Engineering (SW):** Eugene Vodjansky (BBO)	The response to 4.1.2 includes information pertinent to this comment. Further coordination with WRC will be required to determine if further reduction in the small increase in the 2-year discharge rate will outweigh the provision of fish passage. This decision would best be based on the summer base flow or water levels in the re-established stream. If the stream completely dries out during the summer, fish passage through the outlet structure may not be beneficial enough to warrant an exception to the 2-year flow attenuation requirement.

Reference	Comment Received	Applicant Response	
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			The levels of the re-established stream have been designed so that it should be low enough to provide minimal summertime base flow, or at least permanent water areas at the bend apex pools, providing viable fish habitat. The outlet structure can be designed to be easily retrofitted to reduce the culvert width at the inlet, if the re-established stream corridor turns out to be ephemeral. This further coordination is expected to form part of the detailed design at engineering plan approval.
4.1.9	*Regarding properties downstream of the discharge point, WRC's Integrated Catchment Management Directorate (ICM) is concerned that the waterway between Exelby and Duck Road is totally unmaintained and overgrown. ICM is asking if this has been addressed in the assessment and if any consultation with property owners has been undertaken.*	**Engineering (SW):** Eugene Vodjansky (BBO)	The short answer is yes. We are attenuating the proposed condition 100-year discharge (adjusted for climate change) to slightly less than 80% of the existing condition discharge and the 10-year proposed condition discharge (adjusted for climate change) to slightly less than the existing condition 10-year discharge. 0.065 2D 0.100 1D was used as the Manning's Roughness Coefficient for the channel in question in our downstream effects models (1D and 2D). The modelling indicates that the channels have capacity, with the increased roughness. The existing roughness, due to overgrow vegetation reduces flood flow velocities and actually helps prevent erosion. Replacing the existing undersized culvert under Exelby Road prevents overtopping of the road, along with the damage due to the flooding and erosion due to road overtopping resulting in uncontrolled flow through the properties.

Reference	Comment Received	Applicant Response	
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4.1.10	*The applicant is proposing to increase the volume of the Ohote Stream tributary by widening and deepening the stream to create a detention volume, which in conjunction with new culverts to be placed in the stream will limit peak flows downstream of the subdivision. WRC is uncertain that using the existing stream, albeit with significant ecological improvement, for peak flow mitigation is an acceptable approach. WRC would have thought that the compliance point for peak flow mitigation would be at the discharge locations to the stream, rather than in the stream downstream of the development. Further commentary from the applicant is requested to address this point.*	**Engineering (SW):** Eugene Vodjansky (BBO)	The existing site is very flat, with a network of agricultural drains, including the modified stream. The stream and drains are maintained under a drainage scheme. The predominant soil within the site is loamy fine sand, which is susceptible to erosion at fairly low stream flow velocities. Based on soil type, the stable longitudinal grade of the channel would be approximately 0.1%. It is likely that the preagricultural stream was in a shallow meandering gully or meandered in a floodplain. Significant meanders, possibly combined with occasional riffles, would have been required for nature to achieve this stable longitudinal grade. The re-established stream was designed with the same stable longitudinal grade of 0.1%, starting from the downstream invert of the existing culvert under Exelby Road. This allows the designed tributary re-establishment and associated floodway to be stable, without ongoing channel maintenance or channel armouring. In addition to the ecological and flood storage benefits, recreating a realistic and stable geomorphology avoids many of the issues associated with erosion in gullies that are being experienced in Hamilton. As regards the point of compliance, using the typical approach would have resulted in the requirement to confine the stream to provide the available land to meet the development yield HCC and the Developer are wanting to achieve. The confined stream would have had little, or no, aesthetic value. By designing a stable and geomorphologically appropriate receiving environment, the opportunity to provide significant ecological enhancement, along with improved water quality treatment, can be

Reference	Comment Received	Applicant Response	
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			blended into the development with only a small increase in the amount of land typically required for stormwater management. While this approach is not typical, it allowed the required development yield, road subgrades that are not saturated, enhanced water quality treatment, mitigation of downstream flooding effect, and ecological enhancement. Again, applying the standard approach could not achieve the above combination of benefits.
4.1.11	*The shared paths and access tracks around the ponds are below the 2-year ARI flood level. It would be useful to understand how often these will flood. These paths may not be useable during larger events limiting access to key structures such as pond outlets. It would be useful if the applicant provided some commentary advising how often the access tracks are expected to flood, supported by plotting water levels for various ARIs on the various cross sections provided in the plans, currently only the ½ 2-year level is shown.*	**Engineering (SW):** Eugene Vodjansky (BBO)	The maintenance and access paths around the treatment wetlands are above the modelled proposed condition 100-year flood. The remainder of the pedestrian and bicycle paths are above the 10-year proposed condition flood. Some informal paths might be added in lower areas. As the design has been advanced, the other flood levels have been added to the stormwater reserve cross-sections.
4.1.12	*Will the design of the outlet orifices allow fish passage between the Ohote Stream tributary and the wetlands? WRC is uncertain if this is being provided for or is required. WRC notes that the applicant states that the treatment*	**Engineering (SW):** Eugene Vodjansky (BBO)	Fish passage will not be provided to the treatment wetlands, from the Ohote Tributary. Not only does this simplify treatment wetland maintenance, it also prevents native fish from migrating into untreated stormwater runoff.

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	wetland will not be intended to provide aquatic habitat.		Proper habitat wetland is being included in and along the tributary within the stormwater reserve.
4.1.13	*The report provides little detail how stormwater will be conveyed to the wetlands other than the piped stormwater network shown on the plans in Appendix C. Overland flow paths, to cater for events larger than the primary network capacity are not shown. No analysis of flood level with the development or sizing of the pipe network and overland flow paths is provided.*	**Engineering (SW):** Eugene Vodjansky (BBO)	Please see responses to 4.1.5 and 4.1.6.
4.1.14	*The modelling undertaken assumes that the inflow to the development from the upstream catchments will be reduced to 80% of the existing 100-year ARI storm flow. This has been done on the basis that these areas will be developed at a later date and will be required to implement peak flow mitigation at that time. There is a risk that a 1 in 100-year ARI storm occurs prior to the development of the upstream catchments at some unknown future date. I would expect that designing the system to cater for existing inflows would be required, rather than relying on future upstream development to mitigate flows.*	**Engineering (SW):** Eugene Vodjansky (BBO)	The models were run without upstream development and climate adjusted rainfall, as well. There was adequate capacity in the system. No additional flooding was indicated and the downstream discharge was still 80% of the existing condition discharge without climate change adjustment.

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4.1.15	*The proposed culvert designs do not appear to comply with NES-FW 2020 Section 70.*	**Engineering (SW):** Eugene Vodjansky (BBO)	The methodology used for designing fish passage into culverts has been reviewed by NIWA, vetted by MFE and DOC, as well as discussed with Bruno David (WRC). BBO is an active member of the MFE Fish Passage Advisory Group and is work towards improving the engineering methodology applied to fish passage in culverts.
4.1.16	*The parameters provided in appendix A for couple of catchments. The parameters seem reasonable although the slopes are high for catchments Ohote 1A, 2A, 3A, 4A, 5A, 6A and 7A. It appears these catchments are for direct rainfall onto the ponds, so slope may be okay. If these are for direct rainfall onto the ponds the impervious percentage for these catchments should be 100% and the parameters for length and infiltration should be adjusted accordingly. These catchments are fairly small, and the overall impact is likely to be minor.*	**Engineering (SW):** Eugene Vodjansky (BBO)	4A, 5A, 6A, and 7A are direct rainfall into the stormwater reserve, including the treatment wetlands. Most of the sub-catchments required adjustments (correction, really) to the length, width, and slope. This actually resulted in higher discharges into the treatment wetlands. Minor adjustments were made, and the system still performed. The only measurable effect was that the 100-year proposed condition discharge to the downstream receiving environment increased to be closer to, but still less than, 80% of the existing condition discharge. The hydrology section will be updated in the report.
With regard to the **Rotokauri North Earthworks and Wastewater Installation Effects on Groundwater Report** (WGA, April 2022), (Attachment 17):			
4.1.18	*The effects on nearby bores due to dewatering during the pipeline installation, are assessed in Section 8.4 of the report. Whilst the report findings are generally supported, WRC requests a small investigation of one very shallow bore referred to as 69_1860, to ensure that this is not used for water supply. The bore depth of 3.5m suggests it is not suitable for reliable water*	**Planning:** Renee Fraser-Smith (Tollemache)	The applicant has contacted the landowners in the vicinity of this bore to try to identify its existence (notably the owners of both 321 and 301 Exelby Road). In both instances the owners confirmed that there is no such bore servicing the property.

Reference	Comment Received	Applicant Response	
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	supply, however, it would be prudent to eliminate the risk.		The applicant's farm manager also inspected the areas surrounding WRC locations, 69_1860, 62_160, 62_95 and confirms that there is no sign of any water bore or well. It is just pasture grass land. Contact has also been made with the previous farm owners (prior to the applicant taking ownership) and they have advised that it is possible that these locations may have been part of the farm application with the WRC to explore these areas for farming water source, which were never fully implemented and/or abandoned. No further investigations are considered necessary.
4.1.19	*The effects on surface water (artificial watercourses/farm drains) due to dewatering during the pipeline installation, are assessed in Section 8.4 of the report. Whilst the effects are reported to be minor, WRC considers that appropriate management measures are necessary to ensure that any freshwater ecological values are protected. This will require careful works planning/programming, and a groundwater/surface water level monitoring regime to ensure that pre-determined baseline water levels are not exceeded. This can be achieved through specific management plans, in particular a Construction Management Plan and a Groundwater Monitoring and*	**Planning:** Renee Fraser-Smith (Tollemache)	The conditions of consent have been amended to include this item.

Reference	Comment Received	Applicant Response	
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	Contingency Plan as required for other development sites in the catchment		
4.1.20	*The most influencing factor on groundwater dynamics is considered to be the permanent stormwater/drainage system, post development. This will require an assessment at detailed design stage to determine the extent of groundwater/surface water lowering and if any mitigations are necessary*	**Planning:** Renee Fraser-Smith (Tollemache)	The conditions of consent have been amended to include this item.
With regard to the **Integrated Transportation Assessment Report** (Commute, April 2022), (Attachment 14):			
4.1.24	The minimum level of information required for confirmation is: • Where the provision is going to be made for bus stops (we agreed in a previous workshop this would be in-lane bus stops). Routeings and stop locations were discussed previously but WRC requests further input. • Proposed stop locations should be indicated on a plan. If not, there is a lot of work in going back to consult with adjacent landowners, by which time there is also competition for kerb space with accesses and street furniture. • Also, a check on the swept paths for bus manoeuvring along the proposed route.	**Transport & Planning:** Leo Hills (Commute) & Renee Fraser-Smith (Tollemache)	The level of detail being requested is a matter for engineering plan approval stage and not considered necessary at resource consent stage. This was discussed and agreed at the workshops. It is noted that due to the site layout and especially the cycling provision, there are only a small number of driveways on the Collector Road (which will be the bus routes). As such, there is ample space to accommodate the in-lane bus stops at engineering plan approval stage. Notwithstanding, the conditions of consent have been amended to make this matter clearer that it is expected to be addressed at engineering plan approval stage in conjunction with consultation with the WRC.

Reference	Comment Received	Applicant Response	
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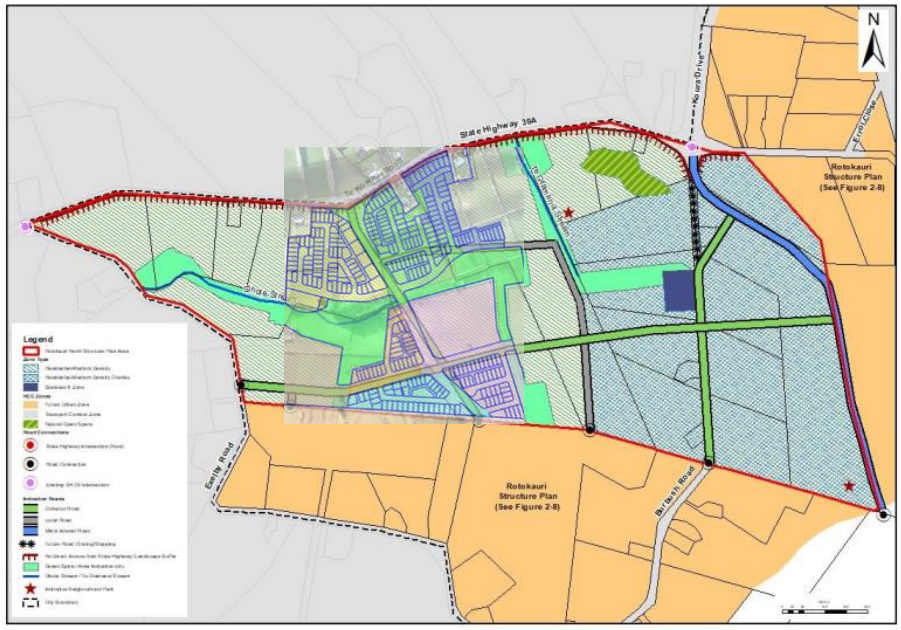
4.1.25	WRC is keen to understand how the application fits within the wider site strategy, in particular the ITS. Vehicle access arrangements do not lend themselves to provision of fixed route bus services, and in terms of infrastructure we are looking at future proofing only	**Transport & Planning:** Leo Hills (Commute) & Renee Fraser-Smith (Tollemache)	The application as regards the wider Rotokauri North Structure plan is shown below. As can be seen, the critical collector road arrangement (for bus routes) exactly align with the Structure Plan.
			
Proposed consent conditions			

Reference	Comment Received	Applicant Response	
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6.1-6.3	6.1 In general, WRC supports the proposed conditions (Attachment 30). However, several outstanding matters have yet to be resolved (4.0) and these will likely necessitate amendments to and/or additional conditions. There are also some management plan conditions which have yet to be included. For example, a Construction Management Plan (specific to all regional consents), a Groundwater Monitoring and Contingency Plan (specific to the dewatering activities), a Planting Plan (for stormwater management devices) and an On-lot Devices Management Plan (for rain tanks and/or other on-lot devices). 6.2 RMA s128(1) review clause conditions should present with regular review opportunities throughout the duration of consents. 6.3 The proposed conditions require further review by WRC, ideally following a response to the matters identified above (4.0). This would include working with the applicant to propose amendments to and/or additional conditions as considered appropriate.	**Planning:** Renee Fraser-Smith (Tollemache)	The condition shave been updated to include: • a Construction Management Plan (specific to all regional consents); • a Groundwater Monitoring and Contingency Plan (specific to the dewatering activities); • an On-lot Devices Management Plan (for rain tanks and/or other on-lot devices). The conditions already included a Planting Plan for stormwater management purposes and, where considered necessary, review clauses. Any requirement for further liaison with WRC over conditions will be at the discretion of the Panel.