



THE PLANNING  
COLLECTIVE

21 September 2021

Jo Hart  
c/- Auckland Council  
Email: [Jo.Hart@aucklandcouncil.govt.nz](mailto:Jo.Hart@aucklandcouncil.govt.nz)

Dear Jo,

**Response to Clause 23 Request for Further Information: Private Plan Change Request – 751 and 787  
Kaipara Coast Highway, Kaukapakapa – Riverview Properties Limited**

Thank you for your letter dated 24 August 2021 requesting additional information pursuant to Clause 23 of Schedule 1 of the RMA, relating to the above application. For completeness, we provide responses in the table addressing your questions in Attachment 1.

We trust the information provided will be sufficient to address the questions raised in the further information request.

Yours sincerely

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**Attachments:**

- 1) Further Information Request - Response Table
- 2) Preliminary Site Investigation prepared by 4Sight, dated September 2016
- 3) Stantec Response Letter
- 4) Stormwater Management Plan

## Attachment 1:

### Further Information Request - Response Table



**PRIVATE PLAN CHANGE REQUEST**  
**RIVERVIEW PROPERTIES LTD – 751 AND 787 KAIPARA COAST HIGHWAY, KAUKAPAKAPA**  
**FURTHER INFORMATION REQUESTS AND RESPONSES**



COUNCIL REQUEST		REASONS FOR REQUESTS	APPLICANT'S RESPONSE
<b>Planning, statutory, and general matters</b>			
P1	<p><u>Iwi Consultation</u></p> <p>Please provide an explanation for the statements made in the section 32 report in regard to 'cultural values' when iwi views, have not been sought on the private plan change request prior to lodgement.</p>	<p><i>Section 9.4 Cultural Values of the section 32 report states that 'the proposed Plan Change will have a negligible effect on the mana whenua values of the Kaukapakapa River and Kaipara Harbour Coastal Area' and that 'the Plan Change proposal will not give rise to adverse effects on the cultural values of the Plan Change area and surrounding locality'.</i></p> <p><i>Regional Policy Statement B6 Mana Whenua Policy B6.5.2.7 requires that all plan changes provide a Maori cultural assessment.</i></p> <p><i>The section 32 report does identify the nine iwi which have an interest in the area. Section 8.3 Mana Whenua states 'we anticipate mana whenua groups will be consulted by the Auckland Council through the Plan Change process'. However, as this is a private plan change request, this will be through the notification process, rather than through consultation, where any submitters, including the iwi identified in the section 32 report, will have 20 working days in which to lodge a submission.</i></p> <p><i>It is normal practice at a pre-application meeting, if it is not clear that the requester intends to undertake iwi consultation, to provide advice that the private plan change requester undertake consultation or provide a copy of the private plan change request to the relevant iwi for their views. No pre-lodgement meeting for this private plan change request was sought.</i></p>	<p><i>The Planning Collective (21/09/2021):</i></p> <p>It is understood that the relevant iwi groups will have the opportunity to provide their views on the Plan Change proposal through the notification process, noting that Schedule 1, Section 5 and 5A of the RMA requires that a copy of the Plan Change Request is provided to the tangata whenua of the area through iwi authorities.</p> <p>Consultation was not undertaken with iwi groups prior to lodging the Plan Change Request because of the localised and small scale nature of the proposal and also because no cultural issues were identified or raised at the time of the previous larger scale, more significant development.</p> <p>It is noted that consultation was undertaken through the original subdivision which created 751 and 787 Kaipara Coast Highway. Responses were received from Manuhiri Kaitiaki Charitable Trust and Ngati Whatua who did not raise any concerns with the subdivision application.</p> <p>There are no identified sites of cultural significance identified in proximity to the Plan Change area and the surrounding land has been structure planned for an urban use, of which the Rural - Countryside Living zoning of the subject land was to retain lifestyle blocks on the periphery of the residential areas. There were no identified cultural reasons for retaining the land as Rural at the time of the structure plan or Unitary Plan process.</p>

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		<p><i>Mana Whenua consultation in regard to freshwater/stormwater is also a specific outcome of the Auckland Region-wide Network Discharge Consent (NDC).</i></p> <p><i><u>Note:</u> It is agreed that there are no known identified sites of significance shown on the AUP GIS viewer layers in the private plan change request area.</i></p>	<p>The Plan Change request is unlikely to adversely affect mana whenua sites, places, and areas of significance. However, this will be cross-checked through the Plan Change notification and iwi consultation process.</p>
P2	<p><u>National Policy Statement on Urban Development 2020</u></p> <p>Please provide an assessment which considers the following:</p> <ul style="list-style-type: none"> <li>• Definition of urban environment and whether it applies in the context of the private plan change request</li> <li>• NPS:UD Policy 1 (c)(e) and (f) in relation to 'well-functioning urban environment' in the context of the private plan change request</li> </ul>	<p><i>The section 32 report states that the private plan change request is appropriate, and consistent with, the National Policy Statement on Urban Development 2020 objectives and policies.</i></p> <p><i>The definition of 'urban environment' in the NPS:UD 'means any area of land (regardless of size, and irrespective of local authority or statistical boundaries) that:</i></p> <p style="padding-left: 40px;"><i>(a) is, or is intended to be, predominantly urban in character; and</i></p> <p style="padding-left: 40px;"><i>(b) is, or is intended to be, part of a housing and labour market of at least 10,000 people'.</i></p> <ul style="list-style-type: none"> <li>• <i>The proposed Residential – Rural and Coastal Settlement Zone applies to 'rural and coastal settlements in a variety of environments'. The objectives, policies and standards of the Residential – Rural and Coastal Settlement Zone seek to limit 'lot sizes and/or development to avoid, remedy or mitigate existing or potential adverse effects on water and land and to maintain rural and coastal character'.</i></li> <li>• <i>Map 16 (Future Urban) of the Auckland Plan 2050 identifies, amongst other matters, areas of existing areas of urban land as well as future urban areas. While Helensville to the south, has both existing urban areas and future urban areas identified, Kaukapakapa is identified as 'rural'.</i></li> </ul>	<p><i>The Planning Collective (21/09/2021):</i></p> <p>The definition of an urban environment in the NPS:UD encompasses any area of land that is, or is intended to be, predominantly urban in character; and is, or intended to be, part of a housing and labour market of at least 10,000 people. The NPS:UD does not set geographical limits for an urban environment, therefore the application of the NPS:UD in the context of this Plan Change Request is not limited to the township of Kaukapakapa but considered in the context of the Auckland region.</p> <p>The AUP:OP defines an 'urban area' as "land zoned residential or business, together with adjoining special purpose and open space zones" which encompasses the Residential - Rural and Coastal Settlement Zone.</p> <p>It is acknowledged that the subject land is currently rural, it is surrounded by residential zoned land. We agree that Kaukapakapa is not identified as growth area; however, there is also nothing that prevents zone changes being sought in other areas. The scale of this proposal is so small that it will not impact on the growth strategy and also poses no risk with respect to infrastructure provision.</p> <p>The plan change is sought to provide a better outcome on the small area of land that is surrounded by residential development. It represents an efficient and sensible outcome for the land and is in</p>

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	<p><i>Map 18 Rural also identifies Kaukapakapa as being a 'rural settlement' surrounded by 'countryside living' and 'rural production'. The Auckland Plan does state that some growth is anticipated in smaller towns and villages outside of the two identified rural nodes of Warkworth and Pukekohe.</i></p>	<p>keeping with the NPS: UD even though the land is not currently zoned urban.</p> <p>The descriptions referenced in the Auckland Plan 2050 will remain – Kaukapakapa will remain a rural settlement and will be surrounded by rural production and countryside living activities.</p> <p>An objective of the Residential - Rural and Coastal Settlement zone seeks for development to maintain the rural character of land. The existing development surrounding the Plan Change area is inherently urban, in particular the residential development immediately north, east and south of the subject land which contain residential allotments ranging in sizes of approximately 450m<sup>2</sup> - 3,000m<sup>2</sup>.</p> <p>An assessment against NPS:UD Policy 1(c), (e) and (f) is provided below.</p> <p><i>NPS:UD Policy 1 : Planning decisions contribute to well-functioning urban environments, which are urban environments that, as a minimum:</i></p> <p><i>(c) have good accessibility for all people between housing, jobs, community services, natural spaces, and open spaces, including by way of public or active transport; and</i></p> <p>Assessment: The eastern aspect of the Plan Change area is situated near to existing pedestrian footpaths along the eastern aspect of Awatiro Drive which will provide pedestrian access between the Plan Change area and the southern township. Provision for future pedestrian linkages along the Kaukapakapa River is provided immediately north of the Plan Change location. The Plan Change area has good accessibility to public transport due to the existing bus routes present east of the Plan Change area. There are also good road connections to employment areas such as Silverdale and Albany.</p>

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			<p>(e) support reductions in greenhouse gas emissions; and  Assessment: The Plan Change area is well located to public transport which promotes the use of alternative nodes of transport, and will provide small scale development adjacent to the existing residential development present within Kaukapakapa.</p> <p>(f) are resilient to the likely current and future effects of climate change.  Assessment: The predominant climate change issues for Auckland relating to increased heavy rain events, storm surges, coastal inundation, extreme heat events and droughts. The subject land is separated from the coastal environment and is not affected by coastal inundation. The land is well clear of flooding areas adjacent to the Kaukapakapa river.</p>
<b>Traffic matters – Traffic Planning Consultants Limited and Auckland Transport  Review of Integrated Traffic Assessment (Stantec)</b>			
T1	<p><u>Potential transport outcomes of rezoning</u>  Please confirm that the private plan change request is being sought to enable the development of residential 'lifestyle' dwellings rather than the wider scope of activities which are provided for in the proposed rezoning of the sites to Residential – Rural and Coastal Settlement Zone.</p>	<p><i>Table H2.4.1 of the Auckland Unitary Plan outlines a number of activities which are permitted, discretionary or restricted discretionary within the Residential – Rural and Coastal Settlement Zone, which are not considered within the ITA.</i></p> <p><i>The ITA should include a range of potential land-use scenarios, and their effects upon traffic patterns and generation if the anticipated land use includes additional activities provided for under the Residential – Rural and Coastal Settlement Zone. This would be required to understand the potential long-term transport effects which could result from the rezoning, in the context of the longer-term growth of Kaukapakapa.</i></p>	<p><i>The Planning Collective (21/09/2021):</i>  Refer to Further Information Request response from Stantec, dated 10/09/2021, provided in <b>Attachment 3</b> which outlines:</p> <p><i>It is understood that the PPC and subdivision facilitates the development of lifestyle dwellings as indicated on the concept plans, with no other activities on site. Care centre activities for up to ten people on site (excluding staff) are permitted activities not requiring a transportation assessment (A19 of Table H2.4.1 in the Unitary Plan) however the activity is still subject to the rules and standards of E27.6 in the Unitary Plan. Any future or alternative subdivision application (for activities other than those current proposed) would be supported by transport assessment at that time.</i></p>

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T2	<p><u>Scope of assessment to support private plan change request</u></p> <p>Please provide reasoning for not including the subdivision and development that could also occur on 751 Kaipara Coast Highway, Kaukapakapa.</p>	<p><i>While it is acknowledged in the Section 32 that there is 'no intention to further develop the property at 751 Kaipara Coast Highway', the assessment of traffic effects should take into account the subdivision and development that could occur on 751, not just the 16 sites proposed for 757.</i></p> <p><i>This is required to gain a holistic picture of the cumulative transport effects of the potential development that could occur under the proposed rezoning of both of the sites to Residential – Rural and Coastal Settlement Zone.</i></p>	<p><i>The Planning Collective (21/09/2021):</i></p> <p>Refer to Further Information Request response from Stantec, dated 10/09/2021, provided in <b>Attachment 3</b> which notes:</p> <p><i>The property at 751 Kaipara Coast (Lot 36) may be subdivided into three additional lots in the future. However, at this time, it is only considered as part of the PPC and not in the plans for subdivision as the existing dwelling will likely need to be retained. The trip generation associated with the three additional lots is estimated to be in the order of 5 additional trips during the peak hours (using 1.4 trips per dwelling per hour). The traffic effects from three additional dwellings would have a less than minor effect on the transport network. This is reflected in the acceptable level at which the SH16 / MacLennan Farm Lane intersection will operate as set out in Table 6-5 in the ITA (operating with LOS B for the worst movement). It is noted that 751 Kaipara Coast Highway will likely obtain access from SH16 (as per existing arrangements) and the level of service at the SH16 / MacLennan Farm Lane intersection reflects the operation of SH16. It is expected that the majority of additional traffic, though limited, will drive through this intersection.</i></p>
T3	<p><u>Section 2.1.2 Existing Road Network</u></p> <p>General comment</p>	<p><i>First paragraph – description should include that the site also has a road frontage with Awatiro Drive – not just SH16 and Kaipara Coast Highway.</i></p>	<p><i>The Planning Collective (21/09/2021):</i></p> <p>Refer to Further Information Request response from Stantec, dated 10/09/2021, provided in <b>Attachment 3</b> which acknowledges that Awatiro Drive forms part of the site frontage.</p>

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T4	<p><u>Section 2.1.3.2 Public Transport</u> Please provide more information about the standard of the public transport service including:</p> <ul style="list-style-type: none"> <li>• Frequency</li> <li>• Travel times</li> <li>• Standard of the bus stops and pedestrian access between the proposed sites and the bus stops</li> </ul>	<p><i>There is insufficient information in terms of access to, and quality of, the local bus stop. There is a lack of pedestrian paths on the state highway to the bus stop. The east bound bus stop lack any amenities e.g. shelter or seating. There is not a nearby westbound bus stop.</i></p>	<p><i>The Planning Collective (21/09/2021):</i> Refer to Further Information Request response from Stantec, dated 10/09/2021, provided in <b>Attachment 3</b> which states:</p> <p><i>Reference is made to Appendix B in the ITA for the 128 route (Helensville to Hibiscus Coast Station) map, timetable, and applicable bus stops. The frequency of route 128 is hourly, running Monday to Friday starting at 5:00am and ending service at 8:00pm. The route takes approximately 40 minutes to complete.</i></p> <p><i>As stated in Section 4.2 of the ITA, the rural nature of the site will result in a low number of pedestrian journeys and a comparatively low demand for public transport. The existing bus stop facilities near the site currently are considered to be sufficient to support the PPC and subdivision as sought.</i></p>
T5	<p><u>Section 7.1 Auckland Plan 2050</u> Please provide reasoning on how the focus areas for Auckland relates to the proposed plan change request.</p>	<p><i>While the ITA sets out the focus areas for Auckland, there is no discussion on how the proposed private plan change is consistent with these.</i></p> <p><i><u>Note:</u> The reference to 'the new draft Auckland Plan' needs updating – the plan was updated in 2018 and is no longer the 'new draft'</i></p>	<p><i>The Planning Collective (21/09/2021):</i> Refer to Further Information Request response from Stantec, dated 10/09/2021, provided in <b>Attachment 3</b> which includes an assessment of the Plan Change proposal against the Auckland Plan 2050 focus areas.</p>
T6	<p><u>Section 4.2 Pedestrian and cyclists</u> Please provide additional assessment in relation to future pedestrian infrastructure which may be required in conjunction with the subdivision and development enabled by the plan change.</p>	<p><i>The ITA should consider whether a footpath should be provided on the western side of MacLennan Farm Lane along with an extension of the footpath on the eastern side of this road to serve the bus stop on Kaipara Coast Highway.</i></p>	<p><i>The Planning Collective (21/09/2021):</i> Refer to Further Information Request response from Stantec, dated 10/09/2021, provided in <b>Attachment 3</b> which outlines:</p> <p><i>As stated previously, and within Section 4.2 of the ITA, the expected demand for pedestrian and cycle movement is low based on the nature and extent of the existing surrounding transport network for these modes. The additional effect associated with this proposal will generate negligible additional demand and does not warrant extension of the footpath network. The existing pedestrian infrastructure is</i></p>




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			<p>considered acceptable for this development (for 751 and 787 Kaipara Coast Highway). The walkway connection between Awatiro Drive and South Avenue allows access for pedestrians to walk to the nearby bus stops; and the footpaths on Awatiro Drive and MacLennan Farm Lane will sufficiently cater for pedestrians and cyclists.</p>
T7	<p><u>Section 7.2 GPS on Land Transport Funding</u></p> <p>Please provide an explanation on how the GPS relates to the proposed plan change request</p>	<p>While the ITA sets out the priorities, there is no discussion on how the proposed private plan change is consistent with this plan.</p> <p>This section also needs to be updated to reflect the current GPS on land transport 2021/2022-2030/2031.</p>	<p>The Planning Collective (21/09/2021):</p> <p>Refer to Further Information Request response from Stantec, dated 10/09/2021, provided in <b>Attachment 3</b> which notes:</p> <p>The Government Policy Statement on Land Transport 2021/22 – 2030/31 outlines the four strategic policies: Safety, Better Travel Options, Climate Change, and Improving Freight Connections. The development's alignment with these policies is summarised as follows:</p> <ul style="list-style-type: none"> <li>• Safety – the low trip generation of the development, as well as the road safety effects (or lack thereof) outlined in section 3.2 of the ITA, will not have any negative impact on the safety environment in the vicinity of the site.</li> <li>• Better Travel Options – public transport is currently provided, as well as connections for pedestrians and cyclists.</li> <li>• Climate Change – the connected public transport, pedestrian, and cyclist network previously mentioned facilitates for sustainable travel modes consistent with the expectations of such modes in this general vicinity.</li> <li>• Improving Freight Connections –The PPC will not accommodate nor generate significant freight activity; however, current road infrastructure will be used by the development and is considered adequate for any residential-based freight connections/deliveries to and from the wider transport network.</li> </ul>

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T8	<p><u>Section 7.3 Auckland Regional Land Transport Plan</u> Please provide an explanation on how this RLTP relates the proposed plan change request</p>	<p><i>While the ITA summarises what the RLTP is, there is no discussion on how the proposed private plan change request is consistent with this plan.</i></p> <p><i>This section also needs to be updated to reflect the current RLTP 2021-2031</i></p>	<p><i>The Planning Collective (21/09/2021):</i> Refer to Further Information Request response from Stantec, dated 10/09/2021, provided in <b>Attachment 3</b> which states:</p> <p><i>The Regional Land Transport Plan 2021 – 2031 outlines the pathway forward for responding to Auckland’s transport challenges, shown in Figure 1. It is considered that with the proposed development, sustainable travel choices (active modes, public transport) are provided for with existing infrastructure. This allows for mode choice, as well as reduction in greenhouse gas emissions. Access and connectivity of the site is also adequate with the bus route 128 connecting to Hibiscus Coast. Safety was also considered in the ITA in section 2.3, with the low trip generation of the site not deemed to exacerbate any negative effects on the road network.</i></p>
T9	<p><u>Section 7.4 Auckland Regional Public Transport Plan</u> Please explain how this plan relates to the proposed plan change request</p>	<p><i>While the ITA summarises what the RPTP is, there is no discussion on how the proposed private plan change request is consistent with this plan.</i></p>	<p><i>The Planning Collective (21/09/2021):</i> Refer to Further Information Request response from Stantec, dated 10/09/2021, provided in <b>Attachment 3</b> which states:</p> <p><i>It is considered that the existing public transport infrastructure will adequately serve the proposed development. The existing walkway to the nearby bus stop, as well as footpaths near the site allows for more people to access the 128 bus service. The development is therefore well connected, while meeting customer needs and encouraging an increase in public transport mode share.</i></p>
T10	<p><u>Section 7.5 Auckland Unitary Plan</u> Please provide an assessment against B3.3.1 (Transport objectives)</p>	<p><i>The ITA refers to the objectives of E27.2. However, this does not encompass the regional policy statement objectives of B3.3.1.</i></p>	<p><i>The Planning Collective (21/09/2021):</i> Refer to Further Information Request response from Stantec, dated 10/09/2021, provided in <b>Attachment 3</b> which outline:</p> <p><i>B3.3.1 in the Unitary Plan outlines the following objectives:</i> <i>“1) Effective, efficient, and safe transport that:</i></p>

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			<p>a) supports the movement of people, goods and services;</p> <p>b) integrates with and supports a quality compact urban form;</p> <p>c) enables growth;</p> <p>d) avoids, remedies or mitigates adverse effects on the quality of the environment and amenity values and the health and safety of people and communities; and</p> <p>e) facilitates transport choices, recognises different trip characteristics and enables accessibility and mobility for all sectors of the community.”</p> <p>It is considered that the development aligns with these objectives. The existing footpaths and bus service in the vicinity of the site enables mode choice and supports the movement of people with active modes. As outlined in section 3.2 of the ITA, the development of 16 lots (plus the three additional lots associated with 751 Kaipara Coast Highway, for up to 20 lots) enabled by the PPC is not considered to have any adverse effects on the safety of the road environment in the vicinity of the site, leading to a safer setting for the community. The less than minor effect associated with this small scale of development is apparent from the SH16 / MacLennan Farm Lane intersection operation results as set out in Table 6-3 to 6-5 in the ITA.</p>
T11	<p><u>Section 7.6</u></p> <p>Please provide the analysis of the key policies and plans for Auckland (paragraph 1) that shows how it was concluded that the private plan change request is consistent with the various plans included in the ITA.</p>	<p><i>The ITA has not shown how the proposed private plan change requests fits in with the key policies and plans outlined in the ITA. It is not clear how the plan change will provide for better integration into the wider transport network.</i></p> <p><i>Six paragraph – Kaukapakapa is considered to be a rural settlement in the context of the AUP and the Auckland Plan, so this proposal should not be described as development adjacent to an existing town centre. The ITA has not established that from a transport perspective, the plan change assists in meeting the AUP objectives for a quality compact form.</i></p>	<p>The Planning Collective (21/09/2021):</p> <p>Refer to Further Information Request response from Stantec, dated 10/09/2021, provided in <b>Attachment 3</b> which states:</p> <p><i>As discussed above, the proposed development aligns with the overarching themes outlined in the GPS, RLTP, and RPTP. Providing a connection to the wider transport network, the development will use currently existing infrastructure to sufficiently connect the site to the wider transport network. This includes existing pedestrian provisions</i></p>

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		<p><i>Final paragraph – the ITA has not established ‘the above assessments show that the PPC is generally in alignment with the overarching themes and strategic priorities of the transport plans and policies discussed above’.</i></p> <p><i><u>Note:</u> It is considered that the comment about the shortage of residential land in the area (paragraph 2) is outside the scope of an ITA. Similarly, the fourth paragraph about retaining a rural built character.</i></p>	<p><i>connecting to the bus stop and 128 bus service, as well as the current road infrastructure in the area, connecting the site to the wider Auckland area.</i></p>
T12	<p><u>Waste collection and other servicing</u></p> <p>Please provide confirmation that the Jointly Owned Access Lots (if to be utilised by waste collection and other service vehicles) will be fit for purpose.</p>	<p><i>While the ITA states that future parking and loading provisions for the new development will be in accordance with the AUP provisions, there is no information provided in relation to waste collection arrangements.</i></p> <p><i>Will waste collection be undertaken by public or private means? Will waste collection vehicles require access within one or both JOALs? If this is the case, will the JOALs be fit to accommodate appropriate sizes of vehicles and manoeuvring arrangements, with regards to gradients and the no exit configuration of the JOAL serving lots 1, 2, 3, and 5?</i></p> <p><i><u>Note:</u> It is accepted that the technical level details, such as vehicle tracking and compliance with the AUP Transport Chapter requirements would be expected to be provided at a later stage.</i></p>	<p><i>The Planning Collective (21/09/2021):</i></p> <p>Refer to Further Information Request response from Stantec, dated 10/09/2021, provided in <b>Attachment 3</b> which details that:</p> <p><i>This will be further explored in the detailed design stage. It is considered that the JOAL is wide enough (8m) to accommodate a rubbish pick-up truck. The flat topography of the site would also be advantageous ensuring efficient waste collection.</i></p>
<b>Contaminated land – Ruben Naidoo, Contamination, Air and Noise, Auckland Council</b>			
CL1	<p><u>Preliminary Site Investigation</u></p> <p>Please provide the previous PSI report (4Sight, September 2016) for review.</p>	<p><i>The PSI executive summary states that the additional PSI provided for the private plan change request ‘should be read in conjunction with PSI completed by 4Sight in 2016’.</i></p>	<p><i>The Planning Collective (21/09/2021):</i></p> <p>Please refer to <b>Attachment 2</b> which contains the Preliminary Site Investigation Report prepared by 4Sight Consulting, dated September 2016.</p>
CL2	<p><u>General comments (not clause 23 matters)</u></p>		<p><i>The Planning Collective (21/09/2021):</i></p> <p>This is acknowledged and will be addressed through any future development of 751 Kaipara Coast Highway.</p>

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	<ol style="list-style-type: none"> <li data-bbox="197 209 1330 300">1. If any future subdivision, change of land use or soil disturbance is proposed at 751 Kaipara Coast Highway, further consideration to the NESCS and the AUP:OP will be required to support consenting requirements, and</li> <li data-bbox="197 325 1330 416">2. The location of the concentration of lead exceedance in a single sample collected from the truck stop area at 787 Kaipara Coast Hwy, needs to be identified in the future subdivision and earthworks on the site.</li> </ol>	<p data-bbox="1384 240 2141 379">The former truck stop area at 787 Kaipara Coast Highway was located within the north-western aspect of Lot 1 DP 523159. MacLennan Farm Lane and Awatiro Drive have been constructed over parts of the former truck stop.</p> <p data-bbox="1384 427 2141 644">The soil testing undertaken as part of the PSI report (4Sight, September 2016) provided as <b>Attachment 2</b> identified that Sample Site KC4 located downgradient of the truck water blasting area contained concentrations of lead which exceeded the NES guideline for rural/lifestyle block land use. The location of sample KC4 is shown in the below image:</p>  <p data-bbox="1384 1305 2141 1407">Section 5 of the PSI report (4Sight, July 2021) outlines that <i>“In addition, the concentration of lead in a single sample collected from the truck stop area at 787 Kaipara Coast Hwy was above the NESCS SCS for rural</i></p>

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			<i>residential living. The location of this sample has now been covered by an access road into the Site."</i>
<b>Stormwater and flooding matters – Healthy Waters</b>			
HW1	<p><u>Stormwater and region-wide network discharge consent</u></p> <p>Please provide clarification in regard to the proposed extension of the stormwater network (installed and vested as part of Stage 1 and connects with the Auckland Council 450DN pipeline) to provide stormwater connections to Lots 7-15 given the NDC is likely to apply.</p> <p>Further information is requested:</p> <ul style="list-style-type: none"> <li>On the capacity of the table drain and potential impacts on private driveway crossings on the Kaipara Coast Highway.</li> <li>Potential water quality effects on downstream receiving environments</li> </ul>	<p><i>The section 32 report, on page 34, states that Healthy Waters have been consulted as to whether the NDC applies to the rezoning sought and the subsequent residential development of the plan change area. As noted in the section 32 report, the result of correspondence with Healthy Waters was that as the plan change area does not have the ability to connect to an Auckland Council reticulated stormwater network, the plan change request will not trigger consideration of the proposal against the NDC. Discharge of stormwater will be assessed in accordance with the provisions set out in Chapter E8 of the AUP(OP).</i></p> <p><i>However, Section 4.0 Stormwater of Appendix 8 – Engineering Design Report (Aspire, 5 July 2021) states:</i></p> <p><i>The site currently discharges stormwater via an existing 450mm dia public stormwater pipe in the southern corner of the site and to existing roadside swales. <u>It is proposed to extend the stormwater network (which was installed and vested as part of stage 1) to provide stormwater connections to Lots 7-15. Lots 1-6 &amp; 16 and the JOAL's will discharge to the existing roadside swales'.</u></i></p> <p><i>Given the 450mm diameter pipeline discharges to the existing table drain along the Kaipara Coast Highway, further information is required to assess the capacity of the table drain and the potential impact on the private driveway crossings on Kaipara Coast Highway.</i></p> <p><i>A Stormwater Management Plan (SMP) is required for this site under the region wide NDC for greenfield development. Whilst the SMP will be required during the later subdivision/resource consent stage, further certainty is required that the effects of the land use change can be mitigated at the plan change stage. Subsequently further assessment is requested on:</i></p>	<p><i>The Planning Collective (21/09/2021):</i></p> <p>Refer to the attached Stormwater Management Plan prepared by Aspire Engineering, dated /09/09/2021, provided in <b>Attachment 4</b>.</p>

COUNCIL REQUEST		REASONS FOR REQUESTS	APPLICANT'S RESPONSE
		<ul style="list-style-type: none"> <li>• <i>Water quality effects</i></li> <li>• <i>10% and 1% flow/flood management and how the development will impact on the table drain and private driveway access</i></li> </ul> <p><i>Further confirmation on the proposed infrastructure to be vested with Auckland Council.</i></p>	

## Attachment 2:

Preliminary Site Investigation prepared by 4Sight, dated  
September 2016







LAND. PEOPLE. WATER.


**Preliminary Site Investigation with Limited Soil  
Sampling  
751 & 787 Kaipara Coast Highway**


For Phil Fairgray  
Aspire Consulting Engineers Ltd


September 2016  
V2.0

## REPORT INFORMATION AND QUALITY CONTROL

<b>Prepared for:</b>	Phil Fairgray Director Aspire Consulting Engineers Ltd
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<b>Author:</b>	Kyle Redshaw Land and Water Quality Consultant	
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<b>Reviewer:</b>	Nigel Mather Senior Land and Water Quality Consultant	
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<b>Approved for Release:</b>	Alice Andrew Director	
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<b>Document Name</b>	R_Kaipara Coast Hwy PSI_v2.0_September 2016.docx
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<b>Version History:</b>	2.0	September 2016
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- Appendix A: Preliminary Plans
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- Appendix C: Historic Aerial Photography
- Appendix D: Photos of the Site Walkover and Bore Hole Locations
- Appendix E: Laboratory Analysis

## EXECUTIVE SUMMARY

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This report provides information regarding a Preliminary Site Investigation (PSI) and limited soil sampling undertaken by 4Sight Consulting Ltd (4Sight) for Aspire Consulting Engineers Ltd, at 751 and 787 Kaipara Coast Hwy, Kaukapakapa (the site).

A PSI has been undertaken to assess the potential implications for a proposed subdivision at the site under the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (NES Soil). The scope of the PSI included a review of selected publicly available information, a site visit with limited soil sampling, and an interview with the landowners.

The majority of the site is currently used for grazing, with a yard located on the southern boundary of the site (787 Kaipara Coast Hwy) currently used for truck parking, truck washing, and basic maintenance activities. The area in the south western corner of the site (751 Kaipara Coast Hwy) is occupied by two residential dwellings and a small wood workshop. 751 Kaipara Coast Hwy has historically been used for dairy farming activities with some short term small scale poly house covered cropping activities, and outdoor cropping activities, in the southwestern corner.

A total of twelve shallow soil samples were collected from six locations to investigate sub-surface soils beneath and adjacent to the truck depot and the former covered cropping area. Sub-surface soils in each soil sample location were generally consistent and there was no obvious sign of contamination in the form of odours, discolouration or landfill material.

Surface soil from four locations at 787 Kaipara Coast Hwy was submitted for laboratory analysis. Analytical results indicated that the concentration of selected heavy metals in shallow soils were generally within typical background levels for non-volcanic soils. A single sample was identified where the lead concentration exceeded the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (NES Soil) – Soil Contaminant Standards (NES SCS) for rural residential land use (25% produce scenario). Concentrations of total petroleum hydrocarbons (TPH) was below laboratory detection limits at the four sample locations.

Surface soil from two locations at 751 Kaipara Coast Hwy was submitted for laboratory analysis. Analytical results indicated that the concentration of arsenic, copper and lead exceeded typical background levels for non-volcanic soils at one location. The concentration of arsenic at this location also had an arsenic concentration exceeding the NES SCS for rural residential land use (25% produce scenario) and residential (10% produce).

The limited soil sampling indicated that truck yard activities undertaken at 787 Kaipara Coast Hwy have not had a widespread impact in shallow soils. The location of elevated lead concentrations in shallow soil (the overland flow path from the vehicle wash pad to the dairy shed effluent (DSE) ponds) is beneath the currently proposed access road into the subdivision. Reuse of soils from this location beneath the road and berms is considered acceptable and is highly unlikely to present a risk to human health.

The limited sampling at the location of the former poly house indicates residual contamination from use of persistent pesticides which marginally exceeded NES SCS. The existing residences and location of the former poly house are not subject to development as part of the proposed subdivision and will remain as a lifestyle block. The former poly house location is currently an unused grass paddock which is occasionally used for grazing. The former outdoor cropping area is currently planted in mature trees. It is considered that neither of these areas is part of the general living space of the residence, and that the former location of the poly house is considered production land. On this basis, the location of the former poly house is not considered a piece of land in terms of this assessment, and it is considered highly unlikely that there will be a risk to human health as part of the proposed development at this location

We consider that the proposed subdivision can proceed as a permitted activity in accordance with Clause 8(4) of the NES Soil. Soil disturbance activities will occur across the current truck depot as part of construction of a new access road. The volumes of these earthworks across the truck depot (piece of land) will be no more than 25 m<sup>3</sup> per 500 m<sup>2</sup>. Soil disturbance activities can be undertaken as a permitted activity in accordance with Clause 8(3) of the NES Soil.

## 1 INTRODUCTION

4Sight Consulting Ltd (4Sight) has been engaged by Aspire Consulting Engineers (the Client) to undertake a Preliminary Site Investigation (PSI) with limited soil sampling at 751 & 787 Kaipara Coast Highway, Kaukapakapa (herein referred to as “the site”).

The purpose of this investigation is to determine whether activities described in the HAIL are/or have been undertaken on the site, the likelihood of human health risk associated with a proposed residential subdivision, and to assess the requirements for potential resource consents in relation to the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (NES soil) (MfE,2011).

Specifically, a PSI is required under the NES to support any proposed subdivision. Therefore, consideration is required to be given to the NES Soil.

Land covered in the NES Soil is defined in regulation 5(7) as:

*A piece of land that is described by one of the following:*

- a) *An activity or industry described in the HAIL is being undertaken on it:*
- b) *An activity or industry described in the HAIL has been undertaken on it:*
- c) *It is more likely than not that an activity or industry described in the HAIL is being or has been undertaken on it.*

This investigation and associated reporting has been carried out and reviewed by suitably qualified and experienced practitioners in accordance with the NES Soil.

### 1.1 Scope of Works

The scope of this PSI has included the following:

- A review of selected publicly available information on the site, including council files and aerial photographs to determine whether or not any activities or industries on the HAIL is, has been, or might have been undertaken on the site;
- Site inspection to visually assess the presence of any activities or industries listed on the HAIL or evidence of any potential contamination, and discussion with site owners/occupiers;
- Limited soil sampling at selected locations on the site to assess shallow soil for presence of selected contaminants; and
- An overall assessment of the applicability of the NES Soil and the discharge rules as set out in the Auckland Council Regional Plan: Air Land Water (ACRP:ALW) and the Proposed Auckland Unitary Plan (PAUP).

## 2 SITE DETAILS

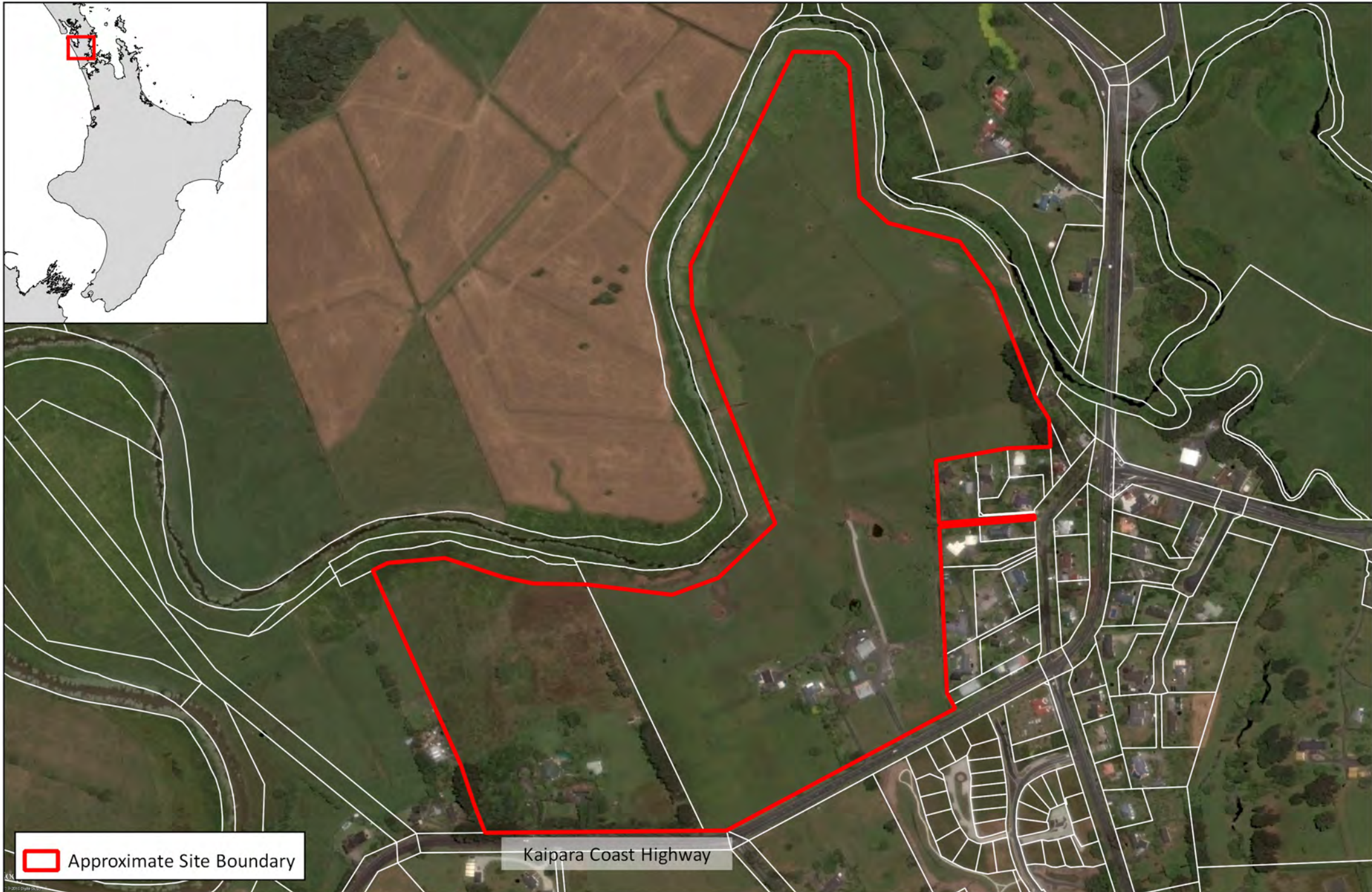
The site is located south of Kaukapakapa, and is surrounded by mixed residential land use and rural farmland (Figure 1). The site is legally described as Lot 2 DP 173483 (751 Kaipara Coast Highway, forming the western area of the site) and Lot 1 DP 144373 (787 Kaipara Coast Highway, forming the eastern area of the site) with a total approximate area of 24.9 hectares (ha). Site details can be found in Table 1. Preliminary plans of the proposed residential subdivision for the site can be found in Appendix A.

Table 1: Site details

Address	Legal Description	CT Number	Area
751 and 787 Kaipara Coast Highway “the site”	Lot 2 DP 173483 and Lot 1 DP 144373	NA106B/725 and NA85C/817	Approximately 24.9 ha



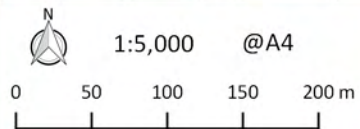
Cadastral data sourced from the LINZ Data Service <https://data.linz.govt.nz/> under the Creative Commons Attribution 3.0 New Zealand licence. Aerial imagery sourced from Google Earth.



 Approximate Site Boundary

Kaipara Coast Highway

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AA2116: 787 Kaipara Coast Highway PSI  
**Figure 1: Site Details**  
Plan prepared for Grandview Estates Ltd. by 4Sight Consulting.

Date: 25/08/2016  
Version: 1.0  
Author: Kyle Redshaw  
Checked: Nigel Mather  
Approved: Alice Andrew



## 2.1 Land Use – Current and Proposed

The majority of the site is currently in pasture occupied by beef cattle. There are two areas of development on the site:

- Two residential dwellings are located on the southern boundary of the site (787 Kaipara Coast Highway). Approximately 50 meters (m) east of the two dwellings is yard currently used as a truck depot which has been in operation for the past five years. The truck depot consists of a driveway that loops around a workshop and an old cow shed. Trucks are cleaned using a water blaster north of the old cow shed and washwater flows overland towards the former dairy shed effluent (DSE) settling ponds. General vehicle maintenance e.g. oil changes and upkeep is undertaken; and
- Two dwellings are also located in the south western corner of the site (751 Kaipara Coast Highway). A wood workshop is present 20 m south east of the main dwelling, along with a garden shed, three bay garage, and flat a grassed area formerly used for short term cropping activities within a poly house.

The site is split into three zones under the Proposed Auckland Unitary Plan – Notified version (Sept 2013). The zones are Countryside Living along the southern boundary, Rural and Coastal Settlement which covers most of the middle of the site and in the most eastern corner, and Rural Production covers the remainder of the site. Under the Auckland Council District Plan – Operative Rodney Section (2011) the site is zoned General Rural.

The proposed development includes a 36 lot residential subdivision, with varying lot sizes. Preliminary plans showing the location of the proposed development on the site can be found in Appendix A. The existing dwellings located at 751 and 781 Kaipara Coast Hwy will not be subject to redevelopment and will remain as lifestyle blocks. As part of the subdivision, land disturbance activities will be undertaken to re-contour and grade the site. Earthworks will occur across the current truck depot location as part of construction of a new access road.

## 2.2 Geology and Hydrology

The Institute of Geological and Nuclear Sciences (GNS) 1:250,000 online geological map shows the regional geology consists of two types. The southern area of the site consists of Middle to Late Pleistocene river and hill slope deposits: predominantly pumiceous sand, silt, mud, clay, with interbedded gravel and peat. The soils close to the Kaukapakapa River consist of younger Holocene River deposits: mainly sand, silt mud and clay with local gravel and peat beds.

Site specific geology from the soil bores advanced during limited soil sampling (refer to Section 4) showed shallow soils consisted of dark brown silty clay to 250 mm below ground level (bgl), over orange brown clay loam to 500 mm bgl. A geotechnical investigation conducted by Foundation Engineering in 2003 reported shallow geology consistent with this description.

The closest surface water body is the former dairy shed effluent (DSE) settling pond located approximately 50 m north of the old cow shed. This connects through a series of onsite settling ponds to the Kaukapakapa River, which flows along the north western and north eastern boundary of the site.

A search of the Auckland Council (AC) groundwater maps indicated that there are eight bores within a radius of 200 m of the site. A bore (consent number 9768) is located within the truck depot, and one bore (consent number 9876) is located immediately north of the former poly house at 751 Kaipara Coast Highway. Both bore logs state they were used for stock and domestic supply and are 120 m deep. The bore at 751 Kaipara Coast Highway was used for irrigation of carnations in the poly house, and was reported by the site owner to have been used for domestic water supply for a short period. No further information supplied in regard to groundwater depth or use was provided in the AC groundwater maps.



## 3 SITE HISTORY

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To understand the history of the site and particularly the nature and location of any potentially contaminating activities, a review of selected publicly available information for the site was undertaken. This included searches of

- Property files from the Auckland Council (AC);
- Contaminated Land Enquiry provided by AC;
- Selected historical aerial photographs available through AC and Google Earth;
- Contaminated land database search from the AC;
- Hazardous Substances and Incidents report, provided by the Environmental Protection Agency (EPA); and
- Correspondence with the landowner and developer.

### 3.1 Council Records

#### 3.1.1 Contaminated Land Database

A search of the Contaminated Land Database for the site, maintained by AC's Environmental Health Unit of the Licensing and Compliance Services Department, was undertaken.

AC noted (email dated 20 July 2016) that there was no specific information or reports available with regard to potential contamination at 787 Kaipara Coast Hwy. AC noted (email dated 24 August 2016) that there had possibly been horticultural activities conducted at 751 Kaipara Coast Hwy, and that consent was granted to dismantle and remove a greenhouse in 1999.

No further information was supplied in relation to historic land use at the site.

#### 3.1.2 Contaminated Land Enquiry

A Site Contamination Enquiry was requested from AC for 787 Kaipara Coast Hwy, and was received on 28 July 2016. The Site Contamination Enquiry provides information on records held by AC for landfills, bores, air discharge and industrial and trade process consents, contaminated site discharge consents, and environmental assessments at the site and within a 200 m radius of the site. The AC response mentions the dairy farm had a consent (no. 50238) for applying dairy shed effluent to land, but it was discontinued in June 2001 when the dairy farm closed down. There was no other information regarding potential contamination or filling at the site.

A second Site Contamination Enquiry was requested from AC for 751 Kaipara coast Highway, and was received on 24 August 2016. It lists bore information as set out in Section 2.2.

There was no other information regarding potential contamination or filling at the site.

#### 3.1.3 Property File Review

The property file for 787 Kaipara Coast Highway was obtained from the Orewa Office of the AC (supplied on 28 July 2016). Selected details of the property files are provided in Appendix B. The property file includes the following information of relevance:

- 1961 – Building permit issued to build an implement shed (Building Permit no: BPA 175091);
- 1989 – Building permit issued to build an implement shed on the western side of the main access driveway to the yard (Building Permit no: BPA 530371);
- 1995 – Building consent issued to build a covered yard attached to the existing cow shed (Building Consent no: 952948); and
- 2003 – Building consent issued to build a second dwelling on the site (Building Consent no: ABA 32513).

The property file for 751 Kaipara Coast Highway was reviewed at the Orewa Office of the AC (viewed on 25 August 2016). Selected details of the property files are provided in Appendix B. The property file includes the following information of relevance:



- 1978 – Building permit issued to build an implement shed;
- 1990 – Building permit issued for additions to the main dwelling;
- 1993 – Building consent application granted for a plastic covered crop (ABA 939115). Drawings from this application show areas of proposed outdoor cropping located both immediately west and east of the poly house (refer to Section 3.3 for further information);
- 1994 – Building permit issued for the minor dwelling to be built 30 m to the east of the main dwelling;
- 1995 – Resource consent – water permit for abstracting groundwater from a bore for irrigation use on 0.1 ha of outdoor crops and 0.6 ha of plastic covered crops (water permit no. 939216);
- 1997 – Building permit issued for the wood workshop to be erected; and
- July 1999 – Letter stating the plastic covered crops were removed.

There was no other information of significance to this assessment identified in either of the property files.

#### 3.1.4 Hazardous Substances and Incidents Report

The Environmental Protection Agency (EPA) maintained a list of reported hazardous substance incidents over the period July 2006 – December 2011. A review of the EPA register over this period identified no incidents of significance in relation to the site or immediately surrounding land.

## 3.2 Aerial Photographs

Historical aerial photographs were sourced from AC and Google Earth® and can be found in Appendix C.

- 1999 (AC, colour). There are three large buildings and one small shed on the southern boundary of 787 Kaipara Coast Highway, including one residential dwelling. A central driveway connects them all. There are two residential dwellings in the south western corner of the site (751 Kaipara Coast Highway). There is also a structure immediately south of the residences (wood workshop) and white structure located on the southern boundary (presumed to be the crop poly house). The rest of the site is in pasture. The surrounding land is residential on the north western and south western boundaries and the rest is rural land;
- 2006 (AC, colour). Another residential dwelling has been added next to the existing one at 787 Kaipara Coast Highway, with land disturbance evident to the south of the new dwelling. The driveway and yard around the cow shed has been widened and land disturbance is evident north of the cow shed. There are trucks parked on the driveway and there is a storage area on the south eastern side of the yard. At 751 Kaipara Coast Highway the crop poly house area has been removed and 100 m north of the dwellings a pond has been developed. The rest of the site, and the surrounding land use, is unchanged from the 1999 image; and
- 2016 (Google Earth, colour). At 787 Kaipara Coast Highway there is no land disturbance evidence around the cow shed. At 751 Kaipara Coast Highway the pond is now dry and the rest of the site is unchanged. The surrounding land use is the same, except there is evidence of cropping is taking place to the north of the site (north of the Kaukapakapa River).

## 3.3 Landowner Information

An interview was undertaken on 21 July 2016 with the land owner at 787 Kaipara Coast Hwy, Mr. Roger Hugh MacLennan, who has owned the property for over 30 years'. According to the Mr MacLennan there have been no potentially contaminating activities historically conducted on the property. Mr. MacLennan reported that the property was a dairy farm until it was converted to a beef cattle farm 15 years ago. Currently the property is still used as a beef farm, but there is also a yard where large trucks are stored, cleaned using a water blaster, and where general vehicle maintenance and upkeep occurs. It was reported that there are generally less than five trucks stored on the yard at any one time. The runoff from the water blasting flows overland into the former DSE ponds that flow into the Kaukapakapa River. It was reported that truck parking and maintenance activities have been conducted for the past five years. The yard area north of the cowshed has been filled with soil and gravel to extend the yard space. Any waste oil removed from the trucks is reported to be removed from the property immediately.

An interview was undertaken on 25 August 2016 with the land owner at 751 Kaipara Coast Highway, Mr. Jeff Down, who has owned the property for over 30 years'. According to Mr Down the site has historically been used primarily

for grazing cattle. A poly house was erected in the early 1990s and was reported to be used for growing carnations for a two-year period. The crops in the poly house were irrigated with fertiliser on a regular basis from an overhead irrigation system, and organic pesticides were reported to have been used on a weekly basis. This area is now an unused grass paddock with occasional grazing. During follow up phone discussions with the land owner, it was reported that carnations had been grown outdoors in the southwest corner of the site for a period of approximately one year (west of the poly house). This area is now planted in mature trees. The area of proposed cropping east of the poly house (as shown in property file plans) was reported to have not been undertaken. Mr Down stated that no other potentially contaminating activity had occurred on the property and that previous owners were also farmers.

## 4 SITE INVESTIGATION

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### 4.1 Initial Site Walkover

A site visit was undertaken on Thursday, 21 July 2016 at 787 Kaipara Coast Highway, and subsequently on Thursday, 25 August at 751 Kaipara Coast Highway. Photos of the site visits are presented in Appendix D. The following observations were made during the site visit:

- The majority of the site is currently in pasture occupied by beef cattle;
- The area surrounding the dwellings on 751 and 787 Kaipara Coast Hwy are the two main areas of development on site;
- Development at 787 Kaipara Coast Hwy includes:
  - Two residential dwellings;
  - Approximately 50 m east of the dwellings is yard currently used as a truck depot, which includes a workshop and a redundant cow shed;
  - The truck yard is gravelled and is approximately 3,000 m<sup>2</sup> in area and contains the redundant cow shed and workshop;
  - The workshop contains old farming equipment and tools;
  - The redundant cow shed is also used for storage of farming supplies;
  - A stack of old fencing materials is stored behind the redundant cow shed;
  - An old DSE settling pond is present approximately 50 m north of the redundant cow shed; and
  - A digger and a tractor were parked in the yard.
- Development at 751 Kaipara Coast Hwy includes:
  - Two residential dwellings;
  - A wood workshop that contains general building materials and tools;
  - A garden shed and three bay garage; and
  - An old hay barn stores wood is located approximately 60 m north east of the minor dwelling.
- There were no visible signs of contamination such as oil or grease, and no areas of significant stressed or dying vegetation; and
- No evidence of current or historical above/underground storage tanks.

### 4.2 Soil Sampling

A total of eight shallow soil samples from four locations were collected to investigate shallow soils beneath and immediately adjacent to the truck yard, and four soil samples were taken from two locations at the location of the former crop poly house.

The locations were selected to investigate areas of potential concern, as identified during the site walkover and based on information review. Soil sampling locations are set out in more detail in Section 4.3. The soil sampling was undertaken in general accordance with the Contaminated Land Guidelines No.5 Site Investigation and Analysis of Soils (MfE, 1999, revised 2011). The methodology for the soil sampling is set out below.

#### 4.2.1 Sampling Methodology

Soil sampling at 787 Kaipara Coast Highway was conducted on 21 July 2016. Four soil bores were advanced to a depth of approximately 500 mm below ground level (bgl) using a hand auger. Soil samples were collected from two depths at each location, being 0-100 mm bgl and 400-500 mm below ground level (bgl). Soil sampling locations are presented in Figure 2 below, and photographs of sampling locations are shown in Appendix D.

Soil sampling at 751 Kaipara Coast Highway was conducted on 26 August 2016. Two soil bores were advanced to a depth of approximately 400 mm below ground level (bgl) using a hand auger. Soil samples were collected from two depths at each location, being 0-100 mm bgl and 300-400 mm below ground level (bgl). Soil sampling locations are presented in Figure 3 below, and photographs of sampling locations are shown in Appendix D.

Soil samples were collected, placed in sample containers and transported in chilled containers, with Chain of Custody documentation, to RJ Hill Laboratories, Hamilton. On the basis of the potentially contaminating activities associated with the truck yard, particularly the potential for hydrocarbon impact from water blasting and waste oil, soil samples from 787 Kaipara Coast Highway were analysed for (Table 2):

- Heavy metals (arsenic (As), cadmium (Cd), chromium (Cr), copper (Cu), lead (Pb), nickel (Ni) and zinc (Zn));
- Polycyclic Aromatic Hydrocarbons (PAH); and
- Total Petroleum Hydrocarbons (TPH)

On the basis of potentially contaminating activities associated with horticultural use at 751 Kaipara Coast Highway, particularly the potential for persistent pesticide application, soil samples were analysed for (Table 3):

- Heavy metals (arsenic (As), copper (Cu), and lead (Pb)); and
- Organochlorine pesticides (OCPs).

Table 2: Summary table of sample locations and laboratory analytical schedule at 787 Kaipara Coast Highway

Sample Location	Depth (mm bgl)	Soil Type	Lab Analysis
KC1_50	0-100	Silty clay	Heavy Metals. PAH, TPH
KC1_400	400-500	Clay	Hold cold
KC2_50	0-100	Silty clay	Heavy Metals. PAH, TPH
KC2_400	400-500	Clay	Hold cold
KC3_50	0-100	Silty clay	Heavy Metals. PAH, TPH
KC3_400	400-500	Clay	Hold cold
KC4_50	0-100	Silty clay	Heavy Metals. PAH, TPH
KC4_400	400-500	Clay	Hold cold
KC5_50	0-100	Silty clay	Heavy Metals. PAH, TPH
KC5_400	400-500	Clay	Hold cold
KC6_50	0-100	Silty clay	Heavy Metals. PAH, TPH
KC6_400	400-500	Clay	Hold cold

Table 3: Summary table of sample locations and laboratory analytical schedule at 751 Kaipara Coast Highway

Sample Location	Depth (mm bgl)	Soil Type	Lab Analysis
KK_100	0-100	Silty clay	OCP, As, Cu, Pb
KK_300	300-400	Clay	Hold cold
KK_100	0-100	Silty clay	OCP, As, Cu, Pb
KK_300	300-400	Clay	Hold cold


#### 4.2.2 QA/QC

Standard 4Sight field quality assurance protocols were followed. All tools used for sampling were washed in a decontaminant solution between samples to remove the risk of cross contamination. Nitrile gloves were used and disposed of between each sample. RJ Hill Laboratories are a New Zealand accredited laboratory (by International Accreditation NZ). Their primary quality standard is NZS/ISO/IEC 17025:2005 which incorporates the aspects of ISO 9000 relevant to testing laboratories. Refer to the laboratory analysis report in Appendix E for further information on accreditation.

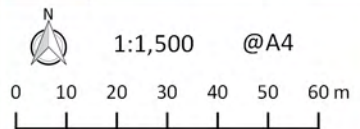


Cadastral data sourced from the LINZ Data Service <https://data.linz.govt.nz/> under the Creative Commons Attribution 3.0 New Zealand licence. Aerial imagery sourced from Google Earth.



 Approximate Site Boundary

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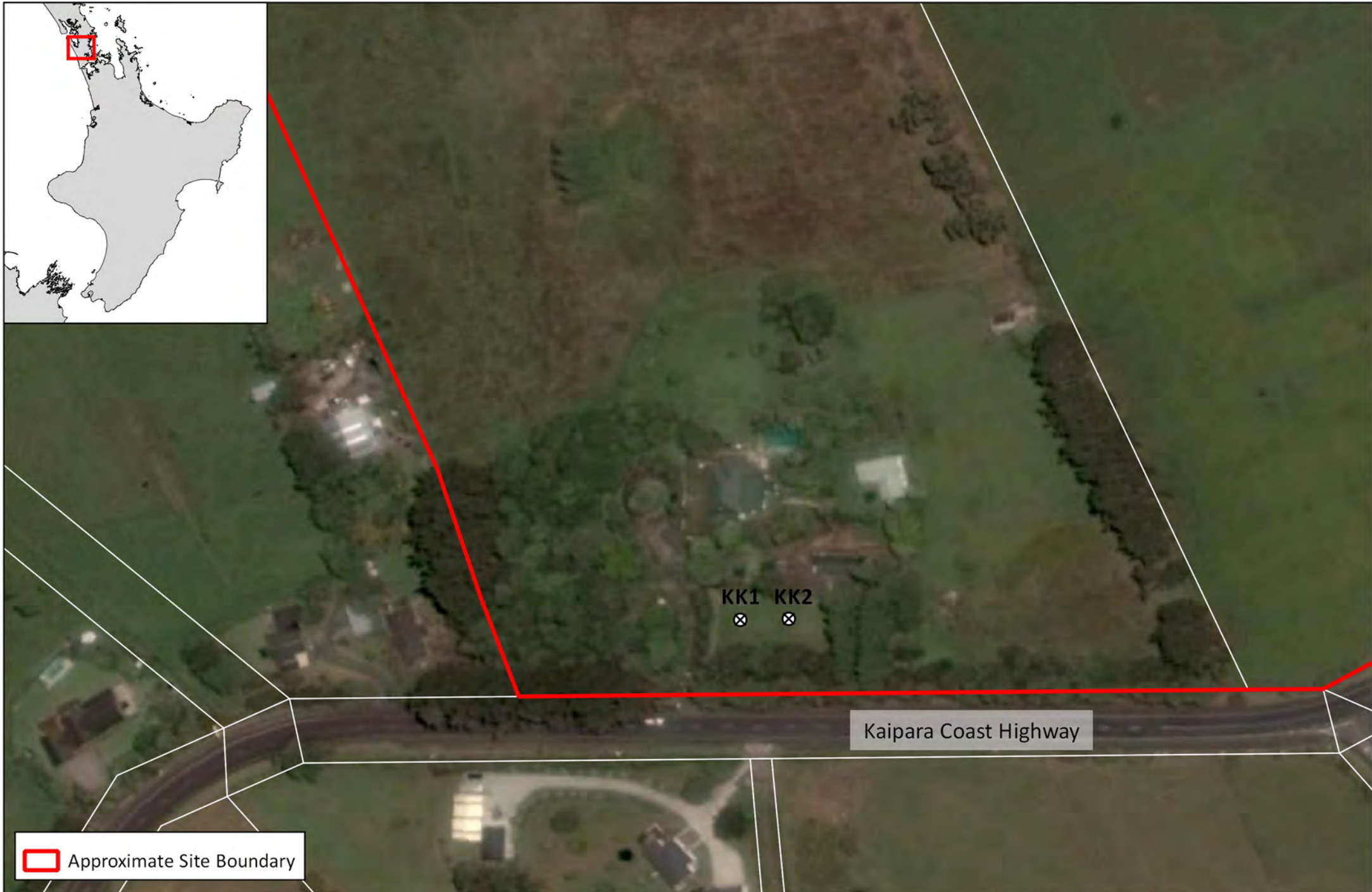
AA2116: 787 Kaipara Coast Highway PSI  
**Figure 2: Soil Sample Locations 787 Kaipara Coast Highway**  
Plan prepared for Grandview Estates Ltd. by 4Sight Consulting.

Date: 25/08/2016  
Version: 1.0  
Author: Kyle Redshaw  
Checked: Nigel Mather  
Approved: Alice Andrew

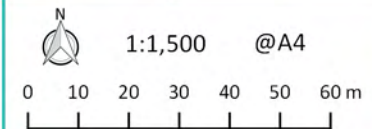




Cadastral data sourced from the LINZ Data Service <https://data.linz.govt.nz/> under the Creative Commons Attribution 3.0 New Zealand licence. Aerial imagery sourced from Google Earth.



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AA2116: 787 Kaipara Coast Highway PSI  
**Figure 3: Soil Sample Locations 751 Kaipara Coast Highway**  
Plan prepared for Grandview Estates Ltd. by 4Sight Consulting.

Date: 25/08/2016  
Version: 1.0  
Author: Kyle Redshaw  
Checked: Nigel Mather  
Approved: Alice Andrew



### 4.3 Sampling Observations

Photos of the soil sample locations and the soil profile at each sample site are presented in Appendix D. The following observations were made during the soil sampling:

- Sample site KC1 was located on a stock pen near the farm supply bore;
- Sample site KC2 was located in the centre of truck yard;
- Sample site KC3 was located near an historic feed pad site on the northern side of the truck yard;
- Sample site KC4 was located downgradient of the truck water blasting area where wash water flows overland to the DSE pond;
- Sample site KK1 and KK2 were both located in the former poly house covered cropping area;
- The subsoil was wet at all locations;
- There was no obvious sign of landfill material in the surface soil such as glass or plastic; and
- There was no obvious discolouration of the soil and no odours were present at any of the sample sites.

### 4.4 Evaluation Criteria

The soil sample results have been screened against the following criteria:

- National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (NES Soil) Soil Contaminant Standards (SCS) using both the rural/lifestyle block (including 25% home-grown produce consumption) land use scenario and residential 10% produce. These land use scenarios have been selected to represent the proposed nature of the subdivision (mixed lot size);
- MfE (revised 2011) *Guidelines for Assessing and Managing Petroleum Hydrocarbon Contaminated Sites in New Zealand* (MfE Petroleum Guidelines)– All Pathways Criteria. These guidelines are a composite of the limiting (or lowest value) acceptance criteria concentrations drawn from the following:
  - the inhalation, soil ingestion, dermal and produce ingestion pathway criteria;
  - criteria developed to be protective of subsurface maintenance/excavation workers (based on soil ingestion, dermal absorption and inhalation exposure pathways); and
  - TPH surrogate criteria developed as a screening tool for diesel derived polycyclic aromatic hydrocarbons (PAH) constituents.

Specifically, the soil results have been compared to residential land use for a silty clay soil type.

- Background levels for heavy metals (non-volcanic range) as presented in Auckland Regional Council’s TP153 (Background Concentrations of Inorganic Elements in Soils from the Auckland Region, 2001), used as a guideline for typical concentrations in non-volcanic soils;
- ACRP:ALW Permitted Activity Criteria (Schedule 10) for Discharge; and
- Rule 2.1.3 of Section H.4.5 of the PAUP, which contains the same criteria as the ACRP:ALW.

### 4.5 Results and Discussion

A summary of the laboratory results is presented in Tables 4, 5 and 6. The full results are contained in the laboratory analysis reports provided in Appendix E.

- The analytical results show that the concentrations of heavy metals in all soil samples analysed are below the typical background concentrations for non-volcanic soil in the Auckland Region, as presented in the AC Non-Volcanic Soil Guidelines, with the exception of:
  - Soil sample KR4\_50 (lead concentration of 182 mg/kg against a background upper limit of 65mg/kg); and
  - Soil sample KK2\_100 (arsenic concentration of 25 mg/kg against a background upper limit of 12 mg/kg, copper concentration of 81 mg/kg against a background upper limit of 45mg/kg, and lead concentration of 73 mg/kg against a background upper limit of 65mg/kg).

- The concentration of heavy metals in all soil samples analysed are below the NES Soil Contaminant Standards (SCS) for rural/lifestyle block (including 25% home-grown produce consumption) land use, with the exception of:
  - Soil sample KR4\_50, where the concentration of lead was 182 mg/kg, which exceeded the NES guideline of 160 mg/kg; and
  - Soil sample KK2\_100, where the concentration of arsenic was 25 mg/kg, which exceeded the NES guideline of 17 mg/kg.
- The concentration of heavy metals in all soil samples analysed are below the NES Soil Contaminant Standards (SCS) for the residential 10% produce land use scenario; with the exception of:
  - Soil sample KK2\_100, where the concentration of arsenic was 25 mg/kg, which exceeded the NES guideline of 20 mg/kg.
- OCPs were below detection limits in the soil samples analysed at 751 Kaipara Coast Hwy, with the exception of:
  - Soil sample KK2\_100, where the concentration of 4,4'-DDT was detected at 0.026 mg/kg.
- TPH were not detected in any of the shallow soil samples analysed, and were therefore below the MfE Petroleum Guidelines for Residential land use; and
- All six soil samples were below the ACRP:ALW and PAUP discharge criteria.



Table 4: Summary of laboratory results of heavy metals

Sample ID	Depth (mm bgl)	Heavy Metals (mg/kg)						
		As	Cd	Cr	Cu	Pb	Ni	Zn
KR1_50	0-100	6	0.24	17	18	10.1	11	64
KR2_50	0-100	5	0.55	12	13	20	8	57
KR3_50	0-100	<2	<0.10	6	5	7	2	21
KR4_50	0-100	4	0.44	8	20	<b>182</b>	3	137
KK1_100	0-100	4	-	-	8	22	-	-
KK2_100	0-100	<b>25</b>	-	-	<b>81</b>	<b>73</b>	-	-
<i>Background – Non-volcanic<sup>1</sup></i>		0.4 - 12	<0.1-0.65	2-55	1 - 45	<1.5 - 65	0.9-35	9-180
<i>NES Guidelines – Rural Residential/Lifestyle 25% produce<sup>2</sup></i>		17	0.8	290	>10,000	160	-	-
<i>NES Guidelines - Residential 10% produce<sup>2</sup></i>		20	3	460	>10,000	210	-	-
<i>ACRP:ALW / PAUP<sup>3</sup></i>		100	7.5	400	325	250	105	400

1: Background Concentrations of Inorganic Elements in Soils from the Auckland Region', Technical Publication No. 153, (Auckland Regional Council, 2001). Exceedances are underlined.

2: 'National Environmental Standards for Managing and Assessing Contaminants in Soil to Protect Human Health' - Soil Contaminant Standards (SCS), (MfE, 2012). Exceedances are in **bold**.

3: Auckland Council Regional Plan: Air, Land and Water, Schedule 10 and Proposed Auckland Unitary Plan, Permitted Activity Criteria: Discharge', (Auckland Regional Council, 2010).

Table 5: Summary of laboratory results of Total Petroleum Hydrocarbons (TPH)

Sample ID	Soil Type	Depth (mm bgl)	TPH (mg/kg)		
			C7-C9	C10-C14	C15-C36
KC1_50	Silty clay	0-100	<10	<20	<40
KC2_50	Silty clay	0-100	<8	<20	<40
KC3_50	Silty clay	0-100	<9	<20	<40
KC4_50	Silty clay	0-100	<9	<20	<40
<i>MfE Petroleum Guidelines<sup>1</sup> – Residential Land Use All Pathways (&lt;1m bgl)</i>			2,700	560	>20,000

1. Guidelines for Assessing and Managing Petroleum Hydrocarbon Contaminated Sites in New Zealand, Module 4 – Tier 1 Soil Screening Criteria' (MfE Petroleum Guidelines) (MfE 1999).

Table 6: Summary of laboratory results of Organochlorine Pesticides (OCP)

Sample ID	Depth (mm bgl)	Organochlorine Pesticides (OCP) (mg/kg)		
		Dieldrin	4,4'-DDT	Total DDT Isomers <sup>5</sup>
KK1_100	0-100	<0.001	<0.001	<0.06
KK2_100	0-100	<0.001	0.026	<0.06
<i>NES Guidelines – Rural Residential/Lifestyle 25% produce<sup>1</sup></i>		1.1	-	45
<i>NES Guidelines - Residential 10% produce<sup>2</sup></i>		2.6	-	70

1: 'National Environmental Standards for Managing and Assessing Contaminants in Soil to Protect Human Health' - Soil Contaminant Standards (SCS), (MfE, 2012). Exceedances are in **bold**.

2: The total sum of DDD, DDE and DDT.

## 5 CONCLUSIONS

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4Sight Consulting Ltd (4Sight) has been commissioned by Aspire Engineering Consultants (the Client) to undertake a Preliminary Site Investigation (PSI) at 751 and 787 Kaipara Coast Highway, Kaukapakapa (the site). This investigation included reviewing the site's history and field observations. The key findings are:

- The majority of the site is currently in pasture occupied by beef cattle. A truck depot is located on the southern boundary of 787 Kaipara Coast Hwy, with activities including truck parking, basic vehicle maintenance, and vehicle washing. A poly house used for covered cropping was formerly located in the south western corner of 751 Kaipara Coast Hwy, and short term outdoor cropping was conducted immediately west of the former poly house location;
- On the basis of activities observed and property information reviewed HAIL activities have occurred at 751 Kaipara Coast Hwy, specifically under the category of persistent pesticide bulk storage or use including – market gardens and spray sheds. HAIL activities have also occurred at 787 Kaipara Coast Hwy, specifically vehicle refuelling, service and repair – including workshops and maintenance areas;
- Wash water from the truck washing activities flows overland into a former DSE pond then into the Kaukapakapa River. Analysis of shallow soil in this area identified a lead concentration that exceeded the NES SCS for rural/lifestyle block (including 25% home-grown produce consumption), but was below the NES SCS for the residential 10% produce land use scenario;
- Concentrations of arsenic, copper and lead in shallow soils at one location beneath the former poly house are above the typical background range for non-volcanic soils, and the arsenic concentration is elevated above the NES SCS for the NES SCS for rural/lifestyle block (including 25% home-grown produce consumption), and the NES SCS for the residential 10% produce land use scenario; and
- Concentrations of contaminants in all the other soil samples was below the Auckland non-volcanic soil background concentrations, the NES SCS guidelines, MfE Petroleum Guidelines and the ACRP:ALW / PAUP guidelines.

Based on the findings of this investigation the following conclusions have been made:

- The limited soil sampling indicated that activities undertaken in the truck yard have not had a widespread impact across this area. The location of elevated lead concentrations in shallow soil (the overland flow path from the vehicle wash pad to the DSE ponds) is beneath the currently proposed access road into the subdivision. Reuse of soils from this location beneath the road and berms is considered acceptable and is highly unlikely to present a risk to human health; and
- The limited sampling at the location of the former poly house indicates residual contamination from use of persistent pesticides which marginally exceeded NES SCS. The existing residences and location of the former poly house are not subject to development as part of the proposed subdivision (refer to development plans in Appendix A) and will remain as a lifestyle block. The former poly house location is currently an unused grass paddock which is occasionally used for grazing. The former outdoor cropping area is currently planted in mature trees. It is considered that neither of these areas is part of the general living space of the residence, and that the former location of the poly house is considered production land. On this basis, the location of the former poly house is not considered a piece of land in terms of this assessment, and it is considered highly unlikely that there will be a risk to human health as part of the proposed development.

We consider that the proposed subdivision can proceed as a permitted activity in accordance with Clause 8(4) of the NES Soil. Soil disturbance activities will occur across the current truck depot as part of construction of a new access road. The volumes of these earthworks across the truck depot (piece of land) will be no more than 25 m<sup>3</sup> per 500 m<sup>2</sup>. Soil disturbance activities can be undertaken as a permitted activity in accordance with Clause 8(3) of the NES Soil.

## REFERENCES

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- Auckland Council Geomaps, 2016. Retrieved from <https://geomapspublic.aucklandcouncil.govt.nz/viewer/index.html>. Accessed on 10 August 2016.
- Auckland Council. 2000. *Auckland Council District Plan*. Auckland, New Zealand.
- Environmental Protection Agency [EPA]. (2011). *Hazardous Substance Incidents Reports*. Retrieved from <http://www.epa.govt.nz/about-us/monitoring/Pages/HS-incident-reports-archive.aspx>, accessed July 2016.
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- Google Earth. (2016).
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- Ministry for the Environment. 1999 (revised 2011). *Guidelines for Assessing and Managing Petroleum Hydrocarbon Contaminated Sites in New Zealand*. Ministry for the Environment, Wellington, New Zealand.
- Ministry for the Environment. 2004 (revised 2011). *Contaminated Land Management Guidelines No. 5: Site Investigation and Analysis of Soils*. Ministry for the Environment, Wellington, New Zealand.
- Ministry for the Environment. 2011. *Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011*. Ministry for the Environment, Wellington, New Zealand.

## LIMITATIONS

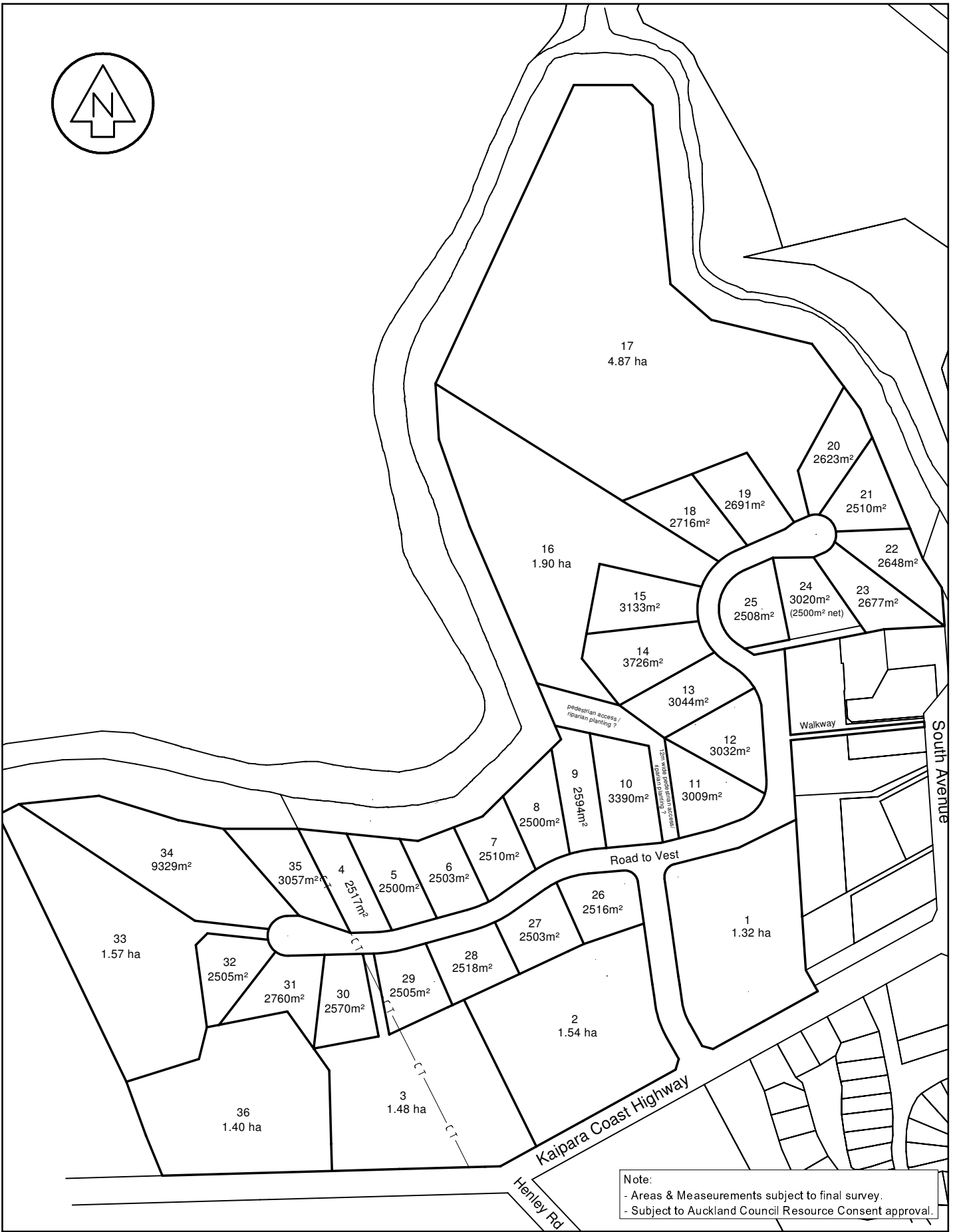
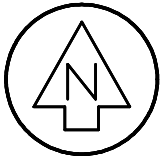
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From a technical perspective, the subsurface environment at any site may present substantial uncertainty. It is a heterogeneous, complex environment, in which small subsurface features or changes in geologic conditions can have substantial impacts on water, vapour and chemical movement. 4Sight Consulting's professional opinions are based on its professional judgement, experience, and training. These opinions are also based upon data derived from the testing and analysis described in this document. It is possible that additional testing and analysis might produce different results and/or different opinions. This document was prepared based on information provided by others. Should additional information become available, this report should be updated accordingly.

**Appendix A:**

**Preliminary Plans**



**Appendix B:**

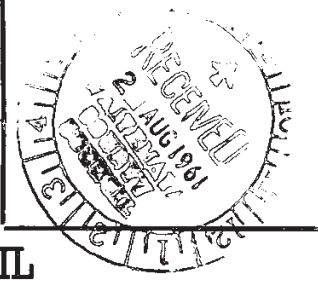
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BPA 175091

DATE STAMP

APPLICATION No. 567, 77 PERMIT No. \_\_\_\_\_

VALUATION Roll No. 308, 171 DATE ISSUED - 8 3 1961



### WAITEMATA COUNTY COUNCIL

P.O. BOX 5440 — AUCKLAND, C.1.

# Application for a Building Permit

OWNER OF SECTION. NAME ERIC COLGAN. PHONE No. 118  
(BLOCK CAPITALS)

PRESENT POSTAL ADDRESS KAUKAPAKAPA.

BUILDER. NAME SELF. PHONE No. \_\_\_\_\_

POSTAL ADDRESS \_\_\_\_\_

(Note:—Permit will be posted to builder unless otherwise requested).

NATURE OF PROPOSED BUILDING WORK IMPLEMENT SHED.

VALUE OF WORK £ 90 — FEE £ 10 — (See back page).

FULL LEGAL DESCRIPTION OF SECTION (as appears on either rate demand or title deeds).

PT LOT 4 IPP 1526 of ALLOT 14, 153 also P.D.P. 8926 14.99, PT 153 ARARI MU. PSH.

NAME OF PREVIOUS OWNER OF SECTION \_\_\_\_\_

AREA OF SECTION \_\_\_\_\_ Acre(s). Frontage \_\_\_\_\_ Feet.

ROAD NAME \_\_\_\_\_ LOCALITY Kaukapakapa

**IMPORTANT SEE INSTRUCTIONS INSIDE**

### FOR OFFICE USE ONLY

Footpath-Deposit		Refund	
Fee	/ /	Amount	/ /
Recpt.	_____	To	_____
Paid By	_____	Date	_____

Remarks: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Permit issued subject to the following conditions:—  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

APPROVED BY G. J. Cox BUILDING INSPECTOR 4/8/61 DATE

~~APPROVED BY \_\_\_\_\_ HEALTH INSPECTOR \_\_\_\_\_ DATE~~

FEE £ — : 10 : — RECEIPT No. 9342 DATE 2/8/61

U.P. 76526

R. J. H.  
3/8/61



## BUILDING PERMIT APPLICATION

IMPORTANT: PLEASE READ INSTRUCTION ON PAGE 3 AND COMPLETE THE FOLLOWING INFORMATION

**OWNER OF SECTION:**  
 NAME RHONDA MALENNAN PHONE NO. BUS \_\_\_\_\_  
 PHONE NO. PVT HW 5208  
 PRESENT POSTAL ADDRESS P.O. BOX 20 HELENSBURG

**BUILDER:**  
 NAME SELF PHONE NO. \_\_\_\_\_  
 ADDRESS \_\_\_\_\_  
 (PERMIT WILL BE POSTED TO BUILDER UNLESS OTHERWISE REQUESTED)  
 PREVIOUS OWNER OF SECTION: NAME MRS E. COLGAN

**LEGAL DESCRIPTION OF SECTION:** (SEE RATES FORM)  
 LOT (E D.P. 100194) LOT 1 DP 100194 ARARIMU PSH BLK 1  
 STREET OR ROAD NUMBER \_\_\_\_\_ VALUATION NO 3070-128  
 STREET OR ROAD NAME STATE HIGHWAY 16 LOCALITY KANAKARUA  
 AREA OF SECTION 20125 HECTARES RIDING KANAKA-KOIA  
18 6987 SQ METRES

**DESCRIPTION OF PROPOSED WORK:**  
CONSTRUCTION OF FARM IMPLEMENT SHED

**FLOOR AREA:** 151.7 SQ METRES  
 CARPORT/GARAGE \_\_\_\_\_  
 ADDITION \_\_\_\_\_  
 BASEMENT \_\_\_\_\_  
 GROUND FLOOR 151.7  
 FIRST FLOOR \_\_\_\_\_  
 OTHERS \_\_\_\_\_  
 TOTAL AREA 151.7

VALUE OF BUILDING WORK ONLY \$ 9000.00  
 (THE EXCISION OF THE BUILDING BY WORK SHALL BE PAID BY THE APPLICANT)

SIGNATURE OF APPLICANT [Signature]

FOR OFFICE USE ONLY

AMOUNT PAID	WORK	VALUE	TAX	RECEIPT NO.	DATE
	BUILDING	<u>9000.00</u>	<u>1350.00</u>	<u>108905</u>	<u>09</u>
	WATER				
	SEWER				
	WATER SETS				
	BUILDING DEPRICIATION				
	TOTAL PERMIT FEE				
	WATER CONNECTION				
	SEWER CONNECTION				
	OTHER PAYABLE				

**BUILDING PERMIT APPLICATION FEES**

ESTIMATED VALUE OF WORK	INCLUSIVE OF GST
\$ 1,000	\$ 33
\$ 1,001	\$ 44
\$ 2,001	\$ 66
\$ 4,001	\$ 87
\$ 8,001	\$ 113
\$ 10,001	\$ 131
\$ 15,001	\$ 200
\$ 20,001	\$ 230
\$ 25,001	\$ 271
\$ 30,001	\$ 304
\$ 35,001	\$ 334
\$ 40,001	\$ 373
\$ 50,001	\$ 400
\$ 60,001	\$ 433
\$ 70,001	\$ 465
\$ 80,001	\$ 498
\$ 90,001	\$ 530
\$ 100,001	\$ 563
\$ 120,001	\$ 633
\$ 140,001	\$ 659
\$ 160,001	\$ 693
\$ 180,001	\$ 727
\$ 200,001	\$ 790

ABOVE \$250,000 AN ADDITIONAL \$25 FOR EVERY ADDITIONAL \$20,000 OR PART THEREOF.

**BUILDING RESEARCH LEVY**

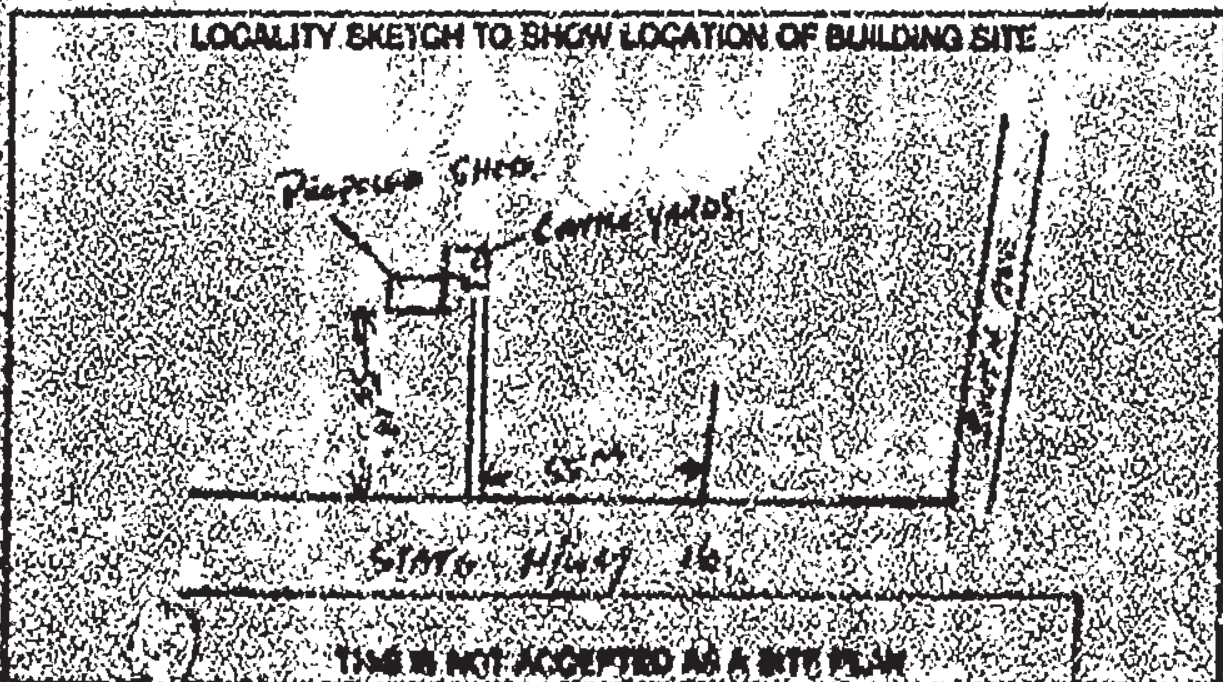
THE LEVY IS \$1.00 (PLUS GST) FOR EACH \$1,000 (OR PART \$1,000) OF THE TOTAL VALUE.

NOTE: THIS LEVY IS PAYABLE ON ALL WORK VALUED \$20,000 AND OVER.

**INSPECTION FEE FOR OLD OR USED TIMBER OR SECONDHAND BUILDINGS**

- (a) INSPECTIONS OUTSIDE COUNTY \$100
- (b) INSPECTIONS WITHIN THE COUNTY \$40

PROVIDED THAT WHERE AN INSPECTION IS REQUIRED OUTSIDE A RADIUS OF 50 KILOMETRES FROM THE APPROPRIATE DISTRICT OFFICE OR HEAD OFFICE OF THE COUNTY, PUBLIC SERVICE MILEAGE RATES SHALL BE LEVIED IN ADDITION TO THE ABOVE CHARGES.

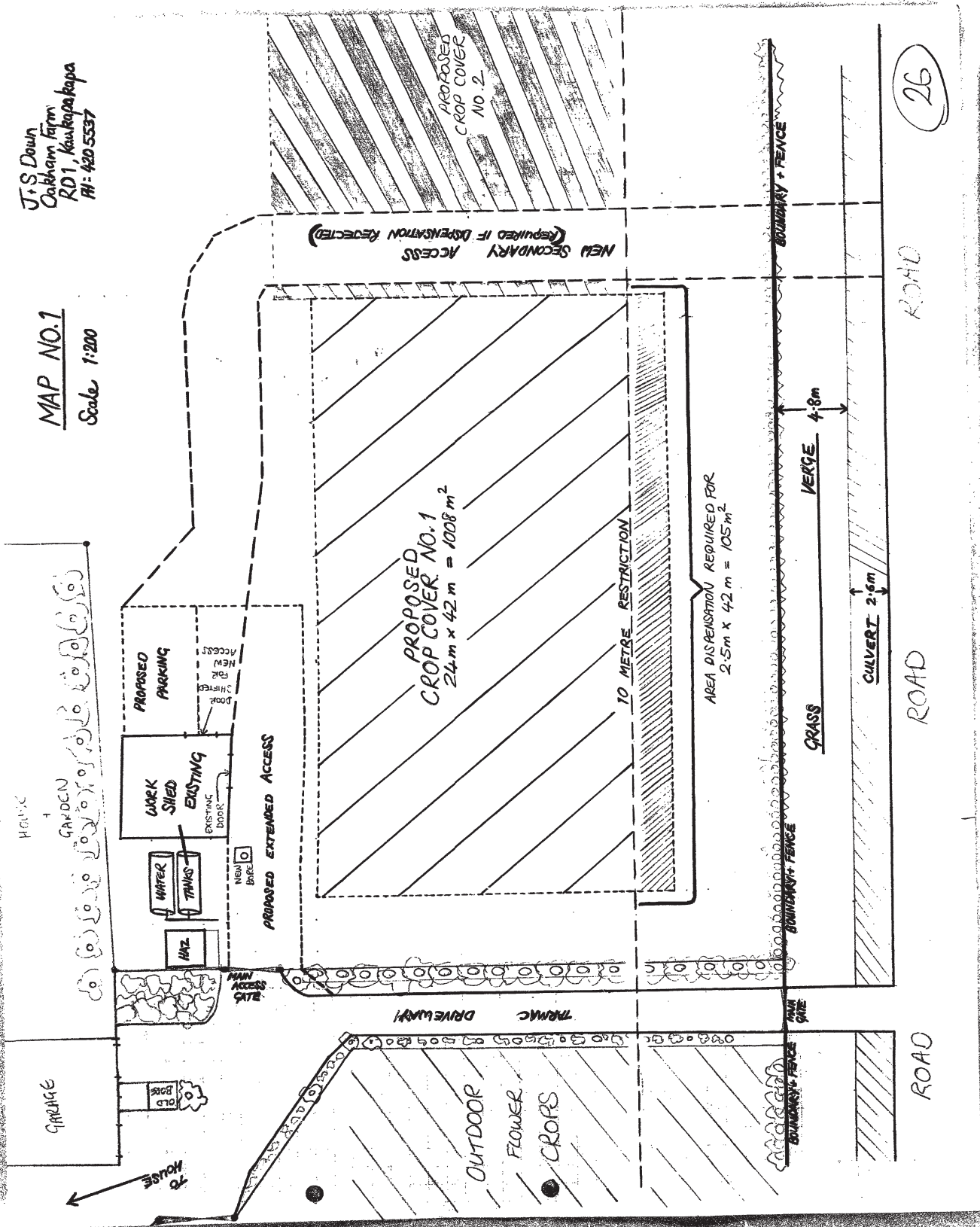




J+S Down  
Cobham Farm  
RD1, Kawarapa kapa  
PH: 420 5537

MAP NO.1

Scale 1:200



26

micro images



2

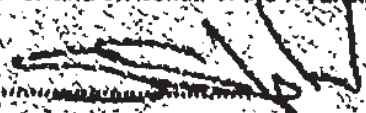
**BUILDING CONSENT NO:** ABA 952949

Project Information Memorandum No: ABA 952949

Section 35, Building Act 1991

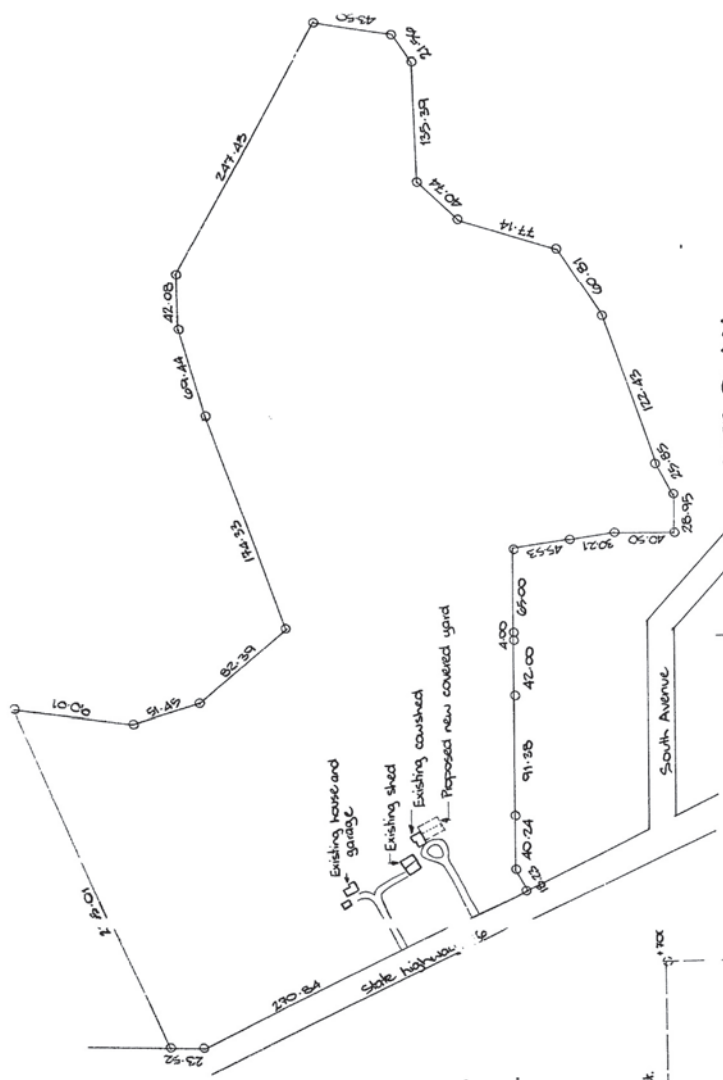
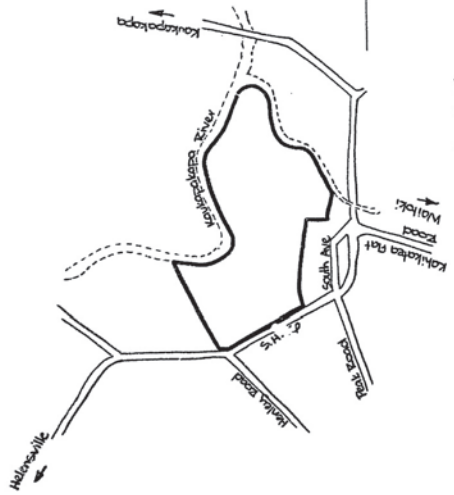
**ISSUED BY: RODNEY DISTRICT COUNCIL**

(Insert a tick in each applicable box. Attach relevant documents)

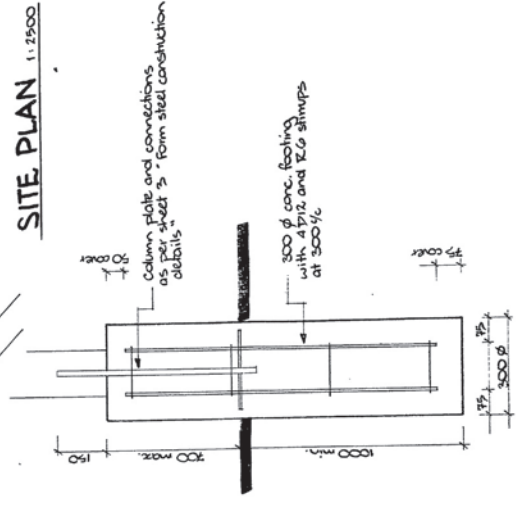
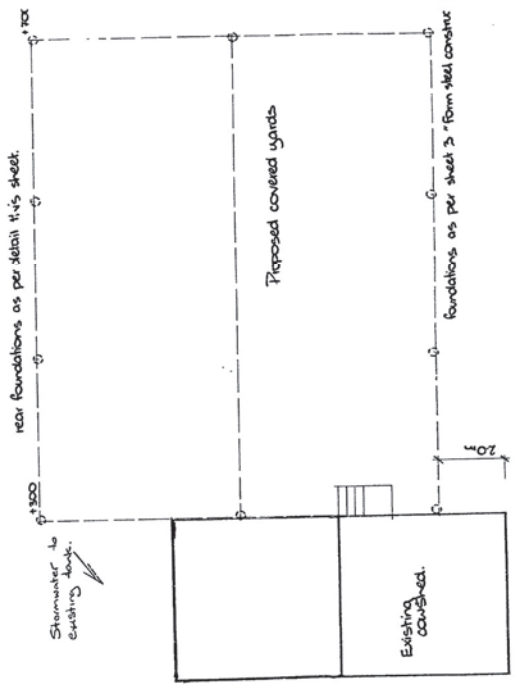
APPLICANT	PROJECT
<p>Name: MACLENNAN, ROBERT HUGH</p> <p>Mailing Address:            CT 787 KAIPARA COAST HIGHWAY, KAUKAPAKAPA</p>	<p>Alteration <input checked="" type="checkbox"/></p> <p>Stage No ..... of an intended ..... stages</p>
<p><b>PROJECT LOCATION</b></p> <p>Street Address:            CT 787 KAIPARA COAST HIGHWAY, KAUKAPAKAPA, KAUKAPAKAPA</p>	<p>New Building <input checked="" type="checkbox"/></p> <p>Alteration <input type="checkbox"/></p> <p>Intended Use(s) in detail:            RESIDENTIAL</p>
<p><b>LEGAL DESCRIPTION</b></p> <p>Property Number: 1021312</p> <p>Valuation Roll No: 30710 1200</p> <p>Legal Description:            LOT 1 DP 144973</p>	<p>Intended Life:            Indefinite, not less than 60 years <input checked="" type="checkbox"/></p> <p>Specified as ..... years</p> <p>Demolition <input type="checkbox"/></p> <p>Estimated Value: \$16000</p>
<p><b>COUNCIL CHARGES</b></p> <p>The balance of Council's charges payable on uplifting of this building consent, in accordance with the tax invoice are:</p> <p>Total: \$</p> <p><b>ALL FEES ARE GST INCLUSIVE</b></p>	<p>Signed for and on behalf of the Council:</p> <p>Name: </p> <p>Position: District Building Inspector</p> <p>Date: 24 NOV 1995</p>

This building consent is a consent under the Building Act 1991 to undertake building work in accordance with the attached plans and specifications so as to comply with the provisions of the building code. It does not affect any duty or responsibility under any other Act nor permit any breach of any other Act.

This building consent is issued subject to the conditions specified in the attached ..... page headed "Conditions of Building Consent No. ...."



PLANS AND SPECIFICATION  
**APPROVED**  
 SUBJECT TO SUCH CONDITIONS AS ARE TO BE ENDORSED ON OR APPENDED TO BUILDING CONSENT  
 SIGNED [Signature]  
 BUILDING INSPECTOR  
 DATE 23-11-25



REAR FOUNDATION DETAIL 1:10

COVERED YARDS SETOUT 1:100

REAR FOUNDATION DETAIL 1:10

82





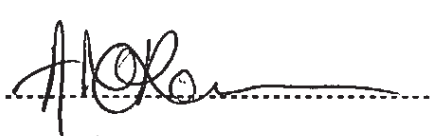


BUILDING CONSENT NO: ABA 32513

PROJECT INFORMATION MEMORANDUM NO: ABA 32513

Section 35, Building Act

ISSUED BY: RODNEY DISTRICT COUNCIL

APPLICANT	PROJECT
Name: MACLENNAN, ROBERT HUGH Mailing Address: C/- PAUL GRAHAM 26 BRIGHTSIDE ROAD STANMORE BAY	All <input checked="" type="checkbox"/> Description: NEW CONSTRUCTION Nature: DWELLING  Intended Use(s) in detail: Residential
<b>PROJECT LOCATION</b>	
Street Address: 787 KAIPARA COAST HIGHWAY SH16, KAUKAPAKAPA,	Intended Life: Indefinite, but not less than 50 years
<b>LEGAL DESCRIPTION</b>	
Property Number: 5507967 Valuation Roll No: 30710 12800 B Legal Description: LOT 1 DP 144373	Estimated Value: 104000
<b>COUNCIL CHARGES</b>	Signed for and on behalf of the Council:
The balance of Council's charges payable on uplifting this building consent, in accordance with the tax invoice are:  Total: \$ .....	Name:  Date: 15/10/03
<b>ALL FEES ARE GST INCLUSIVE</b>	

This building consent is a consent under the Building Act 1991 to undertake building work in accordance with the attached plans and specifications so as to comply with the provisions of the building code. It does not affect any duty or responsibility under any other Act nor permit any breach of any other Act.

This building consent is issued subject to the conditions specified in the attached pages headed "Conditions of Building Consent No." ABA 32513



**COMPUTER FREEHOLD REGISTER  
UNDER LAND TRANSFER ACT 1952**



Search Copy

*R. W. Muir*  
Registrar-General  
of Land

**Identifier** NA85C/817  
**Land Registration District** North Auckland  
**Date Issued** 28 March 1991

**Prior References**

NAS4C/883 NA70A/926

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**Estate** Fee Simple  
**Area** 18.6987 hectares more or less  
**Legal Description** Lot 1 Deposited Plan 144373

**Proprietors**

Robert Hugh MacLennan and Maireire Susan MacLennan

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**Interests**


D676503.2 Mortgage to McVeagh Kennedy Solicitors Nominee Company Limited - 30.1.2002 at 3.28 pm


**Appendix C:**

**Historic Aerial Photography**

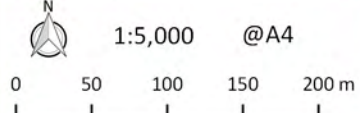




 Approximate Site Boundary

 Kaipara Coast Highway

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AA2116: 787 Kaipara Coast Highway PSI  
**Aerial Photograph of the Site Taken in 1999**  
Plan prepared for Grandview Estates Ltd. by 4Sight Consulting.


Date: 25/08/2016  
Version: 1.0  
Author: Kyle Redshaw  
Checked: Nigel Mather  
Approved: Alice Andrew

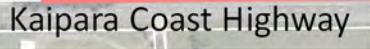


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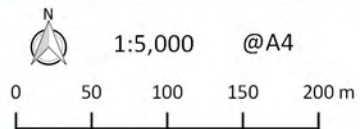


 Approximate Site Boundary

 Kaipara Coast Highway

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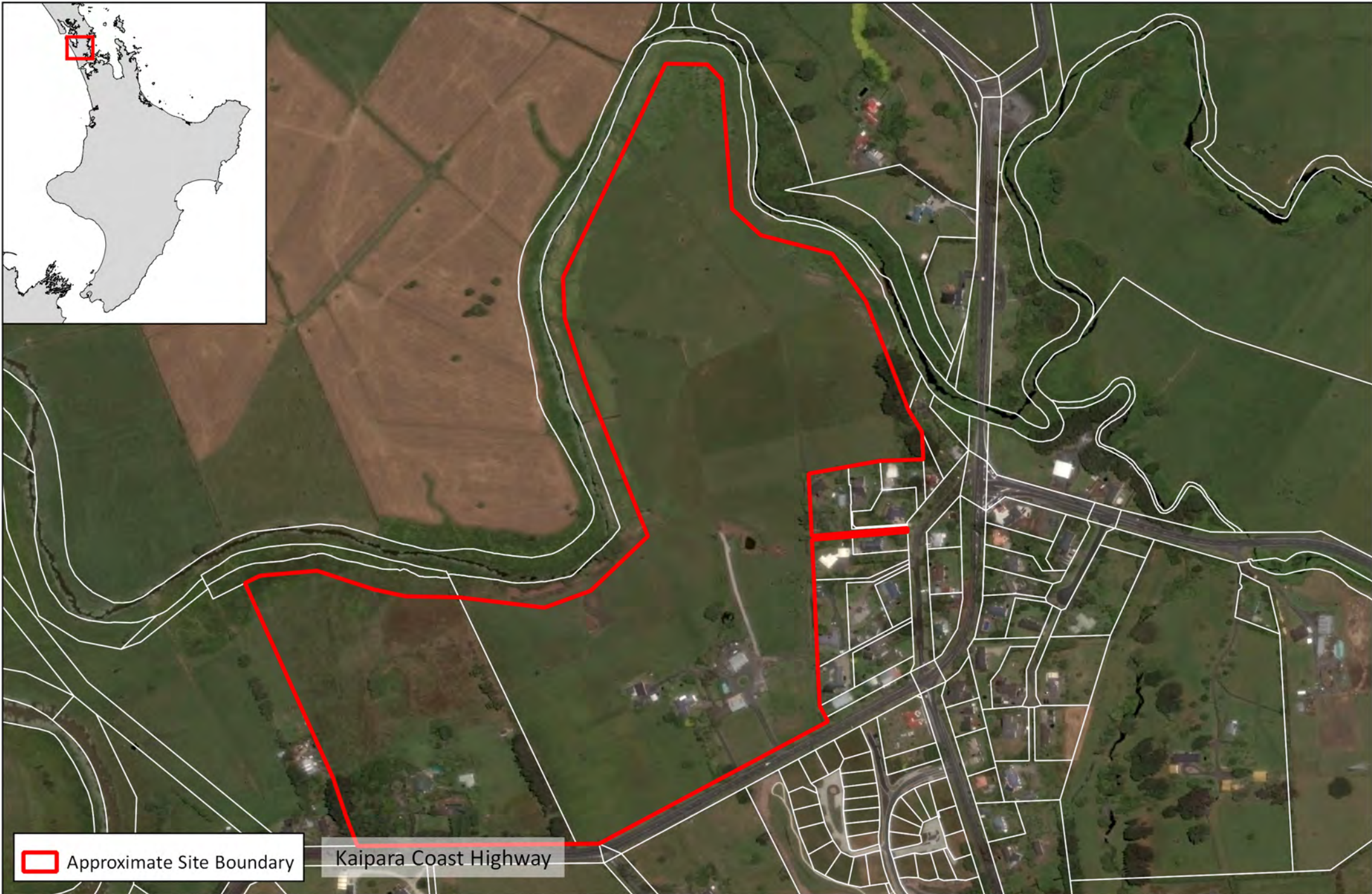


AA2116: 787 Kaipara Coast Highway PSI  
**Aerial Photograph of the Site Taken in 2006**  
Plan prepared for Grandview Estates Ltd. by 4Sight Consulting.

Date: 25/08/2016  
Version: 1.0  
Author: Kyle Redshaw  
Checked: Nigel Mather  
Approved: Alice Andrew





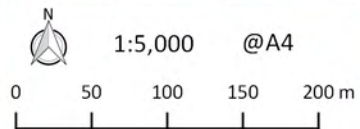


Approximate Site Boundary

Kaipara Coast Highway

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AA2116: 787 Kaipara Coast Highway PSI  
**Aerial Photograph of the Site Taken in 2016**  
Plan prepared for Grandview Estates Ltd. by 4Sight Consulting.

Date: 25/08/2016  
Version: 1.0  
Author: Kyle Redshaw  
Checked: Nigel Mather  
Approved: Alice Andrew





**Appendix D:**

**Photos of the Site Walkover and Bore Hole Locations**



Photo 1: The workshop, facing south.



Photo 2: Residential dwelling, facing west.



Photo 3: The redundant cow shed, facing south.



Photo 4: Old farming and fencing equipment behind the redundant cow shed, facing north east.



Photo 5: Paddocks, facing north west.



Photo 6: The old effluent retention ponds, facing north west.



Photo 7: KC1 with the workshop in the background, facing north west.



Photo 8: KC2 with the redundant cow shed in the background, facing north.



Photo 9: KC3, on the old feed pad, facing west.



Photo 10: KC4 on the slope that runs to the retention pond, facing north.



Photo 11: Soil profile of KC1, same as all the other sites.



Photo 12: Soil sample KK1 in the previous poly house area. Facing south west.





Photo 13: Soil sample KK2, in the previous poly house area. Facing south east.



Photo 14: Workshop, facing north west.

**Appendix E:**

**Laboratory Analysis**

# ANALYSIS REPORT

Page 1 of 2

<b>Client:</b>	4SIGHT Consulting Limited	<b>Lab No:</b>	1620004	SPV1
<b>Contact:</b>	Nigel Mather C/- 4SIGHT Consulting Limited PO Box 911310 Victoria Street West Auckland 1142	<b>Date Received:</b>	22-Jul-2016	
		<b>Date Reported:</b>	03-Aug-2016	
		<b>Quote No:</b>	79095	
		<b>Order No:</b>	AA2116	
		<b>Client Reference:</b>	AA2116 Kaipara Coast Highway	
		<b>Submitted By:</b>	S Yap	

Sample Type: Soil					
Sample Name:	KC1_50	KC2_50	KC3_50	KC4_50	
	21-Jul-2016 9:50 am	21-Jul-2016 10:25 am	21-Jul-2016 10:50 am	21-Jul-2016 11:20 am	
Lab Number:	1620004.1	1620004.2	1620004.3	1620004.4	
Individual Tests					
Dry Matter	g/100g as rcvd	64	85	78	73
Heavy Metals, Screen Level					
Total Recoverable Arsenic	mg/kg dry wt	6	5	< 2	4
Total Recoverable Cadmium	mg/kg dry wt	0.24	0.55	< 0.10	0.44
Total Recoverable Chromium	mg/kg dry wt	17	12	6	8
Total Recoverable Copper	mg/kg dry wt	18	13	5	20
Total Recoverable Lead	mg/kg dry wt	10.1	20	7.0	182
Total Recoverable Nickel	mg/kg dry wt	11	8	2	3
Total Recoverable Zinc	mg/kg dry wt	64	57	21	137
Polycyclic Aromatic Hydrocarbons Screening in Soil					
Acenaphthene	mg/kg dry wt	< 0.04	< 0.03	< 0.03	< 0.03
Acenaphthylene	mg/kg dry wt	< 0.04	< 0.03	< 0.03	< 0.03
Anthracene	mg/kg dry wt	< 0.04	< 0.03	< 0.03	< 0.03
Benzo[a]anthracene	mg/kg dry wt	< 0.04	< 0.03	< 0.03	< 0.03
Benzo[a]pyrene (BAP)	mg/kg dry wt	< 0.04	< 0.03	< 0.03	< 0.03
Benzo[b]fluoranthene + Benzo[j]fluoranthene	mg/kg dry wt	< 0.04	< 0.03	< 0.03	< 0.03
Benzo[g,h,i]perylene	mg/kg dry wt	< 0.04	< 0.03	< 0.03	< 0.03
Benzo[k]fluoranthene	mg/kg dry wt	< 0.04	< 0.03	< 0.03	< 0.03
Chrysene	mg/kg dry wt	< 0.04	< 0.03	< 0.03	< 0.03
Dibenzo[a,h]anthracene	mg/kg dry wt	< 0.04	< 0.03	< 0.03	< 0.03
Fluoranthene	mg/kg dry wt	0.04	< 0.03	< 0.03	0.03
Fluorene	mg/kg dry wt	< 0.04	< 0.03	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	mg/kg dry wt	< 0.04	< 0.03	< 0.03	< 0.03
Naphthalene	mg/kg dry wt	< 0.17	< 0.13	< 0.14	< 0.15
Phenanthrene	mg/kg dry wt	< 0.04	< 0.03	< 0.03	< 0.03
Pyrene	mg/kg dry wt	< 0.04	< 0.03	< 0.03	< 0.03
Total Petroleum Hydrocarbons in Soil					
C7 - C9	mg/kg dry wt	< 10	< 8	< 9	< 9
C10 - C14	mg/kg dry wt	< 20	< 20	< 20	< 20
C15 - C36	mg/kg dry wt	< 40	< 40	< 40	< 40
Total hydrocarbons (C7 - C36)	mg/kg dry wt	< 70	< 70	< 70	< 70

## Analyst's Comments

It was observed that the containers for samples 1620004/1,2 & 4 were not completely filled. Volatile loss may have occurred due to the headspace created in the container.



# SUMMARY OF METHODS

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively clean matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis.

Sample Type: Soil			
Test	Method Description	Default Detection Limit	Sample No
TPH Oil Industry Profile + PAHscreen	Sonication in DCM extraction, SPE cleanup, GC-FID & GC-MS analysis. Tested on as received sample. US EPA 8015B/MfE Petroleum Industry Guidelines [KBIs:5786,2805,10734;2695]	0.010 - 60 mg/kg dry wt	1-4
Heavy Metals, Screen Level	Dried sample, < 2mm fraction. Nitric/Hydrochloric acid digestion US EPA 200.2. Complies with NES Regulations. ICP-MS screen level, interference removal by Kinetic Energy Discrimination if required.	0.10 - 4 mg/kg dry wt	1-4
Dry Matter (Env)	Dried at 103°C for 4-22hr (removes 3-5% more water than air dry) , gravimetry. US EPA 3550. (Free water removed before analysis).	0.10 g/100g as rcvd	1-4

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Samples are held at the laboratory after reporting for a length of time depending on the preservation used and the stability of the analytes being tested. Once the storage period is completed the samples are discarded unless otherwise advised by the client.

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Ara Heron BSc (Tech)  
Client Services Manager - Environmental

# ANALYSIS REPORT

Page 1 of 2

<b>Client:</b>	4SIGHT Consulting Limited	<b>Lab No:</b>	1638146	SPV1
<b>Contact:</b>	Nigel Mather C/- 4SIGHT Consulting Limited PO Box 911310 Victoria Street West Auckland 1142	<b>Date Received:</b>	27-Aug-2016	
		<b>Date Reported:</b>	05-Sep-2016	
		<b>Quote No:</b>	79095	
		<b>Order No:</b>	AA2116	
		<b>Client Reference:</b>	AA2116 Kaipara Coast Highway	
		<b>Submitted By:</b>	Nigel Mather	

Sample Type: Soil						
Sample Name:		KK1_100 24-Aug-2016 11:00 am	KK2_100 24-Aug-2016 11:18 am			
Lab Number:		1638146.1	1638146.3			
Individual Tests						
Total Recoverable Arsenic	mg/kg dry wt	4	25	-	-	-
Total Recoverable Copper	mg/kg dry wt	8	81	-	-	-
Total Recoverable Lead	mg/kg dry wt	22	73	-	-	-
Organochlorine Pesticides Screening in Soil						
Aldrin	mg/kg dry wt	< 0.010	< 0.010	-	-	-
alpha-BHC	mg/kg dry wt	< 0.010	< 0.010	-	-	-
beta-BHC	mg/kg dry wt	< 0.010	< 0.010	-	-	-
delta-BHC	mg/kg dry wt	< 0.010	< 0.010	-	-	-
gamma-BHC (Lindane)	mg/kg dry wt	< 0.010	< 0.010	-	-	-
cis-Chlordane	mg/kg dry wt	< 0.010	< 0.010	-	-	-
trans-Chlordane	mg/kg dry wt	< 0.010	< 0.010	-	-	-
Total Chlordane [(cis+trans)* 100/42]	mg/kg dry wt	< 0.04	< 0.04	-	-	-
2,4'-DDD	mg/kg dry wt	< 0.010	< 0.010	-	-	-
4,4'-DDD	mg/kg dry wt	< 0.010	< 0.010	-	-	-
2,4'-DDE	mg/kg dry wt	< 0.010	< 0.010	-	-	-
4,4'-DDE	mg/kg dry wt	< 0.010	< 0.010	-	-	-
2,4'-DDT	mg/kg dry wt	< 0.010	< 0.010	-	-	-
4,4'-DDT	mg/kg dry wt	< 0.010	0.026	-	-	-
Total DDT Isomers	mg/kg dry wt	< 0.06	< 0.06	-	-	-
Dieldrin	mg/kg dry wt	< 0.010	< 0.010	-	-	-
Endosulfan I	mg/kg dry wt	< 0.010	< 0.010	-	-	-
Endosulfan II	mg/kg dry wt	< 0.010	< 0.010	-	-	-
Endosulfan sulphate	mg/kg dry wt	< 0.010	< 0.010	-	-	-
Endrin	mg/kg dry wt	< 0.010	< 0.010	-	-	-
Endrin aldehyde	mg/kg dry wt	< 0.010	< 0.010	-	-	-
Endrin ketone	mg/kg dry wt	< 0.010	< 0.010	-	-	-
Heptachlor	mg/kg dry wt	< 0.010	< 0.010	-	-	-
Heptachlor epoxide	mg/kg dry wt	< 0.010	< 0.010	-	-	-
Hexachlorobenzene	mg/kg dry wt	< 0.010	< 0.010	-	-	-
Methoxychlor	mg/kg dry wt	< 0.010	< 0.010	-	-	-

## SUMMARY OF METHODS

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively clean matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis.

Sample Type: Soil			
Test	Method Description	Default Detection Limit	Sample No

Sample Type: Soil			
Test	Method Description	Default Detection Limit	Sample No
Environmental Solids Sample Preparation	Air dried at 35°C and sieved, <2mm fraction. Used for sample preparation. May contain a residual moisture content of 2-5%.	-	1, 3
Organochlorine Pesticides Screening in Soil	Sonication extraction, SPE cleanup, dual column GC-ECD analysis (modified US EPA 8082).. Tested on dried sample	0.010 - 0.06 mg/kg dry wt	1, 3
Total Recoverable digestion	Nitric / hydrochloric acid digestion. US EPA 200.2.	-	1, 3
Total Recoverable Arsenic	Dried sample, sieved as specified (if required). Nitric/Hydrochloric acid digestion, ICP-MS, screen level. US EPA 200.2.	2 mg/kg dry wt	1, 3
Total Recoverable Copper	Dried sample, sieved as specified (if required). Nitric/Hydrochloric acid digestion, ICP-MS, screen level. US EPA 200.2.	2 mg/kg dry wt	1, 3
Total Recoverable Lead	Dried sample, sieved as specified (if required). Nitric/Hydrochloric acid digestion, ICP-MS, screen level. US EPA 200.2.	0.4 mg/kg dry wt	1, 3

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Samples are held at the laboratory after reporting for a length of time depending on the preservation used and the stability of the analytes being tested. Once the storage period is completed the samples are discarded unless otherwise advised by the client.

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Ara Heron BSc (Tech)  
Client Services Manager - Environmental



**Attachment 3:**  
Stantec Response Letter



10 September 2021

Riverview Properties Limited  
c/o The Planning Collective  
P.O Box 591  
Warkworth  
Auckland 0941

Dear Burnette,

### **Riverview Properties Ltd Plan Change Request – 751 & 787 Kaipara Coast Highway, Kaukapakapa**

Stantec is pleased to provide the following response to the Clause 23 request for further information received from Auckland Council on the above project.

## 1. Introduction

Following receipt of the plan change application, Auckland Council has issued a request for further information under Clause 23 of the Resource Management Act 1991 ("**Clause 23 request**") attached to your email dated 27 August 2021. This letter addresses the transport related matters raised within the Clause 23 request, for the Private Plan Change ("**PPC**"). These queries are quoted for ease of reference and responded to below.

## 2. Response to Clause 23 Requests

### 2.1 Point T1 – Potential transport outcomes of rezoning

*"Please confirm that the private plan change request is being sought to enable the development of residential 'lifestyle' dwellings rather than the wider scope of activities which are provided for in the proposed rezoning of the sites to Residential – Rural and Coastal Settlement Zone."*

*Reason: "Table H2.4.1 of the Auckland Unitary Plan outlines a number of activities which are permitted, discretionary or restricted discretionary within the Residential – Rural and Coastal Settlement Zone, which are not considered within the ITA."*

*The ITA should include a range of potential land-use scenarios, and their effects upon traffic patterns and generation if the anticipated land use includes additional activities provided for under the Residential – Rural and Coastal Settlement Zone. This would be required to understand the potential long-term transport effects which could result from the rezoning, in the context of the longer-term growth of Kaukapakapa."*

#### Response:

It is understood that the PPC and subdivision facilitates the development of lifestyle dwellings as indicated on the concept plans, with no other activities on site. Care centre activities for up to ten people on site (excluding staff) are permitted activities not requiring a transportation assessment (A19 of Table H2.4.1 in the Unitary Plan) however the activity is still subject to the rules and standards of E27.6 in the Unitary Plan. Any future or alternative subdivision application (for activities other than those current proposed) would be supported by transport assessment at that time.



## 2.2 Point T2 – Scope of assessment to support private plan change request

*“Please provide reasoning for not including the subdivision and development that could also occur on 751 Kaipara Coast Highway, Kaukapakapa.”*

*Reason: “While it is acknowledged in the Section 32 that there is ‘no intention to further develop the property at 751 Kaipara Coast Highway’, the assessment of traffic effects should take into account the subdivision and development that could occur on 751, not just the 16 sites proposed for 757.*

*This is required to gain a holistic picture of the cumulative transport effects of the potential development that could occur under the proposed rezoning of both of the sites to Residential – Rural and Coastal Settlement Zone.”*

Response:

The property at 751 Kaipara Coast (Lot 36) may be subdivided into three additional lots in the future. However at this time, it is only considered as part of the PPC and not in the plans for subdivision as the existing dwelling will likely need to be retained. The trip generation associated with the three additional lots is estimated to be in the order of 5 additional trips during the peak hours (using 1.4 trips per dwelling per hour). The traffic effects from three additional dwellings would have a less than minor effect on the transport network. This is reflected in the acceptable level at which the SH16 / MacLennan Farm Lane intersection will operate as set out in Table 6-5 in the ITA (operating with LOS B for the worst movement).

It is noted that 751 Kaipara Coast Highway will likely obtain access from SH16 (as per existing arrangements) and the level of service at the SH16 / MacLennan Farm Lane intersection reflects the operation of SH16. It is expected that the majority of additional traffic, though limited, will drive through this intersection.

## 2.3 Point T3 – Section 2.1.2 Existing Road Network

*“General comment”*

*Reason: First paragraph – description should include that the site also has a road frontage with Awatiro Drive – not just SH16 and Kaipara Coast Highway.”*

It is acknowledged that Awatiro Drive forms a part of the site frontage.

## 2.4 Point T4 – Section 2.1.3.2 Public Transport

*“Please provide more information about the standard of the public transport service including:*

- *frequency*
- *travel times*
- *standard of the bus stops and pedestrian access between the proposed sites and the bus stops.”*

*Reason: “There is insufficient information in terms of access to, and quality of, the local bus stop. There is a lack of pedestrian paths on the state highway to the bus stop. The east bound bus stop lack any amenities e.g. shelter or seating. There is not a nearby westbound bus stop.”*

Response:

Reference is made to Appendix B in the ITA for the 128 route (Helensville to Hibiscus Coast Station) map, timetable, and applicable bus stops. The frequency of route 128 is hourly, running Monday to Friday starting at 5:00am and ending service at 8:00pm. The route takes approximately 40 minutes to complete.

As stated in Section 4.2 of the ITA, the rural nature of the site will result in a low number of pedestrian journeys and a comparatively low demand for public transport. The existing bus stop facilities near the site currently are considered to be sufficient to support the PPC and subdivision as sought.

## 2.5 Point T5 – Section 7.1 Auckland Plan 2050

*“Please provide reasoning on how the focus areas for Auckland relates to the proposed plan change request.”*

*Reason: “While the ITA sets out the focus areas for Auckland, there is no discussion on how the proposed private plan change is consistent with these.*

*Note: The reference to ‘the new draft Auckland Plan’ needs updating – the plan was updated in 2018 and is no longer the ‘new draft’”*

Response:

Response for each focus area indicated below in Table 1.

**Table 1: Auckland Plan 2050 Focus Areas**

<b>Auckland Plan 2050 Focus Area</b>	<b>Description</b>	<b>PC and subdivision Alignment with Focus Area</b>
1	Make better use of existing transport networks	The existing public transport facilities will be sufficient for the scale and nature of development as proposed, making efficient use of the existing transport networks. Pedestrian and cyclists are adequately accommodated for.
2	Target new transport investment to the most significant challenges	This development will not have a significant impact on the transport network, therefore will not pose a significant challenge. The PPC will not generate a need for any upgrade or extension to the existing network.
3	Maximise the benefits from transport technology	With facilities for modes other than private vehicles that serves the development, future residents and visitors will have the choice in which mode they can use to travel to and from the site. The Auckland Plan 2050 cites a choice of transport modes as beneficial for the use of technology to plan improved journeys, easing congestion. This benefits users, particularly in rural areas, as they do not need to rely solely on private vehicles and can plan their journey with a choice of multiple modes.
4	Make walking, cycling and public transport preferred choices for many more Aucklanders	Access to existing bus facilities near the site is provided in reasonable proximity to the PPC land. The facility provides connectivity to bus route 128 connecting the site to the Hibiscus Coast and south to Auckland. The route runs hourly during workdays, making the service accessible.
5	Better integrate land-use and transport	With pedestrians, cyclists, and public transport connections facilitated in this development, the site is located in an area that is considered to encourage better transport connections.

Auckland Plan 2050 Focus Area	Description	PC and subdivision Alignment with Focus Area
6	Move to a safe transport network, free from death and serious injury	As indicated in the ITA the existing crash history in the vicinity of the site does not indicate a presence of any inherent safety issues with the road network. The proposed development, along with its low expected traffic generation, will not exacerbate any negative safety outcomes on the road network.
7	Develop a sustainable and resilient transport system	The accommodation for pedestrians, cyclists, and public transport connections in this proposal is not considered to adversely affect the emissions associated with additional private vehicle travel. The proposed development can access a number of shared and mobility transport services as technology for those modes increases over time. The proposal does not adversely affect the resilience of the transport system as it does not preclude the ability of future connections for all transportation modes to the existing transport network or neighbouring sites .

## 2.6 Point T6 – Section 4.2 Pedestrian and cyclists

*“Please provide additional assessment in relation to future pedestrian infrastructure which may be required in conjunction with the subdivision and development enabled by the plan change.”*

*Reason: “The ITA should consider whether a footpath should be provided on the western side of MacLennan Farm Lane along with an extension of the footpath on the eastern side of this road to serve the bus stop on Kaipara Coast Highway.”*

Response:

As stated previously, and within Section 4.2 of the ITA, the expected demand for pedestrian and cycle movement is low based on the nature and extent of the existing surrounding transport network for these modes. The additional effect associated with this proposal will generate negligible additional demand and does not warrant extension of the footpath network. The existing pedestrian infrastructure is considered acceptable for this development (for 751 and 787 Kaipara Coast Highway). The walkway connection between Awatiro Drive and South Avenue allows access for pedestrians to walk to the nearby bus stops; and the footpaths on Awatiro Drive and MacLennan Farm Lane will sufficiently cater for pedestrians and cyclists.

## 2.7 Point T7 – Section 7.2 GPS on Land Transport Funding

*“Please provide an explanation on how the GPS relates to the proposed plan change request”*

*Reason: “While the ITA sets out the priorities, there is no discussion on how the proposed private plan change is consistent with this plan.*

*This section also needs to be updated to reflect the current GPS on land transport 2021/2022-2030/2031.”*

Response:

The Government Policy Statement on Land Transport 2021/22 – 2030/31 outlines the four strategic policies: Safety, Better Travel Options, Climate Change, and Improving Freight Connections. The development's alignment with these policies is summarised as follows:

- **Safety** – the low trip generation of the development, as well as the road safety effects (or lack thereof) outlined in section 3.2 of the ITA, will not have any negative impact on the safety environment in the vicinity of the site.
- **Better Travel Options** – public transport is currently provided, as well as connections for pedestrians and cyclists.
- **Climate Change** – the connected public transport, pedestrian, and cyclist network previously mentioned facilitates for sustainable travel modes consistent with the expectations of such modes in this general vicinity.
- **Improving Freight Connections** – The PPC will not accommodate nor generate significant freight activity; however, current road infrastructure will be used by the development and is considered adequate for any residential-based freight connections/deliveries to and from the wider transport network.

## 2.8 Point T8 – Section 7.3 Auckland Regional Land Transport Plan

*“Please provide an explanation on how this RLTP relates the proposed plan change request”*

*Reason: “While the ITA summarises what the RLTP is, there is no discussion on how the proposed private plan change request is consistent with this plan.*

*This section also needs to be updated to reflect the current RLTP 2021-2031.”*

Response:

The Regional Land Transport Plan 2021 – 2031 outlines the pathway forward for responding to Auckland’s transport challenges, shown in **Figure 1**. It is considered that with the proposed development, sustainable travel choices (active modes, public transport) are provided for with existing infrastructure. This allows for



Figure 1: RLTP 'The Pathway Forward'  
(Source: Auckland Transport, RLTP)

mode choice, as well as reduction in greenhouse gas emissions. Access and connectivity of the site is also adequate with the bus route 128 connecting to Hibiscus Coast. Safety was also considered in the ITA in section 2.3, with the low trip generation of the site not deemed to exacerbate any negative effects on the road network.

## 2.9 Point T9 – Section 7.4 Auckland Regional Public Transport Plan

*“Please explain how this plan relates to the proposed plan change request”*

*Reason: “While the ITA summarises what the RPTP is, there is no discussion on how the proposed private plan change request is consistent with this plan.”*

Response:

It is considered that the existing public transport infrastructure will adequately serve the proposed development. The existing walkway to the nearby bus stop, as well as footpaths near the site allows for more people to access the 128 bus service. The development is therefore well connected, while meeting customer needs and encouraging an increase in public transport mode share.

## 2.10 Point T10 – Section 7.5 Auckland Unitary Plan

*“Please provide an assessment against B3.3.1 (Transport objectives)”*

*Reason: “The ITA refers to the objectives of E27.2. However, this does not encompass the regional policy statement objectives of B3.3.1.”*

Response:

B3.3.1 in the Unitary Plan outlines the following objectives:

*“1) Effective, efficient, and safe transport that:*

- a) supports the movement of people, goods and services;*
- b) integrates with and supports a quality compact urban form;*
- c) enables growth;*
- d) avoids, remedies or mitigates adverse effects on the quality of the environment and amenity values and the health and safety of people and communities; and*
- e) facilitates transport choices, recognises different trip characteristics and enables accessibility and mobility for all sectors of the community.”*

It is considered that the development aligns with these objectives. The existing footpaths and bus service in the vicinity of the site enables mode choice and supports the movement of people with active modes. As outlined in section 3.2 of the ITA, the development of 16 lots (plus the three additional lots associated with 751 Kaipara Coast Highway, for up to 20 lots) enabled by the PPC is not considered to have any adverse effects on the safety of the road environment in the vicinity of the site, leading to a safer setting for the community. The less than minor effect associated with this small scale of development is apparent from the SH16 / MacLennan Farm Lane intersection operation results as set out in Table 6-3 to 6-5 in the ITA.



## 2.11 Point T11 – Section 7.6

*“Please provide the analysis of the key policies and plans for Auckland (paragraph 1) that shows how it was concluded that the private plan change request is consistent with the various plans included in the ITA.”*

*Reason: “The ITA has not shown how the proposed private plan change requests fits in with the key policies and plans outlined in the ITA. It is not clear how the plan change will provide for better integration into the wider transport network.*

*Six paragraph – Kaukapakapa is considered to be a rural settlement in the context of the AUP and the Auckland Plan, so this proposal should not be described as development adjacent to an existing town centre. The ITA has not established that from a transport perspective, the plan change assists in meeting the AUP objectives for a quality compact form.*

*Final paragraph – the ITA has not established ‘the above assessments show that the PPC is generally in alignment with the overarching themes and strategic priorities of the transport plans and policies discussed above’.*

*Note: It is considered that the comment about the shortage of residential land in the area (paragraph 2) is outside the scope of an ITA. Similarly, the fourth paragraph about retaining a rural built character.”*

Response:

As discussed above, the proposed development aligns with the overarching themes outlined in the GPS, RLTP, and RPTP. Providing a connection to the wider transport network, the development will use currently existing infrastructure to sufficiently connect the site to the wider transport network. This includes existing pedestrian provisions connecting to the bus stop and 128 bus service, as well as the current road infrastructure in the area, connecting the site to the wider Auckland area.

## 2.12 Point T12 – Waste collection and other servicing

*“Please provide confirmation that the Jointly Owned Access Lots (if to be utilised by waste collection and other service vehicles) will be fit for purpose.”*

*Reason: “While the ITA states that future parking and loading provisions for the new development will be in accordance with the AUP provisions, there is no information provided in relation to waste collection arrangements.*

*Will waste collection be undertaken by public or private means? Will waste collection vehicles require access within one or both JOALs? If this is the case, will the JOALs be fit to accommodate appropriate sizes of vehicles and manoeuvring arrangements, with regards to gradients and the no exit configuration of the JOAL serving lots 1, 2, 3, and 5?*

*Note: It is accepted that the technical level details, such as vehicle tracking and compliance with the AUP Transport Chapter requirements would be expected to be provided at a later stage.”*

Response:

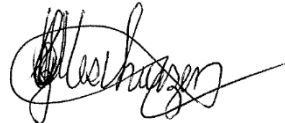
This will be further explored in the detailed design stage. It is considered that the JOAL is wide enough (8m) to accommodate a rubbish pick-up truck. The flat topography of the site would also be advantageous ensuring efficient waste collection.

We trust this assessment meets your requirements, however, please do not hesitate to contact us if you have any queries on the above.

Yours sincerely



Elliot Martin  
**Graduate Transportation Engineer**



Gerhard van der Westhuizen  
**Project Transportation Engineer**



Don McKenzie  
**Private Sector Leader – Transportation (Auckland)**

**Stantec New Zealand**

**Attachment 4:**  
Stormwater Management Plan



# PROPOSED PLAN CHANGE

# STORMWATER MANAGEMENT PLAN

751 & 787 KAIPARA COAST HIGHWAY,  
KAUKAPAKAPA

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RIVERVIEW PROPERTIES LTD

September 2021

REPORT 1664- 2




ASPIRE CONSULTING ENGINEERS

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Revision History

Revision N <sup>o</sup>	Prepared By	Description	Date

Document Acceptance

Action	Name	Signed	Date
Prepared by	P Fairgray		9/09/2020
Reviewed by	P Fairgray		9/09/2020
Approved by	E Peters		9/09/2020





### **Limitations**

This assessment contains the professional opinion of Aspire Consulting Engineers Ltd as to the matters set out herein, in light of the information available to it during the preparation, using its professional judgement and acting in accordance with the standard of care and skill normally exercised by professional engineers providing similar services in similar circumstances. No other express or implied warranty is made as to the professional advice contained in this report.

We have prepared this report in accordance with the brief as provided and our terms of engagement. The information contained in this report has been prepared by Aspire Consulting Engineers Ltd at the request of the client and is exclusively for its client use and reliance. No responsibility or liability to any third party is accepted for any loss or damage whatsoever arising out of the use of or reliance on this assessment by any third party.

The assessment is also based on information that has been provided to Aspire Consulting Engineers Ltd from other sources or by other parties. The assessment has been prepared strictly on the basis that the information that has been provided is accurate, completed, and adequate. To the extent that any information is inaccurate, incomplete or inadequate, Aspire Consulting Engineers Ltd takes no responsibility and disclaims all liability whatsoever for any loss or damage that results from any conclusions based on information that has been provided to Aspire Consulting Engineers Ltd.

**Executive Summary**

The proposed Stormwater Management Plan outlines the overall impacts and management strategy for stormwater generated from the proposed Plan Change at 751 & 787 Kaipara Coast Highway, Kaukapakapa.

Stormwater from future developments will be managed through an integrated treatment train approach, with at source devices. Devices such as swales, reuse tanks will be incorporated to provide some level of treatment and attenuation.

The following performance criteria will be used within the Plan Change area:

<b>Performance Criteria</b>	<b>Design Method</b>
<b>Water Quality</b>	Design in accordance with GD001 requirements for water quality treatment for any JOAL/driveway serving more than 5 houses
<b>Stream Hydrology</b>	
<b>Retention and detention</b>	<ul style="list-style-type: none"> <li>• Have consent notice on lots requiring minimum 45,000 litres of water storage for re-use.</li> <li>• Provide subsoil drain in the base of grass swales to provide retention to ground.</li> </ul>
<b>Flooding</b>	
<b>10% AEP</b>	Assess downstream network and include additional attenuation if required onsite or upgrades to wider network.
<b>1% AEP</b>	Not required, due to tidal reach of downstream catchment.

This report has highlighted critical investigations which will be specifically required for future developments for the Plan Change area, these include:

Actions at Resource Consent Stage for Stormwater Management:

- Design of grassed swale
- Assessment of the downstream culverts on Kaipara Coast Highway confirming their capacity and include any further attenuation within site or possible upgrades.
- Provide Consent notice on titles for 45,000 litres of reuse per dwelling
- Provide Consent Notice for inert building materials
- Provide operation and maintenance manual for all stormwater devices.

Overland flow will maintain the current entry point and will discharge at the same exit point of the site.

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**1.0 Existing Site Appraisal**

The Plan Change area is located 751 & 787 Kaipara Coast Highway, Kaukapakapa. Overall area proposed for rezoning equates to 5.7Ha.

The majority of the site is grass or tree vegetation with several existing dwellings, driveways and ancillary buildings.

The proposal is to rezone these titles from a Rural – Countryside Living Zone to Residential-Rural and Coastal Settlement Zone.

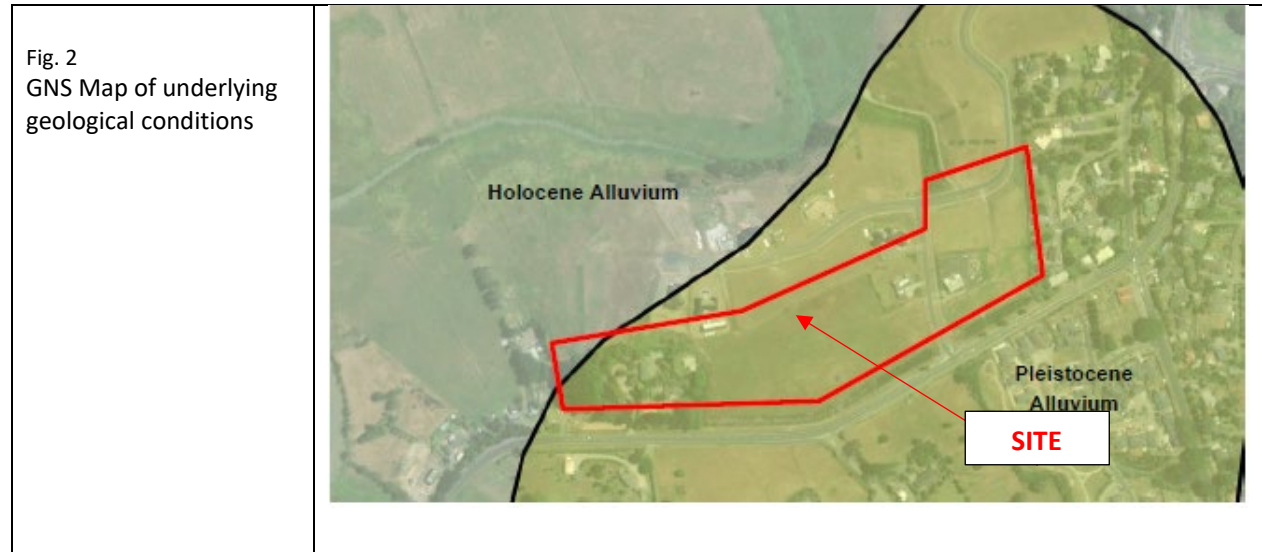
Topography

The site has a gradual fall from the centre to the east and west with a highest elevation of 20mRL down to a lowest level of 15mRL at the western boundary.



Geotechnical/Soil Conditions

A desktop review of the Geological and Nuclear Sciences (GNS) geological maps within the area suggest the geology of the area as Holocene river deposits of the Tauranga Group on the lower portion of the site and older Middle to Late Pleistocene alluvial deposits of the Tauranga Group on the higher elevated portion of the site. Both of these geologies are shown to be underlain by East Coast Bays Formation rock of the Waitemata Group.



Existing Hydrological features and Stormwater Infrastructure

The site is located at the very lower reaches of the Kaukapakapa River catchment. The Kaukapakapa River is tidal adjacent to the site.

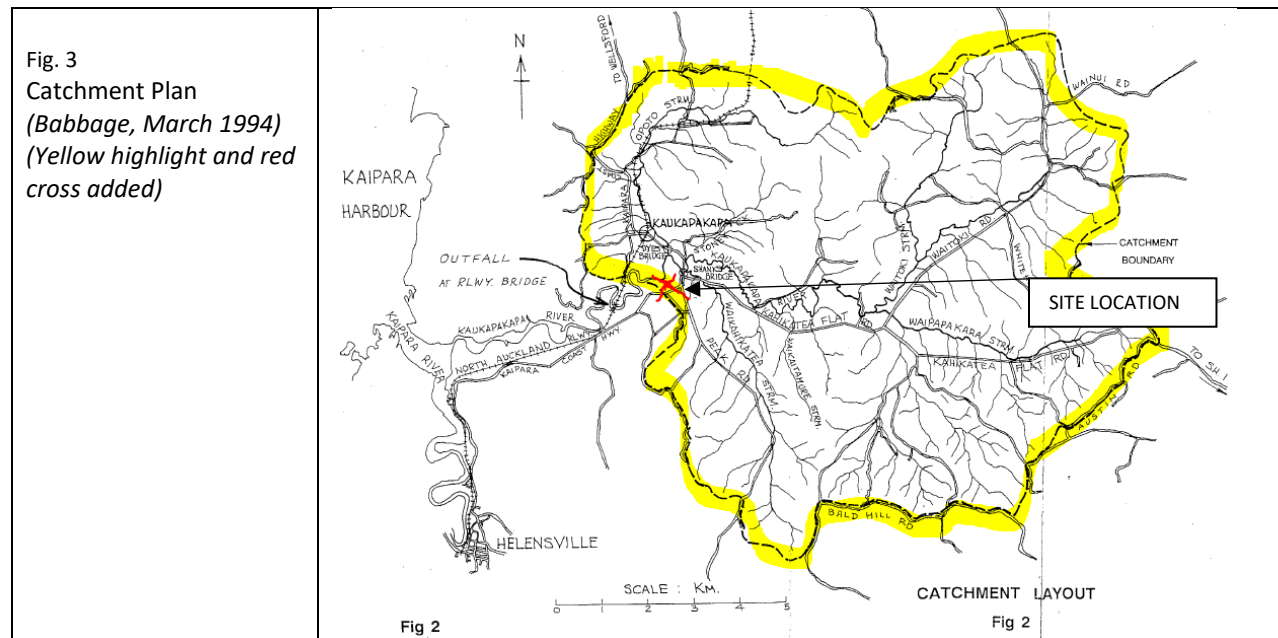




Fig. 4  
Existing drainage  
features within Plan  
Change from AC GIS



Receiving Environment

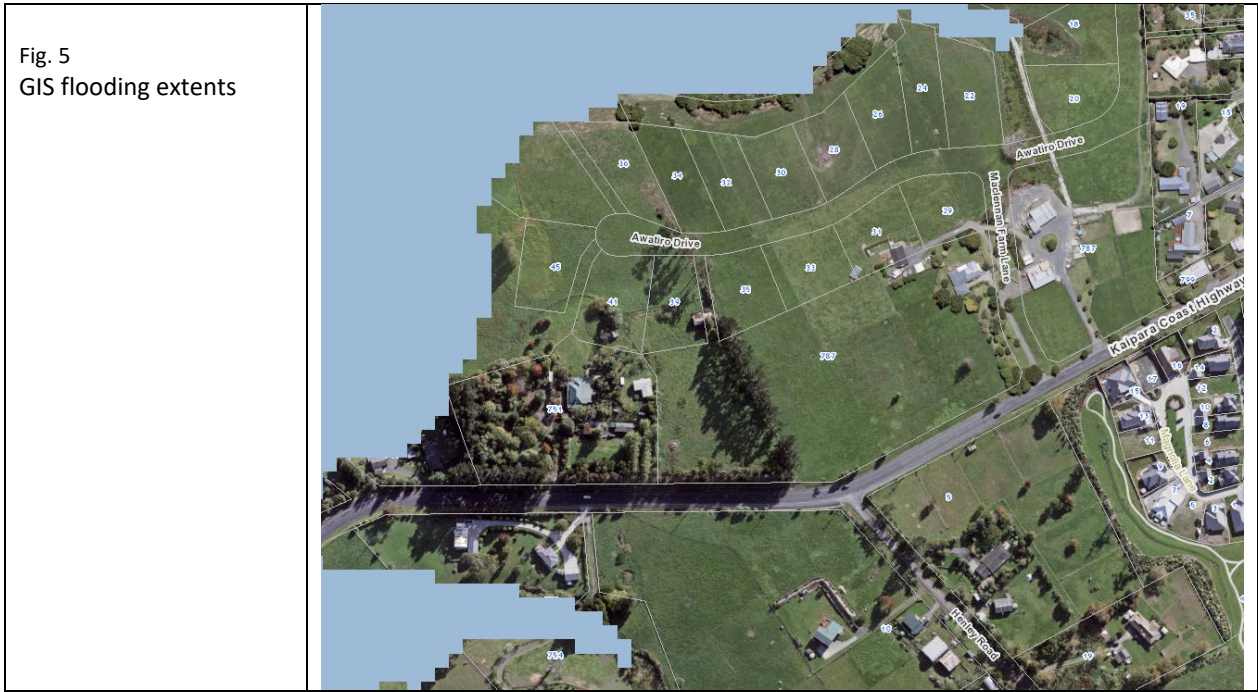
Flows from the proposed plan change area will discharge to existing drainage channels which is tributaries of Kaukapakapa River.

The western portion of the plan change area discharges into the roadside drain on Kaipara Coast Highway and the eastern portion of the plan change area discharges towards the north.

Flooding and flow paths

Figure 4 shows 2 existing overland flowpaths within the Plan Change area. These overland flowpaths were modified as part of the previous development around the site. The new overland flowpaths are not expected to be modified as part of the plan change and are clear of proposed building platforms.

The Auckland Council GIS indicates no flooding within the plan change area as shown in figure 5.



The GIS indicates downstream flooding is present directly adjacent to the Plan Change area.

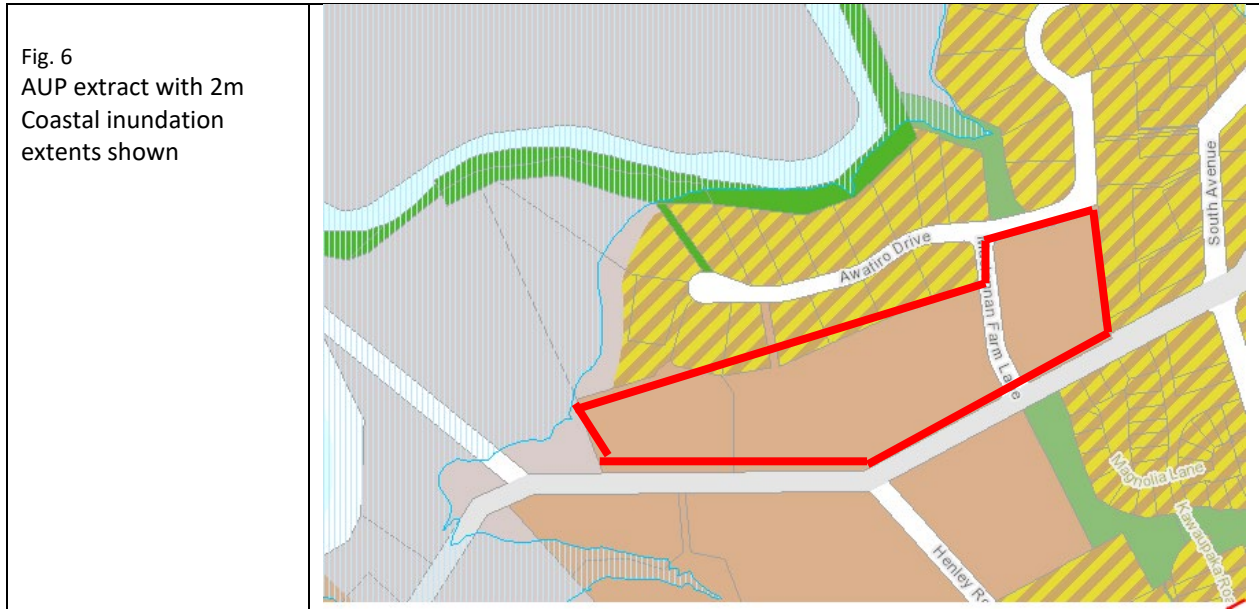
The previous adjacent development implemented a “pass it forward” approach for larger storm events.

The “pass it forward” approach was deemed appropriate due to the location of the site in relation to the wider catchment. Larger flows from upstream with longer peak times would coincide with attenuated flows from the Plan Change area, resulting in exacerbated flooding scenarios.

It is noted that downstream capacities of the network including culverts will require review at time of Resource Consent or EPA with any capacity constraints identified and if required, attenuation for these restrictions would need to be included or proposed upgrades in future development proposals.

Coastal Inundation

The Kaukapakapa River is within the coastal inundation zone with the 2m sea level rise. Tidal impacts shown in figure 6 that the site is not affected by coastal inundation.



Biodiversity

The site generally is considered agricultural use. No further ecological survey is considered necessary.

Cultural and Heritage Sites

The Plan Change area has not noted Cultural or Heritage features which would need management.

Contaminated Land

The Plan Change area has no high generating activities which would be considered as generating contaminants.

**2.0 Development Summary**

At this stage, there are partial details around the development of the site.

A concept scheme plan is shown in figure 7.



Fig. 7  
 Concept scheme plan for  
 a portion of the plan  
 change area



Earthworks

Generally, there will be earthworks proposed within the site to create roading and platforms to facilitate development of the site.

All earthworks will be designed and completed in accordance with Auckland Councils Guidelines for Land Disturbing activities (GD05) and geotechnical recommendations.

These will be assessed at the time of Resource Consent against the standard assessment criteria of the Auckland Unitary Plan.

Erosion and Sediment Controls

Erosion and sediment controls are to be installed prior to the commencement of any earthworks on the site and maintained for the full duration of the works.

Typical silt control measures will be utilized including silt fences, topsoil bunding, clean water diversion bunds and decanting earth-bunds all designed in accordance with Auckland Councils GD05 document.

These will be assessed at time of Resource Consent against the standard assessment criteria of the Auckland Unitary Plan.

### **3.0 Mana Whenua Matters**

Acknowledgement and recognition of Maori values are key to ensuring Partnership between Tangata Whenua and the development of the land. As such the Core Maori Values have been considered at this early stage of development.

#### *The Core Māori Values (Auckland Council Design Manual)*

Core Māori values have informed the development of earlier Māori design principles. These process-oriented principles have provided the foundation for, and underpin the application of, the outcome-oriented Te Aranga Māori Design Principles.

- Rangatiratanga: The right to exercise authority and self-determination within one's own iwi / hapū realm
- Kaitiakitanga: managing and conserving the environment as part of a reciprocal relationship, based on the Māori world view that we as humans are part of the natural world
- Manaakitanga: the ethic of holistic hospitality whereby mana whenua have inherited obligations to be the best hosts they can be
- Wairuatanga: the immutable spiritual connection between people and their environments
- Kotahitanga: unity, cohesion and collaboration
- Whanaungatanga: a relationship through shared experiences and working together which provides people with a sense of belonging
- Mātauranga: Māori / mana whenua knowledge and understanding

These core Māori values are seen as underpinning and guiding the application of the seven Te Aranga Māori Design Principles.

Inclusion of devices such as swales etc. which treat stormwater through filtering contaminants through soil or vegetation will be viewed as meeting and conserving the environment as well as enhancing the unique and native ecosystems.



#### 4.0 Planning Assessment

The Planning Collective Limited has undertaken a planning assessment as set out below. This assessment addresses the relevant provisions of the Auckland Unitary Plan – Operative in Part (AUP) as they relate to stormwater management and associates water quality.

##### Chapter E8 Stormwater - Discharge and Diversion

These provisions address stormwater runoff from impervious areas which are either:

- Diverted and directed to a stormwater network or a combined sewer network; or
- Diverted and discharged to land, water or the coastal marine area.

The rules in this section regulate the diversion and discharge of stormwater runoff from impervious areas into or onto land or into water or into the coastal marine area pursuant to sections 14 and 15 of the Resource Management Act 1991.

Table E8.4.1 sets out the activity status. The provisions relevant to the Residential - Rural and Coastal Settlement zoning sought through the Proposed Plan Change have been outlined below:

AUP Rule		Activity Status
Diversion and discharge of stormwater runoff from impervious areas onto or into land or into water or to the coastal marine area pursuant to sections 14 and 15 of the Resource Management Act 1991		
(A10)	All other diversion and discharge of stormwater runoff from impervious areas not otherwise provided for	Discretionary
Diversion and discharge of stormwater runoff from impervious areas involving a stormwater network onto land or into water or to the coastal marine area pursuant to sections 14 and 15 of the Resource Management Act 1991		
(A11)	Diversion and discharge of stormwater runoff from an existing or a new stormwater network	Discretionary

Resource consent for development within the Proposed Plan Change area has been lodged with Auckland Council. This includes consents to subdivide the land to create 15 additional Residential – Rural and Coastal Settlement size lots (16 in total), associated earthworks and stormwater discharge consents that will be assessed against the Auckland Unitary Plan provisions for stormwater diversion and discharge and appropriate consents sought.

## 5.0 Stakeholder Engagement and Consultation

The following table includes a summary of the stakeholder engagement undertaken as part of the plan change application.

<u>Stakeholders</u>	<u>Reason for Interest</u>	<u>What type of engagement</u>	<u>Feedback</u>
<b><u>Kaukapakapa Residents and Ratepayers Association (KARRA)</u></b>	Feedback on the Private Plan Change proposal and subdivision of 787 Kaipara Coast Highway.	<ul style="list-style-type: none"> <li>• Site meeting with representatives of KARRA on 27 May 2021; and</li> <li>• Feedback letter provided by KARRA dated 14 June 2021.</li> </ul>	Supportive of the Private Plan Change and the proposed subdivision of 787 Kaipara Coast Highway.
<b><u>New Zealand Transport Agency / Waka Kotahi</u></b>	Feedback is sought in relation to the Plan Change Request and resource consent application lodged with Auckland Council to subdivide 787 Kaipara Coast Highway, Kaukapakapa.	<ul style="list-style-type: none"> <li>• Copy of Plan Change Request and resource consent application circulated to Waka Kotahi on 2 September 2021.</li> </ul>	As of 14 September 2021, a case manager has been assigned to project. No feedback has been provided as of this date.

## 6.0 Stormwater Management

The following section covers the stormwater management requirements for the Proposed Plan Change area:

### 6.1 *Principles of Stormwater Management*

#### Original Principles

The Auckland Council Regional Stormwater Network Discharge Consent (NDC) requires consideration of the following Principles:

- Water Quality – Ensuring contaminants are not discharged to the receiving environment.
- Stream Hydrology –
  - Retention – The discharge to ground for smaller events with the aim of recharging the groundwater.
  - Detention – Storage and slow release of a 24hr storm event with the aim of alleviating scour from the stream channel.
- Flooding frequency and Management 10 and 1 AEP
  - 10% AEP event – More frequent/nuisance flooding.
  - 1% AEP event – Larger storm event and protection of buildings and structures.

The following table outlines the initial Principles of Stormwater Management from the site.

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Performance Criteria	Appropriate for the site?	Reason
<b>Water Quality</b>	Y	Only JOAL/driveway serving more than 5 houses
<b>Stream Hydrology</b>		
<b>Retention</b>	Y	Increase of impervious areas resulting in less infiltration
<b>Detention</b>	N	Detention is not considered necessary as the properties will be fully serviced by roof water collection and the re-use amount would exceed any detention component.
<b>Flooding</b>		
<b>10% AEP</b>	N	Unless necessary for a capacity requirement, check at resource consent or EPA stage.
<b>1% AEP</b>	N	The site is located in the lower reaches of the catchment and attenuation would be detrimental.

## 6.2 Proposed Stormwater Management

### General

The Plan Change area has several stormwater considerations which will be carefully managed for future development options.

These include:

- Water Quality
- Stream Hydrology
- Flooding
- Overland Flow path management

The guiding principle for the Auckland Region is to utilize a “treatment train” for stormwater management.

This treatment train approach is considered the Best Practicable Option (BPO) for future developments. Auckland Council’s GD001 guideline identifies the Treatment Train in the following stages.

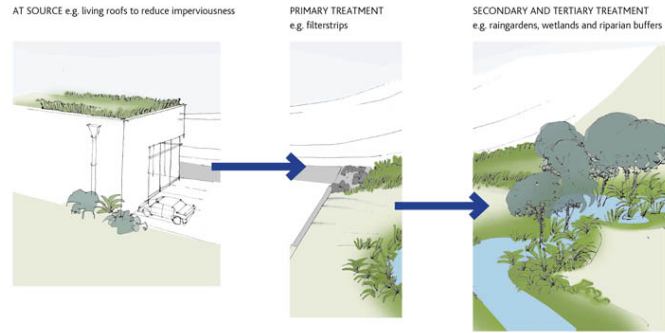
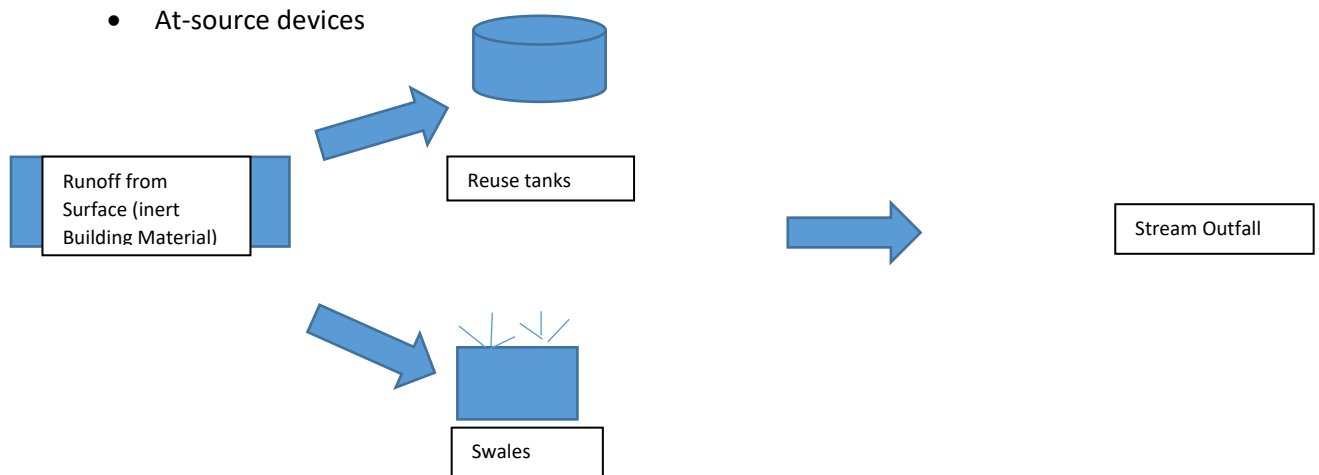


Figure 5 - GD04 – Example Treatment Train Diagram

Further development within the Plan Change Area should look to demonstrate the treatment train approach as part of Best Practicable Option BPO for stormwater management.

Treatment Train

A SW treatment train has been identified as being appropriate for the development:



- Inert Building Materials
- Water Quality – Swales
- Retention – Reuse Tanks

This is considered the BPO for the site. There are no proposed public roads or high contamination generally areas within the Plan Change area. As a best practice, runoff from any JOAL/driveway serving more than 5 houses should be treated.

The properties will collect roof water and have full re-use. It is expected that each property would have approximately 45,000 litres of water storage for water supply.

Water Quality

The stormwater runoff from roofs will be collected for water re-use and will not require treatment.

There are no proposed public roads or high contamination generally areas within the Plan Change area. As a best practice, it is recommended that runoff from any JOAL/driveway serving more than 5 houses should be treated by grass swales.

- Action – Design of swales to be in accordance with GD001 requirements.
- Provide Consent notice to require inert building materials for roof runoff.

Stream Hydrology

Stream hydrology on the lots will be provided by full re-use of water within the dwellings. Each property would have approximately 45,000 liters of water storage.

Previous guideline documents from Auckland Council (ARC) deemed that capture and reuse of rainwater generally provided an overall reduction in runoff post development from the roof area.

Example – Using a 25m<sup>3</sup> tank for a 250m<sup>2</sup> provides 100% of water supply for the dwelling.

This SMP requires an additional 20m<sup>3</sup> of retention capacity, which far outweighs any SMAF detention volume required.

250 m<sup>2</sup> Roof Area

Water use in litres per day	Average Yearly % of Water Supplied					
	Rain Tank Capacity (Litres)					
	200	1000	3000	4500	9000	25000
125	55%	85%	100%	100%	100%	100%
225	40%	65%	90%	95%	100%	100%
325	35%	60%	80%	85%	95%	100%
500	25%	45%	65%	70%	85%	95%
600	25%	45%	60%	65%	75%	90%
1000	20%	35%	45%	50%	60%	70%

On this basis, we consider the volume of reuse tanks onsite would provide mitigation of the SMAF detention requirement.



The grass swale for any JOAL/driveway serving more than 5 houses will provide a level of detention but it is recommended that a subsoil drain is installed in the base of the swale which will provide additional detention and allow retention.

- Action – Have consent notice on lots requiring minimum 45,000 litres of water storage for re-use.
- Action – Install subsoil drains in the base of grass swales.

#### Flooding

Larger storm events are proposed to discharge the site unattenuated. This is due to the fact that larger catchments upstream have a longer time of concentration, therefore if the site is attenuated flood waves will hit concurrently and exacerbate the flooding situation as per the adjacent development.

Council have confirmed that an assessment of the downstream network needs to be considered, if capacity is constrained downstream, then attenuation for this restriction does need to be included.

- Action - Investigate downstream capacity of culvert and structures as part of future development.
  - If required, include attenuation to meet capacity constraints of downstream infrastructure.
  - Engage with Stakeholder to negotiate the upgrade of culvert

#### Overland Flowpath Management

The overland flow path through the site will need managed through site design to ensure no upstream or downstream impacts on adjacent properties and wider catchment.

- Action – Assess overland flow path through site and convey flows from the existing entry and exit points of the future development.

#### Asset Ownership

Devices which are required to manage site specific requirements such as tanks and grassed swales will be owned privately.

- Action – Provide consent notice on lots to maintain stormwater devices in perpetuity.

#### Ongoing Maintenance Requirements

Future stormwater devices shall include an ongoing operation and maintenance regime as part of future development.

- Action – Provide operation and maintenance manual for all stormwater devices.

**TABLE 6.2 – STORMWATER MANAGEMENT TOOLBOX FOR DEVELOPMENT**

<u>Activity</u>	<u>Hydrological Requirement</u>	<u>Recommended Mitigation</u>	<u>Guidelines</u>
Lots – Buildings	Water Quality	Use of Inert building materials for roof area.	Auckland Council GD01
	Stream Hydrology (retention and detention)	Have minimum 45,000 litres of re-use tank storage (private)	Auckland Council GD01 Auckland Council GD04
	Attenuation if required by network constraint (10yr)	Mitigation for the 10yr event if network constraints exist through the following devices. <ul style="list-style-type: none"> <li>○ Detention tanks (private ownership)</li> </ul>	Auckland Council GD01 Auckland Council GD04
JOAL/driveway serving more than 5 houses	Water Quality	Provide treatment through proprietary device such as <ul style="list-style-type: none"> <li>○ Swales (private)</li> </ul>	Auckland Council GD01 Auckland Council GD04
	Stream Hydrology (retention and detention)	Provide subsoil drain in the base of grass swales	Auckland Council GD01 Auckland Council GD04



## **7.0 Conclusion**

The future development of the site will require stormwater management and this can be managed onsite through various means, including swales and tanks.

Confirmation of downstream network constraints and required upgrades will need to be assessed at time of development.

There is no reason from a stormwater management perspective that the plan change should not proceed.

# End of Report

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