

Information requested under Clause 23(2) First Schedule of the Resource Management Act 1991

Transport matters – Martin Peake, Progressive Transport Solutions 2

Stormwater and flooding matters – Amber Tsang, Healthy Waters, Auckland Council 3

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Transport matters – Martin Peake, Progressive Transport Solutions					
T1	Transport Assessment	<p>Please update the Commute Transport Assessment to the effect that is a transport assessment for a plan change as distinct from a subdivision. In particular, please provide:</p> <p>(a) a trip generation estimate for private vehicles, public transport, cycling and walking and the potential mode shift;</p> <p>(b) details of the accessibility of the site to the wider transport network;</p> <p>(c) amenities for active modes;</p> <p>(d) an assessment against the relevant national and regional plans and policies strategies (for example the AUP transport policies and the council's Transport Emissions Reduction Plan).</p> <p>Please provide this assessed against the upper number of dwellings estimated for the proposed zone.</p>	<p>The Transport Assessment Report has been prepared as though it is supporting a resource or sub-division consent and not a plan change. An Integrated Transport Assessment would typically be prepared to assess the transport effects of the proposed re-zoning of the land. Whilst it is acknowledged that the scale of the development enabled by the rezoning may be relatively limited, the transport assessment should include details of the total trip generation of the site (not just vehicle trips), public transport, cycling and walking details of the accessibility of the site to the wider transport network and amenities for active modes and public transport. It should also include an assessment of the plan change against relevant plans and policies. This information is required to understand the traffic and transport effects of the proposed change to the zoning of the land.</p>	<p>Commute ITA report produced in response and added to One Drive link as Appendix 6.</p>	<p>Section 7.4 of the revised ITA provides an assessment of the visibility from the proposed new road at its intersection with Crestview Rise. The assessment has been undertaken utilising RTS6 – Guidelines for Visibility at Driveways. However, as the new road will be a public road and will form an intersection, the assessment should be undertaken utilising the AustRoads standards for visibility at intersections. Whilst the assessment will be required at Resource Consent stage, the assessment is required to better understand the effect of the new road intersection on Crestview Rise.</p> <p>Please update the visibility assessment in Section 7.4 of the ITA for the new road intersection with Crestview Rise against the AustRoads standards rather than RTS6.</p> <p>Also please note that for the development phase, a Departure from Standard (DfS) will be required from Auckland Transport for the new road which is proposed with gradients exceeding the standard. Auckland Transport are likely to request information on the gradients on the existing Crestview Rise and Settlement Road as part of the supporting information for the DfS.</p>
T2	Access via JOAL	<p>Please:</p> <ul style="list-style-type: none"> explain the reasons for the use of JOALs to provide access to more than 10 rear lots and exceeding 100m, particularly JOAL 1; provide an assessment of the use of JOAL 1 including analysis against relevant objectives and policies of E38 (including policy E38.3(1), E38.3(10) and (11), that demonstrates that the JOAL would operate safely and provide appropriate street design and layout for the JOAL to provide access for up to 69 residential dwellings over 210m; confirm whether this JOAL layout complies with both FENZ firefighting requirements and universal access design requirements and provide evidence of consultation with FENZ on this matter; 	<p>The TIA has been prepared on the assumption that the site will be accessed by JOALs. AUP Standard E38.8.1.2 limits the number of dwellings to be accessed from a single JOAL to be 10 and not more than 100m in length.</p> <p>The proposal could result in JOAL 1 serving up to 69 lots (TIA Section 5.5, Table 2). Also the JOAL is proposed to be 210m in length. The maximum length of a JOAL in AUP Standard E38.8.1.2 and Table E38.8.1.2.1 is 100m.</p> <p>Non-compliance with Standard E38.8 is a discretionary activity. The council cannot guarantee that a consent would be granted for this degree of non-compliance and no alternative complying transport arrangement has been provided.</p> <p>Whilst the plan change is not seeking resource or subdivision consent, it is important to understand how the proposed intensive urban zone and land use</p>	<p>This has been updated and discussed with Auckland Transport (AT). The development now includes a JOAL (Jointly Owned Access Lot) and a vested public road. The grades and cross-section for Road 1 have been agreed upon and are incorporated into the civil engineering plans and report.</p>	<p>See above request relating visibility at intersections.</p>

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		<ul style="list-style-type: none"> explain what size, weight and frequency of Watercare vehicles need to access the Watercare site, how the Watercare site will be accessed through the plan change area, and the effects on residents of Watercare accessing the site through the plan change area; explain what arrangements would be in place to maintain a JOAL of this length and number of dwellings, in the long-term. <p>Please provide an example alternative transport access arrangement, including plans, that would comply with the requirements of E38.8.1.2 (1) and (2).</p>	<p>will be accessed safely and serviced with a practical internal road network that can fit within the constrained site features.</p> <p>The council's experience is that very long JOAL servicing many dwellings are less likely to function safely and efficiently and are difficult to maintain in the long term. They are less likely to provide a quality built well-functioning urban environment.</p> <p>This information is necessary to assess whether the proposed change to an urban land use can be serviced by a safe and efficient road network.</p>		
Stormwater and flooding matters – Amber Tsang, Healthy Waters, Auckland Council					
SW6	Water quality	Please confirm and clarify if all impervious areas are proposed to be treated to meet GD01/TP10 requirements as per the requirement of the NDC's water quality performance criteria.	<p>This information is required to enable a full assessment of water quality effects.</p> <p>The executive summary of the SMP suggested that stormwater quality treatment will be applied to trafficable surfaces only. This does not meet the NDC's requirement.</p> <p>Section 6.2.2 suggested that only gross pollutants from high contaminant generating activities are required to be treated. This is incorrect. Stormwater discharging from high contaminant generating car parks and high use roads are subject to requirements under Chapter E9 of the Auckland Unitary Plan.</p>	The NDC requires the treatment of all impervious surfaces including building roof catchment. It is proposed to use inert building materials to prevent the generation of contaminant-laden runoff from the proposed buildings. Additionally, while the treatment of the roof catchment is achieved in most catchments, as the treatment devices have been placed on-line; it is also proposed to provide full non-potable re-use in lieu of treatment as the Best Practical Option (BPO). This has been added to Section 6.2.2 of the SMP.	<p>It is stated in Section 6.2.3 of the SMP that 200m² of proposed Road 1 will discharge directly onto Crestview Rise.</p> <p>Please confirm the proposed treatment methods for this section of the proposed public road as per the requirement of the NDC's water quality performance criteria and the relevant policies under Chapter E1.3 of the Auckland Unitary Plan?</p>
SW11	Hydrological mitigation	Please confirm the retention and detention performance that is being proposed?	This information is required to enable a full assessment of stormwater runoff effects.	<p>Retention - Water re-use for non-potable water use such as laundry, toilet flushing and for landscaping will be provided within on-lot rainwater tanks.</p> <p>Detention - The roof areas will be detained within the on-lot rainwater tanks. The vehicles accessways discharge to the centralised stormwater pond.</p> <p>SMP has been updated to better clarify,</p>	Please confirm if the vehicles accessways for hydrological mitigation will discharge to the rain garden, instead of the stormwater pond and that the rain garden is big enough for the detention volume?
SW12	SMAF	Please provide an evaluation demonstrating if SMAF (as per the requirements outlined in Chapter E10 of the Auckland Unitary Plan) is the BPO, accounting for the existing condition	The Stormwater Management Area Flow (SMAF) overlay was not applied to sites that are future urban and rural zoned under the Auckland Unitary Plan. This was on the basis that structure planning and plan change processes are the most appropriate time	SMP has been updated to better clarify. Best methods of hydrological mitigation will be applied.	<p>Please provide photos of the existing outfall.</p> <p>Please be advised that contribution to the upgrade of the outfall is expected at the development stage.</p>

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		<p>of the receiving stream (un-named) and its vulnerability to erosion:</p> <ul style="list-style-type: none"> • Has a geomorphic assessment of the current state of stream been completed (including within the zone of influence – this may include streams downstream of the plan change area)? • Has an investigation of pre and post development flow/shear stress been undertaken to show potential future erosion risks resulting from land use change activities on natural stream receiving environments? • Please provide a pre and post development flows analysis in terms of excess shear stress. • Please provide details of the condition of the existing outlet and stream at outlet. • Please also provide information on the design of the proposed remediation works on the existing wingwall outlet (as stated in Section 6.2.5). 	<p>at which the best method of hydrology mitigation would be determined and applied. Therefore this needs to be addressed now to understand the effects of the plan change.</p>	<p>The existing wingwall is currently damaged/ affected by scour. This is a council asset and is vested public drainage. As such it is Council's responsibility to maintain and repair the infrastructure. If at the time of future EPA applications there is some upgrade or repair required to the wingwall, this will be evaluated with Council as part of that EPA application process.</p>	
SW14	Stormwater device – rain garden	<p>Please provide calculations to support sizing of the rain garden described and proposed in Section 6.2.3 of the SMP.</p> <p>Please confirm if the rain garden will be sized to include runoff from private driveways?</p>	<p>This information is required to enable assessment of the feasibility and suitability of the proposed stormwater devices. And hence to confirm if adverse effects associated with stormwater discharge will practically be able to be mitigated.</p>	<p>Treatment for new roads is provided through raingarden to treat 2% of contributing impervious catchments including the proposed JOAL, Road and driveways. Section 6.2.3 is updated within the SMP.</p>	<p>As per GD01, the rain garden will need to size for 5% of the contributing impervious catchment area to meet the SMAF requirements. Please provide information/ calculations demonstrating 5% as per GD01.</p>
SW15	Stormwater device – tank	<p>Please confirm the areas that will drain into the 5m³ water tank proposed on each allotment (as stated in Section 6.2.3 of the SMP and shown on the engineering plans)?</p> <p>Please provide calculations to support the proposed tank volume and explain what this volume will consist of i.e. how much retention, detention and/or attenuation?</p>	<p>This information is required to enable assessment of the feasibility and suitability of the proposed stormwater devices?</p>	<p>Roof areas of dwellings will discharge into the 5m³ on-lot tanks. A roof area of 90m² has been used to inform our tank sizes. Driveways are excluded and have been factored into the accessway stormwater catchment calculations.</p> <ul style="list-style-type: none"> • 3m³ Detention Volume to be released via orifice at pre-development flows • 1.5m³ Retention Volume to be used for non-potable re-use in dwellings • 0.5m³ Approx of dead storage at the bottom of the tanks (150mm depth) <p>This information will be included within Section 6.3.1 of the SMP</p>	<p>Tanks alone will not be accepted by Healthy Waters to provide for 1% attenuation from roofs as roof guttering is only sized for about a 10 yr event. Alternative roof guttering sizing cannot be enforced by a building consent.</p> <p>Please consider and provide alternative or additional mitigation for 1%.</p> <p>This needs to be demonstrated to mitigate downstream flood risk.</p>

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SW17	Stormwater attenuation	<p>According to Section 6.2.5 of the SMP, a communal stormwater pond is proposed to attenuate stormwater flows for the 1% AEP storm events and will discharge stormwater at pre-development flows.</p> <p>Please provide information of how the stormwater pond will be designed to achieve this? Calculation to support sizing of the pond is also requested.</p> <p>Please also demonstrate how stormwater flows will be conveyed to the pond (including flows from Lots 2 to 8B as shown on Engineering Plan (drawing ref: 400))?</p> <p>Will all upstream connections be sized to accommodate the 1% AEP storm events? Supporting calculations are requested to demonstrate feasibility.</p>	<p>Greenfield development enabled by this plan change proposal will increase imperviousness and therefore increase the flow rate and volume of stormwater runoff from the site.</p> <p>This information is required to enable assessment of whether it is feasible to attenuate stormwater flows from the plan change area for the 1% AEP storm events. And hence to confirm if adverse effects associated with stormwater discharge will practically be able to be mitigated.</p>	<p>Further information has been provided in the SMP and supporting calculations.</p>	<p>Healthy Waters is concerned about the potential blockage of the inlet to the proposed pipe network which leads to the stormwater pond.</p> <p>Please assess any actual and potential flood effects on downstream properties in the event of blockage and provide that information.</p> <p>Given that relying on tanks for 1% attenuation is not an acceptable option and the concerns regarding inlet blockage, please consider provision of additional attenuation ponds and respond providing information on that.</p>
SW18	Stormwater attenuation	<p>It is stated in Section 6.2.6 of the SMP that the stormwater tanks on each dwelling will be sized to attenuate and reduce stormwater flows so that there is no increase in flow rate in a 1% AEP storm event. All downpipes and upstream connections of the tank will also to be sized to accommodate the 1% AEP storm events.</p> <p>Please provide a feasibility assessment of the potential arrangement as described in Section 6.2.6 of the SMP, considering allotment sizes, setbacks and separations required between tanks, buildings, property boundaries and retaining walls etc. Supporting calculations are requested.</p>	<p>Further information is required to confirm feasibility of this proposed arrangement as the mitigation of effects is reliant on this.</p> <p>Healthy Waters' Catchment Manager has requested confirmation of the feasibility and demonstration of the ability that the downpipes and upstream connections to tanks can accommodate the 1% AEP storm events.</p>	<p>We have designed on-lot tanks to accommodate a 90m² roof area. A feasibility assessment will require details on proposed gutter types, roof pitch angles, pitch arrangement, and downpipe locations, none of which are typically detailed during the Plan Change Process. The proposed elements are standard, even for smaller medium-density developments.</p>	<p>Tanks alone are not adequate for hydrological mitigation. Please respond as per the question for SW15.</p>
SW20	Network capacity	<p>Please provide an impact assessment downstream of the site on network performance of discharging the increased volumes of stormwater runoff from the greenfield development enabled by the plan change proposed over a prolonged duration. Please confirm how any adverse effects will be avoided and/or mitigated.</p>	<p>The development of a rural area for urban land use will increase imperviousness and therefore increase the flow rate and volume of stormwater runoff from the area. Attenuation of flows will partially mitigate the effects of this land use change by limiting the peak flow. However, it does not address the increased volumes of runoff that will be generated.</p>	<p>A water reuse system is proposed for each dwelling, featuring larger-than-usual tanks (5m³). Extended storage within the pond and raingardens will be adopted during the detail design phase. This approach will help decrease discharge volume. Since the site lacks suitable infiltration options, this method is the most practical solution to mitigate both volume and extended flows.</p> <p>Attenuation will be to 80% of pre-development flow.</p>	<p>While attenuation to 80% of pre-development is considered acceptable, the concerns regarding inlet blockage is outstanding and the utilisation of tanks alone for 1% attenuation from roofs is not considered acceptable. Please respond as per the questions for SW15 and S17.</p>

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			<p>It should be noted that historically, where a Catchment Management Plan was not present the approach was to attenuate to 80% of pre-development for new development. This may be applicable for the plan change proposal.</p> <p>Where there are downstream flooding issues, peak discharges for the post development 100 year 1% AEP storm event may need to be managed to ensure that downstream flood levels are not increased. Depending on the catchment, the number of tributaries and the location of the project in a catchment, timing of flow discharges may be an issue. If so, a catchment wide study may be necessary to ensure that downstream flood risks are not increased. If there is no catchment-wide study, work done by the former Manukau City Council and overseas has indicated that limiting the peak discharge of the 100 year storm to not exceed 80% of the predevelopment 100 year storm will reduce downstream flood increase concerns. The 80% peak discharge rate reduces potential for coincidence of elevated flow downstream by extended release of the flows. The council will consider this approach as an alternative to a catchment wide study.</p>		
SW 21	Network capacity	<p>Section 1.5 suggests that the public stormwater network on Crestview Rise has no capacity for the proposed plan change area, but Section 6.2.5 states that the existing 750mm diameter pipe has capacity for flows from the proposed greenfield development. This appears contradictory. To clarify this please provide the following:</p> <p>What is the design flow for the 10% AEP event within the existing network and how much capacity remains?</p> <p>Please provide the results of an investigation into the capacity of the existing public stormwater network, to the point of discharge downstream of Opaheke Road bridge, including details of any mitigation proposed</p>	<p>This information assists in understanding the effects on the capacity of the downstream network.</p>	<p><i>"The report states that "The rural lots will capture rain from the roof and store this on site for re-use. Overflows from the tanks will discharge to the ground and flow overland." Thus, no additional flow allowance was catered for the subject site (zoned as rural)."</i></p> <p>The existing 750mm diameter pipe currently conveys pre-development peak flows. The discharge from the development will not exceed existing flow levels, ensuring the pipe's capacity is maintained.</p> <p>The development will attenuate 1% AEP events through on-lot retention tanks and a centralized stormwater pond. Post-development discharge from any outlet will not exceed the existing 1% AEP event levels. This aligns with the recommendations in the SWP and previous design reports.</p>	<p>While attenuation to 80% of pre-development is considered acceptable, the concerns regarding inlet blockage is outstanding and the utilisation of tanks alone for 1% attenuation from roofs is not considered acceptable. Please respond as per the questions for SW15 and S17.</p>

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		should available capacity not be sufficient to service the proposed greenfield development.			
SW22	Flooding	<p>There is no identification of what downstream flooding effects this greenfield development will have on the receiving environment and how the 1% AEP storm event will be discharging.</p> <p>Please provide an assessment on how the proposed land use change will affect overland flow paths and flood plains downstream of the plan change area, considering both existing rainfall and climate change rainfall.</p>	Floodplains presented in Auckland Council GeoMaps do not include impacts of the proposed greenfield development. This information is therefore required to enable a full assessment of flooding effects of the proposed land use. It should be noted that downstream floor flooding has previously occurred.	<p>The development is not located in any existing flood hazard zones. Being elevated, the site is not expected to experience flood hazards. We are aware of downstream flooding issues and are therefore managing post-development flows within the development to ensure no adverse downstream effects.</p> <p>The development will not impact overland flow paths or floodplains downstream, as it does not obstruct either. All stormwater will be managed within the development to prevent any downstream effects. A detailed design of the pond and outlet structure, including final post-development flows, will be addressed in the detailed design phase.</p> <p>Attenuation will be to 80% of pre-development flow.</p>	For sizing of the stormwater pond, please confirm if the sizing is based on an HMS model and please provide the model for review.
SW23	Flooding	The SMP proposes attenuation of the 1% AEP storm event. Attenuation may extend the duration of downstream flooding. Has coincidence of flows been considered and how will adverse effects be avoided and/or mitigated?	This information is required to enable a full assessment of downstream flooding effects.	<p>A water reuse system is proposed for each dwelling, featuring larger-than-usual tanks (5m³). Extended storage within the pond and raingardens will be adopted during the detail design phase. This approach will help decrease discharge volume. Since the site lacks suitable infiltration options, this method is the most practical solution to mitigate both volume and peak flows. Additionally, we are over attenuating the 1% AEP event.</p> <p>Attenuation will be to 80% of pre-development flow.</p>	The concerns regarding inlet blockage is outstanding and the utilisation of tanks alone for 1% attenuation from roofs is not considered acceptable. Please respond as per the questions for SW15 and S17.
SW24	Flooding	<p>Please provide a flood impact assessment of the proposed greenfield development on:</p> <ul style="list-style-type: none"> • Crestview Rise. • Kotahitanga Street. • Adjacent properties, particularly Lots 112, 113, 117, 118 and 119 as shown on the Engineering Plan (drawing ref: 400) 	This information is required to enable a full assessment of flooding effects.	<p>No existing flood hazards are present on Crestview Rise, Kotahitanga Street, or the adjacent properties. The development will manage 1% AEP rainfall events, maintaining pre-development flow rates. Stormwater discharge will be contained within the development, ensuring no discharge to adjacent properties. If any existing runoff issues are currently occurring due to slope runoff, the development of the site would improve these issues.</p> <p>Attenuation will be to 80% of pre-development flow.</p>	Please refer to comments above in relation to flood effects assessment on downstream properties in the event of inlet blockage. Please respond as per question SW17.
Ecology – Nick Goldwater, Wildlands					
E2	Lizard species information	In the written description, the report states that both skink species are classed as 'Threatened – At Risk'. This is not a conservation category. They are classed as At Risk – Declining. This	This is a matter of clarification of information.	Amended ecological report provided in response by Bioresearch's.	In the written description, the previous report had several errors. It stated that skink species were classed as 'Threatened – At Risk'. This is not a conservation category. They are classed as At Risk – Declining. This was correctly stated in Table 1. Also, the explanation and accompanying table regarding the potential status of the herpetofauna at the site was confusing as Table 1

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		<p>is correctly stated in Table 1. Also, the explanation and accompanying table regarding the potential status of the herpetofauna at the site is confusing as Table 1 lists the elegant (green) gecko (<i>Naultinus elegans</i>) rather than ornate skink as potentially present. There is a footnote to Table 1 with an asterisk for records greater than five kilometres away, but there is no corresponding asterisk in the table. The assumption is that the asterisk relates to elegant gecko, but that is unknown and requires clarification. Ornate skink should also be included in Table 1.</p>			<p>listed the elegant (green) gecko (<i>Naultinus elegans</i>) rather than ornate skink as potentially present. There was a footnote to Table 1 with an asterisk for records greater than five kilometres away, but there was no corresponding asterisk in the table. The assumption was that the asterisk related to elegant gecko, but that was unknown and required clarification. We also suggested that ornate skink should also be included in Table 1.</p> <ul style="list-style-type: none"> This information is still confusing in the revised report. The report states that databases indicate that two species are present within 5km of the site, but in Table 1, only copper skink is indicated as occurring within 5km of the site. This should still be clarified and corrected and the two species thought to be present within 5km of the site should be stated in the written part of the report. From later lines in the report, the other species more likely to be present appears to be ornate skink.