Notice of Requirement & Assessment of Environmental Effects Report

for the Minister of Education

for a New Designation under s168 of the RMA

Primary School (Years 0-8) and Early Childhood Education (ECE) at 13-15 Trig Road, Whenuapai, Auckland

4 June 2021







Quality Control

Title	Notice of Requirement & Assessment of Environmental
	Effects Report for the Minister of Education for a New
	Designation under s168 of the RMA: Primary School (Years
	0-8) and Early Childhood Education (ECE) at 13-15 Trig Road,
	Whenuapai, Auckland.
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Limitations:

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Overview

Requiring authority:	The Minister of Education
Territorial authority:	Auckland Council
Nature of Notice:	To enable the establishment of a new primary school catering for school students from Year 0 to Year 8, as well as a new Early Childhood Education Centre (ECE) catering for pre-school children. Refer to attached Designation Plan in Appendix A.
Site address:	13-15 Trig Road, Whenuapai, Auckland.
Legal description:	Lot 5 DP66045 (Title ID 192542)
Landowner:	Her Majesty the Queen (the Crown)

Auckland Unitary Plan - Operative in Part:

Modifications:

- Proposed Plan Change 5 Whenuapai (Proposed Residential Mixed Housing Urban Zone)
- Zones:
 - Future Urban Zone

Precincts:

• Nil

Overlays:

• Natural Resources: High-Use Aquifer Management Areas Overlay [rp] – Kumeu Waitemata Aquifer

Controls:

• Macroinvertebrate Community Index - Rural

Designations:

 ID 4311 Defence Purposes – protection of approach and departure paths (Whenuapai Air Base), Minister of Defence



Flood Plains and Overland Flow Paths

• Overland flow paths apply to parts of the site

Additional consents: No other consents are being sought as part of this notice of requirement, but resource consents will be required following detailed design to enable the school and ECE to be constructed and commence operations.

Regional consents and/or consent under the *Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011* may be required for bulk earthworks. Regional consents for on-site treatment and discharge of stormwater and wastewater will be required for the initial stage of school development which is planned to occur ahead of full urban development of the area as anticipated by Proposed Plan Change 5.



1.0 Introduction

The following document supports a Notice of Requirement (Notice) by the Minister of Education (the Minister), under s168 of the Resource Management Act 1991 (RMA). It includes an Assessment of Environmental Effects (AEE) Report.

In summary, the designation will enable the establishment of a new full primary school catering for school age children from Year 0 to Year 8, as well as a new Early Childhood Education Centre (ECE) catering for pre-school children. The new educational facilities are required to meet expected population growth and related school demand projections enabled by the Auckland Unitary Plan.

The new school is initially required to serve a temporary shortfall in the school network at Whenuapai North, Redhills and Hobsonville until new schools are acquired and built in these fast-developing locations. There is a forecast shortfall in student spaces in the existing school network of 600 by 2025. The area around the school site is zoned for future urban purposes in the Auckland Unitary Plan and is subject to a current plan change to transition to 'live' urban zones. The school and adjacent land is shown as having residential zonings of various intensities in the proposed plan change. Accordingly, the school will ultimately serve the local catchment as the area urbanises, and a master plan roll of up to 1000 and an ECE has been assumed in the longer term.

Section 171 of the RMA sets out the matters the territorial authority (Auckland Council) shall have regard to in considering this requirement for a new designation and making its recommendation to the requiring authority. This report assesses the proposed designation against the relevant parts of s171.

2.0 Site Description

The site is located at 13-15 Trig Road and has been held by the Crown for educational purposes for approximately 20 years. It is legally described as Lot 5 DP66045 (Title ID 192542) and is approximately 4ha in area. It is rectangular in shape with road frontage to Trig Road.

Trig Road is currently a rural road with one lane in each direction and narrow shoulders. There is a footpath on the western side only and no provision for on street parking or cycle lanes. The current posted speed limit is 80 km/hr. Trig Road connects to Hobsonville Road to the south and the Upper Harbour Motorway to the north (east facing ramps only) as well as extending beyond the motorway interchange to connect to Brigham Creek Road at the Whenuapai Airbase and village. An upgrade of Trig Road is proposed as part of the Supporting Growth Programme for the north-west part of



Auckland. This is understood to include two traffic lanes, a flush medium to support right turns into adjacent properties, footpaths on both sides of the road and cycling and public transport facilities. There is no confirmed timeframe for this upgrade.

The only other road in the immediate vicinity of the site is Ryans Road which is a cul-desac on the opposite side of Trig Road with footpath access from the head of the cul-desac to Trig Road generally opposite the school site, with the road connection to Trig road located south of the school site.

An existing dwelling (currently rented) and associated garage, driveway and amenity planting are located on the part of the site adjacent to Trig Road with the balance of the site in pasture with shelter planting along the north-eastern boundary. An access drive serving properties to the rear runs adjacent to the north-western boundary.



Figure 1: Site Location (Source: Auckland Unitary Plan)

The topography of the site is undulating with a gully feature generally in the centre of the site draining via an ephemeral overland flow path to a wetland system on the adjacent block to the south-east. A small portion of this wetland system extends in the school site in the immediate vicinity of the boundary.

The site and wider area are zoned Future Urban in the Auckland Unitary Plan (with the exception of a site zoned Open Space – Informal Recreation Zone located off Ryans



Road). Land uses in the area generally comprise a mix of residential sites accessed from Ryan Road and fronting Trig Road on the western side running south from Ryans Road, and larger blocks primarily used for lifestyle/grazing purposes. Whilst the current character of the area could be described as peri-urban, this area is subject to proposed urban zonings under Proposed Plan Change 5 to the Auckland Unitary Plan that will see the area transition to full urban development.

The 13-15 Trig Road site and adjacent sites are all proposed to be rezoned to Residential – Mixed Housing Urban Zone which anticipates medium intensity housing or up to three levels, whilst land on the opposite side of Trig Road is proposed to be rezoned to a mix of Residential - Mixed Housing Urban Zone and Residential - Terrace Housing and Apartment Zone. Accordingly, the area is expected to transition away from its current character towards full urbanisation.

There are currently no reticulated stormwater or wastewater services the area. Watercare water services are located in Trig Road.

3.0 The Minister's Objectives

The Minister is a requiring authority under section 166 of the RMA. The Minister has financial responsibility for state owned and funded schools, so may give the Council a notice of requirement for a designation for such works.

The Education and Training Act 2020 mandates the Minister of Education to designate schools. Those elected to the Board of Trustees are legally responsible for the management of their school, in the same manner as applies to all other State schools.

The project is required to provide opportunities for students to undertake their studies as provided for under the Education and Training Act 2020. Accordingly, the establishment of a full primary school catering for school age children from years 0-8, as well as the provision for ECE facilities catering for pre-school children, is reasonably necessary in achieving the objective of the Minster in providing state schooling.

Designation is considered to be the appropriate mechanism to provide for the establishment and on-going operation of the school and ECE for its proposed purpose. The Minister requires ongoing certainty that the site can be developed and used for this purpose. Designation provides the necessary long-term certainty and flexibility for operation of a school and pre-school on the site, while also identifying the use of the site to the general public. Most other State schools within Auckland Council's jurisdiction and within New Zealand are designated, with many of these containing existing or provision for ECE's.



4.0 Proposed New Designation in the Auckland Unitary Plan

The Minster requires the site to be designated for the purpose of *"Educational Purposes* – *Primary School (Years 0-8) and Early Childhood Education (pre-school)"*. The land area to be designated is approximately 4ha and is shown on the Designation Plan in Appendix A.

These educational facilities will be constructed in a staged manner. The new school is initially required to serve a shortfall in the school network at Whenuapai North, Redhills and Hobsonville until new schools are acquired and built in these fast-developing locations. There is a forecast shortfall in student spaces in the existing school network of 600 by 2025. The area around the school site is zoned for future urban purposes in the Auckland Unitary Plan and is subject to a current plan change to transition to 'live' urban zones. The school and adjacent land is shown as having residential zonings of various intensities in the proposed plan change. Accordingly, the school will ultimately serve the local catchment as the area urbanises with an anticipated master plan roll of up to 1000 and an early childhood education centre in the long term.

The two principal phases of school development are described as follows:

- Phase 1: Overflow school to serve a shortfall in the school network capacity in Whenuapai North, Redhills and Hobsonville.
- Phase 2: School and Early Childhood Education (ECE) to serve the long-term needs of the local adjacent school catchment as the adjacent area is live zoned and developed for urban purposes.

Due to the short-term forecast shortfall in school capacity in adjacent developing areas, the Minister proposes to open a school as soon as practicable using modular buildings. Similar modular buildings have been temporarily installed at the new Scott Point School at 11 Scott Road whilst construction of that school on another part of the site is completed. Depending on timing, these same modular buildings may be relocated to the Trig Road site. Alternatively, similar modular buildings can be constructed. Photos of the Scott Point School modular buildings are provided with the bulk and location feasibility study in Appendix C.

Initially it will be necessary to have on-site wastewater and stormwater treatment as until full urban development occurs in the area there are no existing three-waters infrastructure services other than water supply. These elements of the project will require regional resource consents. Over time as the area urbanises, reticulated



wastewater services will be extended to the area and a network wide stormwater system and network discharge consent will be implemented.

Road access will be to Trig Road although in the long term it is possible other local roads will be provided in the area to provide secondary access. Trig Road will need to be widened adjacent to the school to make it suitable for school access, and the Ministry of Education will work with Auckland Transport in regard to suitable speed limit restrictions to support a school at this location.

A small wetland protruding into the site at the south-eastern boundary has been identified, and it is confirmed that it will not be developed to protect its ecological function. A buffer area of 10m around this wetland where no earthworks or vegetation clearance will occur will be established. Further, wastewater disposal fields for on-site treatment will not be located within 20m of the wetland or overland flow paths on the site.

The hours when classes will be held on site are expected to be similar to most other schools. In general, core teaching hours for schools in New Zealand are undertaken on weekdays and can start between approximately 8:30am – 9.00am and end between 3.00pm – 3:30pm. However, some activities may occur outside of core school hours such as supervised care of school students after school hours, school sporting or cultural events or training, community education (night classes), school fairs etc.

The ECE would operate independently from the school with its own teaching facilities within the designated land.

No detailed design of the school and ECE has been undertaken at this stage, and as such plans for the development of the site are not included with this Notice. This will be addressed at the later Outline Plan stage for each major phase of school development.

A feasibility bulk and location study has been undertaken for the initial overflow school phase and later expanded capacity to serve the local student catchment as the area urbanises. This is shown in Figures 2 and 3 below and in Appendix C.

Whilst there may be other local roads constructed over time as the area urbanises as envisaged by Proposed Plan Change 5, the feasibility bulk and location plans show all vehicle access off Trig Road on the basis that it is the only existing road. Proposed Plan Change 5 shows an indicative future road along the south-eastern boundary of the school site. Whilst there is no certainty a future local road will be built on this exact alignment, the feasibility plans account for up to 10m of a future local road being constructed along the south-eastern boundary of the school site to not preclude this potential future opportunity. This could also potentially provide a future secondary vehicle access.





Figure 2: Phase 1 Bulk and Location Study Feasibility Plan (Source: Jasmax)





Figure 3: Phase 2 Bulk and Location Study Feasibility Plan (Source: Jasmax)



The Minster would not accept any condition linking the designation to these feasibility plans as it is a feasibility assessment of the site only to confirm the site is fit for purpose and to provide a realistic framework for assessing the effects of a future school on this site, and may not reflect the actual design. However, as is typical for any school and ECE facilities, some or all of the following are expected to be developed on the site:

- Buildings; including classrooms, hall, library, gymnasium, specialist teaching areas, administration office space, staff workspace, caretaker's facilities, dental clinic, sick bay, etc;
- Outdoor play area, sports field, hardcourts, playground structures;
- Vehicular, pedestrian and cycle access and egress, parking space for staff, visitors and cycles, onsite student drop off/pick up bays, onsite bus parking;
- Landscaping, and;
- Infrastructure services including water, sewerage, stormwater, telecommunications and outdoor lighting (initially onsite wastewater and stormwater treatment and discharge is proposed as these serves are not currently available to the area.

The proposed amendments to the Auckland Unitary Plan including the designation purpose and conditions for the proposed new designation are detailed in the Form 18 Notice of Requirement. The proposed purpose of the designation is:

Educational Purposes – Primary School (Years 0-8) and Early Childhood Education (Pre-School).

The standard conditions for schools in the AUP (see Appendix D) apply except where modified by the Notice of Requirement. Minor amendments are made to the standard noise condition to ensure this applies to the ECE, whilst the standard height in relation to boundary control condition is amended to take account of the controls in the proposed Auckland Unitary Plan zone that will apply to the site under Proposed Plan Change 5.

Additional site-specific conditions have been included with the intention that the effects they address will be subject to a further and more detailed design at the Outline Plan stage for each major development phase of the school following designation of the site. In particular, an 'establishment outline plan' condition is included to provide specific guidance on matters that need to be considered and demonstrated as part of the outline plan for the first substantive stage of each of the two main phases of school development. There is also an obligation for a Travel Plan to be prepared and implemented before the school opens. The Council has the ability to make comment and request changes once that more detailed information is available, in accordance with s176A of the RMA and has appeal rights where any requested changes are not adopted.



Specific designation conditions around potential soil contamination, on-site stormwater and wastewater discharges, and protection of the natural wetland are not proposed as part of the designation as they remain subject to other Auckland Unitary Plan regional consent requirements and National Environmental Standards (that require resource consent where the permitted activity requirements of those standards are not met).

Purpose Explanation

The *"educational purposes"* purpose for the new designation is consistent with other school designations in the Auckland Unitary Plan The meaning of *"educational purposes"* is set out with the standard conditions for all school designations in Chapter K, which is also attached in Appendix D to this report.

The purpose is further defined and clarified by the reference to the Primary School (Years 0-8), and ECE.

5.0 Statutory Assessment

The following provides a statutory assessment of the proposal in accordance with the RMA. The statutory and non-statutory documents assessed include:

- RMA;
- National Policy Statement on Urban Development 2020;
- National Policy Statement for Freshwater Management 2020;
- The Auckland Plan 2050 (an 'other matter' under s171(1)(d));
- Whenuapai Structure Plan 2016 (an 'other matter' under s171(1)(d));
- Auckland Unitary Plan (operative in part);
- The Resource Management (National Environmental Standards for Freshwater) Regulations 2020 (NES-FW); and
- The Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 ('the NES-Soils').

5.1 Resource Management Act 1991

The RMA provides for the use and development of New Zealand's natural and physical resources through:

• Part 2, which establishes the purpose and principles applying to resource consents and designations;



- Section 168, which enables a requiring authority to lodge a notice of requirement for a new designation; and
- Section 171, which subject to Part 2, prescribes the matters to which particular regard must be had in considering the effects on the environment of allowing the requirement.

The following sections of the RMA are most relevant to this notice.

Section 5 – Purpose

The purpose of the RMA is to promote the sustainable management of natural and physical resources. Sustainable management is defined in section 5(2) as:

... managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural wellbeing and for their health and safety while:

- (a) Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and
- (b) Safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and
- (c) Avoiding, remedying, or mitigating any adverse effects of activities on the environment.

The proposed school and ECE are consistent with the purpose and principles of Part 2 of the RMA as they enable the community to provide for their social, cultural and economic well-being by providing necessary community infrastructure to service the projected demand for school and pre-school education in the area. This not only provides for the well-being of the children and students that attend, but also for the wider community, as schools generally become focal points for community interaction (e.g. social interactions with other parents, school sport, fundraising activity etc.). The effects of the designation are evaluated later in this report and demonstrate that any actual and potential adverse effects on the environment will be able to be avoided, remedied or mitigated, and the life-supporting capacity of the wetland on the site periphery sustained.

Section 6 – Matters of National Importance

Section 6(e) requires the following matter of national importance to be recognised and provided for:

- a) The preservation of the natural character of the coastal environment (including the coastal marine area), wetland, and lakes and rivers ad their margins, and the protection of them from inappropriate subdivision, use and development.
- *e)* The relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga.



The natural character of the existing wetland (primarily on adjacent land) and its margins has been significantly compromised by pastoral farming use. The school project will ensure a suitable development buffer around the wetland and will provide opportunities for enhancement through planting. This area can also be built into education programmes to provide students with enhanced understanding of the functioning and importance of wetland systems.

Consultation undertaken with Auckland mana whenua is outlined in the consultation section of this AEE report below. Consultation undertaken with mana whenua has not raised any specific cultural concerns to date.

Section 7 – Other Matters

This section lists certain matters to which particular regard is to be had in making resource management decisions. The relevant matters are as follows:

- (a) Kaitiakitanga;
- (aa) The ethic of stewardship;
- (b) The efficient use and development of natural and physical resources;
- (c) The maintenance and enhancement of amenity values;
- (d) Intrinsic value of ecosystems;
- (f) Maintenance and enhancement of the quality of the environment;

Consultation undertaken with Auckland mana whenua is outlined in the consultation section of this AEE report below. Consultation undertaken with mana whenua has not raised any specific cultural concerns to date.

An assessment of the potential effects in respect of natural/physical resources, ecosystems, amenity values and the quality of the environment follows later in this report.

Section 8 – Treaty of Waitangi

This section requires those exercising powers or functions under the RMA to take into account the principles of the Treaty of Waitangi. It is considered that the principles of the Treaty of Waitangi have been taken into account in terms of the consultation undertaken to date with mana whenua, and any ongoing engagement that may be required as a result of this designation process and future project implementation resource consents. The site is not identified on Auckland Council's Geomaps as being subject to a Statutory Acknowledgement.

Section 168 – Notice of Requirement

The Minister of Education is a Minister of the Crown. This notice has been lodged with the relevant territorial authority under section 168(1) of the RMA.



Section 171 – Recommendation by the Territorial Authority

Under section 171, the territorial authority may recommend to the requiring authority one of the following:

- confirm the designation
- modify the designation
- impose conditions
- withdraw the requirement

This recommendation is based on matters the territorial authority is required to have particular regard to when considering a notice of requirement. The matters to be considered are set out in section 171(1) of the RMA and are as follows:

- (1) When considering a requirement and any submissions received, the territorial authority must, subject to Part 2, consider the effects on the environment of allowing the requirement, having particular regard to—
 - (a) Any relevant provisions of—
 - (i) a national policy statement,
 - (ii) a New Zealand coastal policy statement,
 - (iii) a regional policy statement, or proposed regional policy statement; and
 - (iv) a plan or a proposed plan; and
 - (b) Whether adequate consideration has been given to alternative sites, routes, or methods of undertaking work if—
 - (i) the requiring authority does not have an interest in the land sufficient for undertaking the work; or
 - (ii) it is likely that the work will have significant adverse effect on the environment; and
 - (c) Whether the work and designation are reasonably necessary for achieving the objectives of the requiring authority for which the designation is sought; and
 - (d) Any other matter the territorial authority considers reasonably necessary in order to make a recommendation on the requirement.

The proposal to designate this site has taken into account the relevant statutory planning documents identified above. The Auckland Unitary Plan is the key statutory planning document under the RMA requiring consideration under s171(1)(a). An assessment of the Auckland Unitary Plan is provided below.

The requiring authority has an interest in the land which has been held for approximately 20 years for educational purposes, and the work is not likely to have significant adverse environmental effects. Accordingly, it is not necessary to assess



alternative sites, routes or methods. However, a number of other sites were considered for this project, a summary of which is included later in this assessment.

Designation is considered to be the most appropriate method for the efficient delivery of educational services and for addressing a staged development that may occur over time and provides for the long-term planning certainty that is required by the Minister.

The project and designation are considered reasonably necessary for the provision of educational services by the Minister. The Minister's objectives are outlined earlier within this report.

An assessment of the AUP as well as an assessment of environmental effects are included within this report and collectively deal with the matters that are considered reasonably necessary for the Auckland Council to make a recommendation on the requirement.

Relevant "other matters" assessed in regard to s171(1)(d) have also been assessed. No relevant iwi management plans were identified for this particular project.

Section 176A – Outline Plan

An Outline Plan is required to undertake future development of the site once a designation is confirmed, so that the territorial authority is able to understand in detail the nature of proposed physical works, and if necessary request any changes prior to development. At this stage no design work for site or building layouts has been undertaken, aside from a feasibility plan to show at a high level the site is capable of accommodating the school and ECE.

5.2 National Policy Statement on Urban Development 2020

The proposal is consistent with the National Policy Statement on Urban Development 2020 (NPS-UD). The proposal will provide critical social infrastructure to support urban development to occur in accordance with growth enabled in adjacent areas under the Auckland Unitary Plan, and further growth proposed to be enabled under Proposed Plan Change 5, which supports the outcomes envisaged by NPS-UD.

Implementation Provision 3.38 of the NPS-UD requires Auckland Council to remove any rules from the Auckland Unitary Plan that have the effect of requiring a minimum number of car parks (other than accessible car parks). This provision does not apply to designations. The Minster is providing the standard Auckland school designation condition of two car parks per new classroom for this designation in recognition that the current and proposed future Trig Road cross section has no provision for on-street car parking, and the location of future local roads that may provide additional on-street car parking capacity is unknown. Accordingly, setting a minimum number of car parks per classroom as a designation condition is considered to be appropriate in this instance.



The condition enables a lessor amount to be considered in the future of the local infrastructure will support less on-site car parking.

5.3 National Policy Statement for Freshwater Management 2020

The Proposal is consistent with the National Policy Statement for Freshwater Management 2020.

Objective 2.1(1) and Policy 2.2(6) seek to protect the health of freshwater ecosystems and ensure there is no further loss of extent if natural wetland, their values are protected, and their restoration is protected. The project can be designed to ensure there is a suitable development buffer provided around the existing natural wetland, and that opportunities are provided for restoration of wetland through planting of the buffer area.

The conclusion of the ecological assessment in Appendix F is that if best practice stormwater and wastewater management guidelines are implemented, then the impacts of these activities on site water quality and freshwater values will be not be discernible, and the level of effect has been assessed as low. Furthermore, the development of the site will also have the benefit of removing stock access to the wetland and could include wetland enhancement planting. It also concludes that whilst there is potential for sediment to be discharged from the site to the receiving environment, this would be addressed through the existing requirement for industry best practice erosion and sediment controls during any land disturbance.

5.4 Auckland Plan 2050

The Auckland Plan 2050, adopted by Auckland Council in June 2018, is the key high-level strategic planning document for Auckland setting out the direction for tackling Auckland's challenges. The detailed statutory rule book for development and growth is included within the Auckland Unitary Plan which is assessed separately below.

The Plan sets out Auckland's key challenges. Key Challenge 1 relates to population growth and its implications. It acknowledges that the rate and speed of Auckland's population growth puts pressure on Auckland's infrastructure. Investment in a new school and ECE is in direct response to population growth that has been and is proposed to be enabled by the Auckland Unitary Plan in the Auckland north-west area.

Key Challenge 3 is reducing environmental degradation. As set out in the Tonkin and Taylor report in Appendix G, on-site stormwater and wastewater management system can be suitably managed on site for the initial phase of school development. A development buffer area can also be provided around the natural wetland to protect it ecological values.



The Auckland Plan Development Strategy identifies Whenuapai Stage 2, which encompasses the Future Urban Zone covering the school site and surrounding land, as having a proposed development ready timeframe of 2028-2032. The school site is well located to serve the future school needs of this development area and overflow capacity for existing development areas while schools for those areas are acquired and constructed.

It is therefore considered that the development of a school and ECE on the proposed site is consistent with the relevant provisions of the Auckland Plan.

5.5 Whenuapai Structure Plan 2016

The Whenuapai Structure Plan is a non-statutory high-level plan setting the vision for the future development of the Whenuapai Area. The Structure Plan sets a framework for changes to the Auckland Unitary Plan. Proposed Plan Change 5 to the Auckland Unitary Plan aims to rezone approximately 360ha of mostly Future Urban zone land in the Whenuapai are to a mix of business and residential activities. The Structure Plan provides a context for the land use strategy in Proposed Plan Change 5.

The Structure Plan map shown in Figure 4 below identities the site to which this Notice of Requirement relates as a school site.



Figure 4: School Site identified in Purple, Whenuapai Structure Plan 2016

Accordingly, the location of the school is anticipated in the Whenuapai Structure Plan 2016.



5.6 Auckland Unitary Plan – Operative in Part

The Auckland Unitary Plan fulfils a number of statutory planning functions including a regional policy statement, regional coastal plan, regional plan and district plan to guide development in the Auckland Region.

The following provisions of the Regional Policy Statement are of particular relevance to the proposal.

B2 Issues of regional significance – Tāhuhu whakaruruhau ā-taone » 2.1 Urban growth and form

Auckland's growing population increases demand for housing, employment, business, infrastructure, social facilities and services. Growth needs to be provided for in a way that does all of the following:

- enhances quality of life for individuals and communities.
- supports integrated planning of land use, infrastructure and development.
- optimises the efficient use of the existing urban area.
- encourages the efficient use of existing social facilities and provides for new social facilities.
- maintains and enhances the quality of our environment, both natural and built.
- enables Mana Whenua to participate and their culture and values to be recognised and provided for.

B.2.8.1 Social Facilities Objectives

- Social facilities that meet the needs of people and communities, including enabling them to provide for their social, economic and cultural well-being and their health and safety.
- 2) Social facilities located where they are accessible by an appropriate range of transport modes.
- *3) Reverse sensitivity effects between social facilities and neighbouring land uses are avoided, remedied or mitigated.*

B.2.8.2 Social Facilities Policies

- 1) Enable social facilities that are accessible to people of all ages and abilities to establish in appropriate locations as follows:
 - a) Small-scale social facilities are located within or close to their local communities
- 2) Enable the provision of social facilities to meet the diverse demographic and cultural needs of people and communities.
- *3)* Enable intensive use and development of existing and new social facility sites.
- 5) Enable the efficient and flexible use of social facilities by providing on the same site for:



a) Activities accessory to the primary function of the site; andb) In appropriate locations, co-location of complementary residential and commercial activities.

6) Manage the transport effects of high trip-generating social facilities in an integrated manner.

The explanation to the social facilities objectives and policies states that *Social Facilities* include facilities that provide for education. The proposal will provide essential education facilities to a planned growth area. A school within Whenuapai as the area is developed will help manage travel demand by avoiding a need to travel to other schools in the wider area. In the short term it will temporarily serve as an overflow for other adjacent areas until the school network is completed in those areas to ensure there is sufficient provision for schooling to serve these growth areas. The facility therefore promotes the social well-being of the community.

The development will provide a facility that will benefit the community, not only in terms of the educational benefits for children, but also in terms of employment opportunities and the provision of a facility that will act as a community focal point for social interaction. The potential adverse effects of the facility can be appropriately managed through the proposed conditions on the designation, appropriate design and future resource consents that may be required.

The site is currently located within the Future Urban Zone which applies to rural land identified as being suitable for urbanisation. Whilst the policy framework does not anticipate urban development until the land is rezoned for urban purposes, educational facilities are provided for as discretionary activities. Furthermore, the land is subject to a proposed plan change to allow urbanisation to occur. Further, development of a school at this location will not compromise future urban development in terms of Objective H18.2(3) as it will occur on a site identified for this purpose in the Whenuapai Structure Plan 2016.

The site is subject to a proposed Residential – Mixed Housing Urban Zone in Proposed Plan Change 5. Education Facilities are a discretionary activity in this zone. Residential areas are typical locations for schools throughout New Zealand and locating schools in these areas promote alternative transport modes to private motor vehicles.

The Residential - Mixed Housing Urban Zone includes a suite of objectives and policies to enable a reasonably high intensity residential zone with development up to three stories high and a variety of built form including detached dwellings, terrace housing and low-rise apartments. Non-residential activities to provide for the community's social, economic and cultural wellbeing are envisaged provided they are compatible with the scale and intensity of development anticipated in the zone.



In this instance, the school and ECE is required to serve existing enabled and future proposed growth in and around the Whenuapai area and will be provided on a large site that enables any adverse effects to be mitigated on the amenity of surrounding residential areas. Modern schools include high quality architectural designs to address their interaction with the surrounding environment and public realm, consideration of crime prevention through environmental design (CPTED) principles, promotion of safe and easy access by all modes of transport, and environmental sustainability including water and energy conservation. This is embodied in the Ministry of Education's national design guidelines that are mandatory of school design projects¹. School buildings will be fully compatible with development up to three-stories envisaged in the zone, and the large site and existing topography will ensure a generally lower extent of coverage by buildings and impervious surfaces on the site that would generally be anticipated for residential development in the Residential – Mixed Housing Urban Zone.

Accordingly, the proposal is assessed as being consistent with the relevant residential zone objectives and policies of the Auckland Unitary Plan.

Whenuapai 3 Precinct

Proposed Plan Change 5 proposes to insert the Whenuapai 3 Precinct into the Auckland Unitary Plan. The purpose of the Whenuapai 3 Precinct is to enable an increase in housing capacity and provide employment opportunities through the efficient use of land and infrastructure.

Three precinct plans are included as follows:

- Precinct Plan 1 shows indicative open space, the permanent and intermittent stream network and a coastal erosion set back. The school site does not conflict with any of these features.
- Precinct Plan 2 shows proposed future transport infrastructure. This includes an indicative future road connecting with Trig Road and running along the southeastern boundary of the school site. There is currently no funding, timing or exact alignment of this indicative road. However, the feasibility layouts of the school have provided a 10m strip within the school site to construct half of this road should it be constructed in the future on this specific alignment.
- Precinct Plan 3 shows Whenuapai aircraft engine testing noise boundaries. The school site is outside areas affected by these boundaries.

The policy framework for the Whenuapai 3 Precinct Plan is to ensure the area is developed as a liveable, compact and accessible community with a mix of high quality

¹ Designing Schools in New Zealand, Requirements and Guidelines – Ministry of Education, October 2015.



residential and employment opportunities, while taking into account the natural environment and proximity of Whenuapai Airbase.

Based on the site location, feasibility plans and associated assessment of effects/technical assessments, and suite of proposed designation conditions, the proposal is assessed as being consistent with the policy framework for the Whenuapai 3 Precinct Plan. In regard to the policy framework, the development of the school will:

- Integrate with Infrastructure to the extent it is available for initial phase of the school as an overflow school for adjacent areas, and be able to connect to other services as they are extended to serve the area as it urbanises is accordance with Proposed Plan Change 5. In the interim, stormwater and wastewater will be able to be managed appropriately on-site due to the large site size.
- The proposed school site will support a multi-modal transport system and support a compact and contained urban form by providing an educational facility within the catchment it is proposed to serve in the long term and avoiding the need to travel outside of the Whenuapai area for schooling. Whilst initially as an overflow school there will be an interim need for a high reliance on private motor vehicle trips, this demand will reduce when other planned schools in the network are established. As the adjacent area urbanises the location of the school will encourage walking and cycling trips for students to get to the school. These modes of transport will be specifically encouraged by a school and ECE travel plan.
- Stormwater management will be in accordance with the Whenuapai 3 Precinct Stormwater Management Plan prepared to support Proposed Plan Change 5.
- The proposed buffer area around the wetland system and future design of onsite stormwater and wastewater systems (subject to future regional resource consents) will ensure the biodiversity values of the wetland system are protected.
- The site is located outside of the noise boundaries and aeronautical height restrictions for Whenuapai Airbase.

Variation 1 to Proposed Plan Change 5

A consultative draft Variation 1 to Proposed Plan Change 5 closed for comments on 13 May 2021. This is primarily to address further information on aircraft engine testing noise and to respond to the NPS-UP 2020. This does not alter the status of notified Proposed Plan Change 5. The draft revised precinct plans do not add any additional restrictions to the school site, and there is still an indicative road shown along the southeastern boundary of the school site. Additional Residential - Terrace Housing and Apartment Zone is shown on land further south along Trig Road and fronting Hobsonville



Road. If zoned in accordance with the draft variation this may create further demand for schooling in the wider area due to the increased development capacity for housing, further diving the need to establish the school and ECE.

5.7 The Resource Management (National Environmental Standards for Freshwater) Regulations 2020 (NES-FW)

A natural wetland is located primarily on adjacent land to the south with a small part protruding across the south-eastern boundary into the school site.

The regulations in the NES-FW will be relevant to the future development of the site once designated.

Under Regulation 52, earthworks and diversion and discharge of water within 100m of a natural wetland is a non-complying activity where this results to is likely to result in the complete or partial drainage of all or part of a natural wetland (where not otherwise provided for under Regulations 31-51). Detailed design and management of bulk earthworks and drainage will be undertaken to ensure it does not result in complete or partial drainage of all or part of the natural wetland.

Regulation 53 Regulation to earthworks and taking, use, damming and diversion, or discharge of water within a natural wetland is not relevant, as none of these activities are proposed within the natural wetland.

Under Regulation 54, the diversion and discharge of water within 100m of the wetland will be required which is a non-complying activity (Regulation 54(c)). The stormwater and wastewater systems will be designed to ensure the wetland is not adversely affected. The Tonkin and Taylor report in Appendix G and Morphum Environmental Report in Appendix F show that it is feasible to design these systems such that any adverse effects on the wetland would be low. The project also provides the opportunity for positive effects on freshwater values through the removal of stock grazing and application of agrichemicals to the lands, and opportunities provided for buffer planting. No earthworks or vegetation clearance is proposed within 10m of the wetland (Regulations 54(a) and (b)).

No designation conditions in regard to effects on the natural wetland as the NES-FW and Auckland Unitary Plan regional rules will continue to apply after a designation for the site is confirmed.



5.8 Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (NES Soils)

As outlined in the Preliminary Site Investigation (PSI) report in Appendix H, buildings on the site that were built and/or demolished during the period when asbestos and lead based paints were in common use may have occurred on the site. It is also possible filling may have occurred in the past. Therefore, it is possible that these activities could be considered HAIL activities and on that basis it is possible that future resource consents will be required under the NES Soils and potentially under the Auckland Unitary Plan regional rules for discharges associated with disturbing contaminated soils when enabling earthworks to develop the site are undertaken. Soil testing before site works are undertaken will confirm whether or not these consents are required.

No designation conditions in regard to potential contaminated soil are required as the NES Soils and regional discharge rules in the Auckland Unitary Plan will continue to apply after a designation is confirmed on the site.

6.0 Assessment of Environmental Effects

6.1 Overview of Approach

Technical reports included to support the Notice of Requirement include the following:

- Integrated Transport Assessment (ITA) prepared by Abley Limited;
- Civil Infrastructure Feasibility prepared by Tonkin and Taylor Limited;
- PSI prepared by Tonkin and Taylor Limited; and
- Ecological Assessment prepared by Morphum Environmental Limited.

A bulk and location feasibility study has also been prepared by Jasmax Limited with inputs from the wider consultant team and Ministry of Education to confirm the feasibility of accommodating the necessary project components on the site and providing a realistic basis for assessing the effects of works that would be enabled by the designation (see Appendix C). This includes a feasibility bulk and location plan for both main phases of the school. This is not intended to be a design and accordingly should not be referred to in any designation conditions. It is intended that the detailed design including its detailed traffic solutions, urban design and infrastructure solutions are dealt with at the future Outline Plan stage. An establishment outline plan condition for each of the major school phases, consistent with the approach taken for other recent school designations in Auckland, has been included for this purpose to ensure relevant matters are addressed in the school design phase following designation of the site.



A Detailed Site Investigation (DSI) of potentially contaminated land has not been undertaken at this stage with reliance on existing PSI information. This is sufficient to show there are no fundamental development constraints. A DSI can occur at a later date and any site management/remediation addressed as part of a future Outline Plan of Work and any contaminated soil resource consent processes.

6.2 Visual and Amenity Effects

The site is currently zoned as a future urban zone. The site and adjacent land is generally utilised for rural lifestyle and/or grazing purposes, so development of a school will be a noticeable visual change from the existing environment. However, the site is shown in both the Whenuapai Structure Plan 2016 and Proposed Plan Change 5 as having a medium intensity housing zoning which indicates the expected future urban form for the site. Proposed Plan Change 5 also indicates that the higher intensity Residential – Terrace Housing and Apartment Zone will be applied to nearby land. Accordingly, the school will be visually compatible with the anticipated future urban form of the area and will provide lower building coverage and more impermeable area than would be expected for medium intensity housing development.

A large proportion of schools in New Zealand are accommodated within residential areas and are an integral and expected component of such areas. They are large sites that provide the opportunity for large areas of open space for active recreation which also mitigates the effects of any larger buildings and ancillary infrastructure such as parking areas associated with schools.

A height in relation to boundary control condition will apply which will avoid unreasonable dominance or overshadowing of any adjoining land likely to be zoned and developed for residential purposes.

Any specific building proposal can be assessed by the Council through the Outline Plan process at each stage of development. The feasibility bulk and location study for Phase 1 and Phase 2 of the school is attached in Appendix C which demonstrates that the site is able to accommodate a primary school and ECE development while adhering to the proposed height in relation to boundary control condition. It also demonstrates that there is adequate space for large permeable areas and generous areas for landscaping. It should be noted that the detailed design of the school may differ from what is shown, and these concepts have only been provided to demonstrate that the site is able to adequately accommodate a primary school and ECE development. The Minister will not accept a condition that require the site to be developed in accordance with the feasibility plans provided.

If a school and ECE were not to be developed on the site, under the proposed Auckland Unitary Plan zoning the likely alternative use would be medium density housing up three stories. Dwellings would likely be located across the majority of the site, without the



visual relief that is offered by playing fields and other open spaces in educational facilities of this nature.

Further, there will be ample opportunities available for landscaping within the site. Any detailed landscaping proposals will be addressed through the Outline Plan process for each particular development stage for the site.

As such, it is considered that the visual amenity/character effects of any future school and ECE developed on the site can be appropriately managed without detailed controls being included in the designation conditions (aside from the height in relation to boundary control to address the site interface with adjoining land), and will be compatible with the expected future development opportunities on adjacent land.

Aural amenity for other land is adequately protected by the standard noise condition applied to schools in the Auckland Unitary Plan, which is slightly modified for this designation to make it clear it also applies to the ECE.

6.3 Transport and Traffic Effects

An Integrated Transport Assessment (ITA) prepared by Abley Limited is attached as Appendix E. The ITA concludes that the land to be designated for educational purposes and the existing surrounding roading network can accommodate the anticipated traffic from both phases of the proposed school and can provide adequate access arrangements. It also concludes that a school on this site can satisfy the outcomes sought by the regional and local transport strategies and plans. Key findings from the ITA are summarised below:

- The local road network in the Trig Road area is not confirmed at this stage. However, the traffic generated by both phases of the school at this location can be accommodated on the existing road network without the reliance on future roads.
- The proposed access for both school scenarios are modelled with a separate entry and exit access point. The SIDRA models show all scenarios and time periods work at an acceptable level of service.
- The site can cater for the required parking demand for staff and visitors, student pick up and drop off and separate parking for an ECE facility.
- Detail of car and cycle parking, access arrangements and pedestrian crossings will be considered further during the Outline Plan stage.
- A Travel Plan for the school and the ECE will be developed prior to these facilities opening to promote road safety and encourage active modes for travel to/from school.
- The infrastructure requirements for Phase 1 of the school include:
 - a safe crossing point on Trig Road, including a footpath to link the crossing to the school entrance;



localised road widening and a right turn bay for access to the school; and
installation of a 40km/h school zone.

• The infrastructure requirements for Phase 2 of the school are primarily catered for by the Trig Road upgrade which will be undertaken by Supporting Growth Alliance.

The ITA concludes that Auckland Council can recommend confirmation of the Notice of Requirement to designate the land for educational purposes.

Any school will inevitably have some adverse effects on the transport system in the vicinity of the school, particularly at peak times. In its initial phase as an overflow school, a higher proportion of private vehicle trips than a school within a walkable catchment can reasonably be expected to occur wherever it is located until schools are acquired and constructed in those catchments. In its second phase serving urbanisation in the area around the school, the site will be well located to serve a local catchment and will provide better opportunities for travel demand management and use of modes such as walking and cycling rather than creating a need to commute to a school in another location outside of the local area.

It is acknowledged that upgrading of Trig Road adjacent to the school would be required to ensure it is at an appropriate standard at the time the school is opened. A more comprehensive upgrade and widening of Trig Road as anticipated as part of the Surprinting Growth Programme for the north-west to support urbanisation as envisaged by Proposed Plan Change 5.

The ITA sets out certain minimum works that will be needed for Phase 1 of the School to open. These include:

- 1. Pedestrian Crossing (either raised or kea crossing depending whether the reduction in speed limit is temporary or permanent)
- 2. Localised widening of Trig Road to allow for a right turn bay
- 3. Footpath on eastern side of road to link pedestrian crossing with school entrance
- 4. No-Stopping lines along school frontage
- 5. 40 km/h School Speed Zone or permanent speed reduction to 50km/h

The requiring authority will be responsible for the costs of these works if not already implemented by others before the first phase of school opens and is open to entering into a side agreement with Auckland Transport in regard to the funding and implementation of the above works. The proposed establishment outline plan condition will require a demonstration that necessary works will be implemented to support opening of Phase 1 of the school.

With knowledge of the location of the school through the Whenuapai Structure Plan 2016 and the current designation process, there will be opportunities for Auckland



Transport and Auckland Council to look at matters such as footpath widths and adequate road widths to enable short term on-street parking etc. as subdivision and development of other land occurs in the area.

6.4 Infrastructure and Flood Effects

Infrastructure and flood effects are addressed in the Site Feasibility Assessment – Civil Infrastructure papered by Tonkin and Taylor Limited attached as Appendix G.

Figure 5 below shows the indicative overland flow paths and areas subject to flood hazard on Auckland Council's GIS. The overland flow paths originate within the site and the site can be designed to maintain these overland flow paths whist all buildings shown on the feasibility bulk and location plans can avoid any identified flood areas and overland flow paths. The Tonkin and Taylor report concludes that the development shown on the feasibility plans is within the modelled parameters for the Whenuapai 3 Precinct Stormwater Management Plan prepared to support Proposed Plan Change 5 and accordingly no additional flood hazard mitigation measures will be required.



Figure 5: Indicative Overland Flown Paths and Areas Subject to Flooding: Auckland Council GIS

The initial phase of the project expected to occur before urbanisation of the adjacent area occurs will rely on on-site stormwater and wastewater solutions. The feasibility of these solutions has been assessed in the Tonkin and Taylor Report in Appendix G. The report concludes that a suitable area for onsite stormwater management and onsite



wastewater disposal can be accommodated within the bulk and location feasibility plan. For Phase 2 of the school to serve the local catchment as it urbanises, it is anticipated that a connection will be able to be made to a public sewerage system.

The practical ability to expand the school roll beyond that anticipated for Phase 1 will be limited by the available of public sewerage infrastructure. The onsite stormwater and wastewater solutions will require separate reginal resource consent. These consents will be sought at a later date once the systems and detailed school layout have been designed.

Public water supply infrastructure is available in Trig Road.

6.5 Ecological Effects

An ecological assessment prepared by Morphum Environmental is attached in Appendix F. The conclusions and recommendations of that report are:

- It is acknowledged that the construction and operation of a school has the potential to have adverse ecological effects. The magnitude of these effects has been considered as either low to negligible using the EIANZ Ecological Impact Assessment guidelines. Considering both the ecological values and the magnitude of impacts, the overall level of effect ranges from low to very low. EIANZ guidelines describe low to very low-level effects as "not normally of concern" and "no more than minor", although normal design, construction and operational care should be exercised to minimise adverse effects.
- Farming activities have cleared much of the site's original vegetation, the current land cover present is typical and consistent with the past and current agricultural use of the site. The largest extents of vegetation are pasture grasslands (93%) and a smaller area mature exotic trees interspersed with regenerating natives (7%). Exotic pest plants such as woolly nightshade, field bindweed, and agapanthus are also common.
- Although the site has been heavily modified, it retains some ecological value. Ecological features of note include the area of woody vegetation and identified wetland. Vegetation, where present contributes to ecosystem services such as habitat provision for native fauna adapted to moving across agricultural landscapes. The paucity of quality habitat values and areas is reflected in the native species of birds, lizards, bats, and fish considered likely to utilise the site. Avifauna species present are consistent with those that can comfortably travel distances over open fields between forested patches, or make use of fields, farmland, and shelter belt vegetation as habitat. Suitable lizard habitat is limited and, if present, lizard populations are likely limited to Copper or Plague Skinks. The subject site contains no old growth trees with cavities or loose bark that may be utilised as roosts and is not proximate to any waterways that could be



utilised as movement corridors by native long-tailed bats. Given the absence of fish habitat, the subject site is not expected to support native freshwater fish populations.

- Whilst onsite fauna observations were limited to common species, the use of this area by threatened species such as long-tailed bats, whilst considered unlikely, cannot categorically be ruled out. The redevelopment of the subject site would likely require the demolition and construction activities involving land disturbance and potentially minor vegetation clearance and associated dust, noise, vibrations, and traffic movements. Given the values associated with the vegetation identified in this report the level of effect for any vegetation clearance would be very low. The provisions of the Wildlife Act will also remain in effect to ensure that any loss of habitat for native avifauna, lizards and bats is appropriately managed.
- For all land disturbance activities, such as building demolition and construction, there is the potential for sediment to be discharged from the site to the receiving environment; this would be addressed through the existing requirement for industry best practice erosion and sediment controls during any land disturbance. The redevelopment of the site for educational purposes could result in increased in impervious coverage. The potential effects of changes to the quantity and quality of stormwater discharged from the site would be addressed through the stormwater management approach developed for the site. The potential effects of changes to site hydrology and nutrient values as a result of on-site wastewater treatment and disposal will be addressed by implementing Auckland Council best practice guidelines (GD01, GD05 and GD06).
- Overall, the effects of the proposed activities are considered here as low very low. As such it is not considered necessary to recommend any ecology-specific conditions to address any of the identified effects.

6.6 Soil Contamination Effects

The site was subject to a PSI undertaken by Tonkin and Taylor Limited in March 2021 (see report in Appendix H).

Historical information reviewed as part of the PSI shows HAIL activities have or may have occurred on site including:

- Placement of fill during site development;
- Buildings containing Asbestos Containing Material (ACM); and
- Buildings constructed with other potentially contaminating materials (e.g. leadbased paints).



The PSI recommends that:

- the presence of any contaminants is confirmed by soil testing before the site is developed. This will determine if contaminants, specifically asbestos, metals and polycyclic aromatic hydrocarbons (PAHs), are present at concentrations that pose a risk to human health; and/or
- The scale and duration of works should be evaluated against the permitted activity thresholds when development thresholds (detailed design) have been resolved.

Assessment against the permitted activity requirements of the NES-Soils and the Auckland Unitary Plan rules for discharge of contaminants will be required regardless of the proposed designation, and any necessary management measures can be addresses through those processes. Accordingly, no specific designation conditions are proposed in relation to the disturbance of soils that are potentially contaminated.

The PSI concludes that the site is generally suitable for the proposed new development from a contaminated land perspective.

6.7 Hazardous Substances Effects

No storage and use of hazardous substances over and above materials such as paint for building maintenance, cleaning products or gas bottles are likely to be used and stored on-site.

6.8 Historic Heritage Effects

There are no known objects or sites of historic or archaeological significance affecting this site. No sites, objects or places of historic heritage are shown in the Auckland Unitary Plan, and no recorded sites in the New Zealand Archaeological Association (NZAA) are shown as affecting this site.

6.9 Cultural Effects

A summary of the consultation with mana whenua is detailed in Section 9 below. No specific cultural values or recommendations in regard to the proposed designation were identified as part of that consultation.

There are no sites of significance to mana whenua or archaeological sites affecting the proposed designation area included in the Auckland Unitary Plan or recorded by the New Zealand Archaeological Association.



The Minister's representatives will continue to engage with any mana whenua who express an interest in this project either as a direct response to communications set out by the Ministry of Education or through the formal designation process.

Effects on the adjacent wetland system form earthworks and future stormwater and wastewater will be relevant factors in regional resource consents that will be required for project implementation subsequent to a designation being confirmed.

7.0 Additional Consents Required

In general, no further land-use consents will be required from the Auckland Council in terms of its District Plan consent functions once the site is designated. The one exception may be if a land use consent is required in regard to contaminated soil under the NES Soils which prevails over a designation where the designation was made after the NES Soils came into force. This will be determined by the outcome of a DSI that will be undertaken at a later date once the site is designated.

Any regional resource consents required for on-site stormwater and wastewater management, bulk earthworks or discharges from disturbing contaminated under either the Auckland Unitary Plan or NES-FW will be determined once detailed design has been undertaken. Accordingly, no resource consents consent from Auckland Council have been applied for at this stage and will be applied for as necessary in the future once the site is designated and the design for any particular stage is completed to a sufficient level of detail for resource consents to be sought.

8.0 Alternative Locations and Methods

As this site has been owned by the Crown for educational proposes for approximately 20 years, is in a suitable location to meet the Minister's objectives for this school, and is identified as a future school site in the Whenuapai Structure Plan 2016, no alternative sites have been considered.

Use of designation as a tool for providing for the proposed educational facilities for which the Minister has financial responsibility is the mechanism used widely by the Minister as part of a national strategy for establishing, maintaining and operating school sites.

Part 8 of the RMA provides for requiring authorities to seek provision for designations in district plans. The primary reasons for adopting this technique are:

a. The Minister has a national strategy to designate all state schools.



- b. Designations provide greater certainty in terms of future management options for a site, because it allows the Minister to carry out ongoing development of the site in accordance with the designated purpose indefinitely.
- c. Designation recognises the long-term commitment to the particular site, as well as identifying the site on the district plan maps.

As such, it is considered that the use of the designation process, as specifically provided for in the RMA, is appropriate. The principal alternative method would be to seek resource consent for the establishment or future changes to the school and ECE at the time these facilities are ready to proceed (in regard to matters controlled by the district plan rules in the Auckland Unitary Plan). This process would provide the Minster with less certainty and would be inconsistent with the planning status of similar state facilities in the Auckland Unitary Plan, and the majority of other state schools nationwide.

9.0 Consultation

Mana Whenua

An information package was sent to all mana whenua groups identified by Auckland Council as having an interest in the Upper Harbour Local Board area on 28 April 2021, with a follow up sent after approximately 2 weeks of sending out the initial communication. These groups included:

- Ngati Manuhiri Settlement Trust
- Ngāti Maru Rūnanga Trust
- Ngāti Paoa Iwi Trust
- Ngāti Paoa Trust Board
- Te Ara Rangatu o Te Iwi o Ngāti Te Ata Waiohua
- Ngā Maunga Whakahii o Kaipara Development Trust
- Ngāti Whātua Ōrākei Trust
- Te Ākitai Waiohua Iwi Authority
- Te Kawerau Iwi Settlement Trust
- Te Rūnanga o Ngāti Whātua

The only response received was from Ngāti Manuhiri Settlement Trust indicating they have an interest in the Whenuapai Area but would defer to Maunga Whakahii o Kaipara in this instance.

No other responses have received at the time of completing this documentation for lodgement. However, the Minister's representatives will continue to engage with any mana whenua who express an interest in this project either as a direct response to communications set out by the Ministry of Education or through the formal designation process.



Upper Harbour Local Board

The Upper Harbour Local Board was sent project information on 28 April 2021. No feedback has been received at the time of finalising this Notice of Requirement.

Local Community

A project information mail-out was sent to the ratepayer addresses for properties adjacent to the site, along Ryan's Road and along Trig Road between Hobsonville Road and State Highway 18.

Feedback received included:

- Support for the school project to support growth;
- Concerns over the growing traffic volumes on Trig Road; and
- Concerns over the Supporting Growth proposal for road widening along Trig Road including the extent of potential land take and alignment of the connection to Hobsonville Road.

Auckland Transport

Auckland Transport was involved in two pre-application meetings and provided feedback on the draft ITA and draft conditions.

The Minister has adopted the changes to conditions suggested by Auckland Transport. The ITA records how Auckland Transport's comments have been addressed in the final ITA document.

Auckland Council

A pre-application meeting was held with Auckland Council Plans and Places along with representatives of Auckland Transport and Auckland Council Earth Streams and Trees. Further comments were subsequently provided from stormwater and wastewater specialists within Auckland Council.

10.0 Conclusion

The requiring authority has assessed the relevant matters as set out in s171(1) of the RMA and concludes that is appropriate for the designation to be confirmed subject to conditions as proposed. The designation will enable the delivery of essential community infrastructure to support population growth in the Auckland north-west area.

The Minister does not require any change to the standard lapse period of 5 years before the designation is given effect to.

The Minister requests notification of the Notice of Requirement.


Appendix A

Designation Plan

MINISTRY OF EDUCATION | DESIGNATION PLAN



MINISTRY OF EDUCATION TE TĂHUHU O TE MĂTAURANGA





Appendix B

Certificate of Title



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RECORD OF TITLE UNDER LAND TRANSFER ACT 2017 GAZETTE NOTICE

Search Copy



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Interests

Extract from New Zealand Gazette, 24/2/2005, No. 41, p. 1064

Land Acquired for State School-Trig Road, Hobsonville

Pursuant to section 20 of the Public Works Act 1981, and to a delegation from the Minister for Land Information, Stephen Robert Gilbert, Land Information New Zealand, declares that, agreements to that effect having been entered into, the land described in the Schedule to this notice is hereby acquired for a state school and vests in the Crown on the date of publication of this notice in the New Zealand the date of publication of this notice in the New Zealand Gazette.

North Auckland Land Registry—Waitakere City Schedule

Area

Description

ha Lot 5, DP 66045, all Computer Freehold Register NA21C/1295. 4.0469

Dated at Christchurch this 22nd day of November 2004. S. R. GILBERT, for the Minister for Land Information. (LINZ CPC/1999/3753) La 1034



NOTICE NO: 1034



Appendix C

Bulk and Location Study

Trig Road-Whenuapai

Bulk & Location Siting Study

Document Prepared by Ja MoE Contract number 220211 20 May 2021

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asmax for

Rev I

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1.1 **Current Context**

Existing Site Plan.

Zoning:

Unitary Plan Zoning : Future Urban Zone

Properties to the North, East, West, South are zoned Future Urban. A small plot to the South is zoned Open Spaces - Informal Recreation, whilst further North-West is a Strategic Transport Corridor zone.





Existing Open Space



Trig Road - Whenuapai B&L Siting Study

1.2 **Current Context**









1.3 Design Assumptions

Terminology

- **Phase 1:** Overflow school to serve a shortfall in the school network capacity in Whenuapai North, Redhills and Hobsonville.
- Phase 2: School and Early Childhood Education (ECE) to serve the long term needs of the local adjacent school catchment as the adjacent area is live zoned and developed for urban purposes.
- Phase 1 school pudo provisions likely adequate for Phase 2, due to catchment being wider initially hence more vehicle movements. i.e increased roll at Phase 2 will be offset by closer catchment hence Phase 1 pudo not required to expand in same location.
- Site offers opportunity for vehicular access off future potential 'collector' road to south. Site has capacity for an additional pudo and Phase 2 staff parking located adjacent the collector road to account for a more 'distributed network' of journey choices in the future.
- Half playing field assumed adequate for Phase 1&2.
- MoE preference to utilise single storey new modular buildings (as for Scott Point).
- On site waste water management not required beyond Phase 1 (assumes provision of public services prior to Phase 2 being undertaken).



Phase 1 & 2 Siting Study 1.4







Modular Buildings Conceptual PUDO including footpaths Right turn bay/flush median for entry and exit Stormwater management Area



Adjacent Road Traffic Flow: Vehicle-in Traffic Flow: Vehicle-out **Existing Pedestrian Pathways**

...

JASMAX

Prepared for Ministry of Education

Trig Road - Whenuapai B&L Siting Study

20 May 2021

Scale 1-2000 at A3

Phase 2 end state (final roll 1000).

Proposed Pedestrian Pathways (Indicative Only) Proposed Pedestrian Crossing (Raised)

1.5 **Conceptual PUDO Design**

Potential layout for PUDO - Double Parking Aisles to 0 optimise use of site.





JASMAX

Trig Road - Whenuapai B&L Siting Study

Revision I

Siting Study 1.6

Built form Precedents.



Albany Senior High Temporary School, Auckland / Jasmax



Albany Senior High Temporary School, Auckland / Jasmax



Scott Point Primary School, Auckland / AQUA



Scott Point Primary School, Auckland / AQUA



Scott Point Primary School, Auckland / AQUA



1.7 Siting Study



Sidwell Friend's School, Washington D.C / Perkins Eastman



Stonefields School, Auckland / Jasmax



Orlyplein, Amsterdam / City of Amsterdam Department of Environmental Planning and Sustainability



Siting Study 1.8

JASMAX

Trig Rd, Whenuapai - Primary (w/ECE) Areas and Open space calc. for Opt 1

	Combined		Secondary School (Y9-		Special and/or		Primary School (Y1-		ECE	
	Total		15) [`]		Satellite		8)		Centre	
.										
Site Area (approx.					included in					
Site Allocation	41 000				Primary &		20 500		1500	
defn	41,000	mz ba		mz	Secondary	1	39,500	mz	1500	mz
Site A (South)	4.1	m2								CSI
Site R (South)	0	m2								
	0	1112								
Site C (South-West)	0	m2								
Levels (Storeys of										
construction)							1 to 2			
Floor plates							16-18m wide			
Roll (Masterplan) Interim/Opening						I	1000		твс	1
Roll							600		твс	
Teaching Spaces			0	-	0		44			
Interim/Opening TS			0		0		27			
Interim net area			0		0		2200			
Interim Gross area	2860		ő	-	Ő	-	2860			
	2000		uem.							
			multiplier		defn:		defn:			
			as provided		multiplier as		multiplier as			
defn: multiplier as			by		provided by		provided by			
provided by MoE			MOE=1.45		MOE=1.30		MoE=1.30			
Phase 2 net area			0				6163			
Phase 2 Gross area	8012		U	_			0012			
Interim-to-Phase 2										
proportion of area	0.26		#DIV/0!				0.26			
GFA (m2)			0	m2	0	m2	10,872	m2	1500	m2
defn: (includes Gvm										
for Secondary Hall										
for Primary)										
dims (m)										
hall/perform/music							456			
dims (m)	1						24x19			
add Special School	1									
coverage (outside of										
form)			n/a				n/a			
add link										
					included in					
Total GFA (m2)	10.872		0		secondarv		10,872			
(excludes ECE)	,		-							
				'	included in		1			
Building Coverage					primary &					
(m2)	5522				secondary		5522			

defn.						TS (Ph.1, total - 2 TS (@ Ph.2), 9 x 30m2 Walkway Coverings (Ph.1, total 2 Covers (@ Ph.2), 1 x 88m2 Admin (Ph.1, removed (@ Ph.2), 1 x 400m2 Pavilion (Ph.1, removed (@ Ph.2), 1 x 400m2 Pavilion (Ph.1, 1 total) removed (@ Pavilion (Ph.1, 1		
Parking Spaces			0			00		
rate (2 per TS) 4 per	08	-+	0	-		 00		
teaching space for								
satellite								
Provided vs Demand			218/236			88/88		10
Parking Area (m2)	2566		0	m2	0	2566		360m2
defn. (5.5 stall, 7.0								
aisle, 1.0 m central								
band, 2m planted						 1580m2 +	_	
ratio						 29.16		
Onon Space	22604			1	included in primary &	22604		
Open Space	22004		U		Secondary	22004		L L
	allocation*							
defn	coverage less parking less marginal							
defn.	coverage less parking less marginal open space							
defn. Open Space m2/per Student (at final roll)	coverage less parking less marginal open space		#DIV/01		included in primary &	22.60		
defn. Open Space m2/per Student (at final roll)	Coverage less parking less marginal open space		#DIV/0!		included in primary & secondary	22.60		
defn. Open Space m2/per Student (at final roll)	coverage less parking less marginal open space Open Space total / student		#DIV/0!		included in primary & secondary	22.60		
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defn. Open Space m2/per Student (at final roll) defn. Open space at Interim roll m2/per student Open Space Breakdown Marginal Open Spaces (not readily accessed for use by students)	Coverage less parking less marginal open space Open Space total / student roll		#DIV/0! -1.80		included in primary & secondary	22.60 22604/1000 54.05		
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	Parking Swa	ales	
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Appendix D

Standard Designation Conditions for Schools in AUP

Standard Conditions for All Education Designations

Explanatory Notes

- 1. Each of these designations enables the establishment of a school that is able but is not required to cater for all the school years listed in the designation description.
- **2.** "Educational Purposes" for the purposes of these designations shall, in the absence of specific conditions to the contrary:
 - (i) Enable the use of the facilities on the designated site by and for the educational benefit of any school age students (ie: years 0 to 13) regardless of whether they are enrolled at any institution located on that designated site.
 - (ii) Enable the provision of supervised care and study opportunities for students outside school hours in school facilities
 - (iii) Enable the provision of community education (eg: night classes for adults) outside school hours in school facilities
 - (iv) Include but not be limited to the provision of academic, sporting, social and cultural education including through:
 - Formal and informal recreational, sporting and outdoor activities and competitions whether carried out during or outside school hours;
 - Formal and informal cultural activities and competitions whether carried out during or outside school hours; and
 - The provision of specialist hubs and units (including language immersion unites and teen parent units) for students with particular educational requirements or special needs.
 - (v) Enable the use of facilities for purposes associated with the education of students including school assemblies, functions, fairs and other gatherings whether carried out during or outside school hours.
 - (vi) Enable the provision of associated administrative services; carparking and vehicle manoeuvring; and health, social service and medical services (including dental clinics and sick bays).
 - (vii) Enable the housing on site for staff members whose responsibilities require them to live on site (eg: school caretaker) and their families.
- **3.** Where any standard condition conflicts with a site specific condition, the site specific condition shall take precedence.

Conditions

1. Height in Relation to Boundary

Any new building or building extension (excluding goal posts and similar structures) shall comply with the height in relation to boundary controls [attached to this Schedule] from any adjoining land zoned primarily for a residential purpose, or zoned for an open space/outdoor recreation purpose.

2. Noise

The noise (rating) level arising from the operation of the school must comply with the following noise levels when measured within the boundary of any residentially zoned site, or within the notional boundary of any site in any rural zone:

Time	Noise level
Monday to Saturday 7am to 10pm	EE AD I
Sunday 9am to 6pm	SOUD LAeq
All other times	45 dB L _{Aeq}
	75 dB L _{AFmax}

These noise limits do not apply to noise from school sports and school recreational activities occurring between 8am and 6pm Monday to Saturday.

Noise levels shall be measured and assessed in accordance with NZS 6801:2008 "Measurement of Environmental Sound" and NZS 6802:2008 "Environmental Noise".

Noise from construction shall not exceed the limits recommended in, and shall be measured in accordance with, New Zealand Standards NZS 6803:1999 "Acoustics – Construction Noise".

3. On-Site Car Parking – Schools

Additional on-site car parking shall be provided at the rate of two carparks per new classroom or classroom equivalent, except where the council accepts, on the basis of a specifically commissioned parking study by an appropriately qualified engineer and/or transportation planner, that a lesser level is appropriate. For the avoidance of doubt, this condition shall only apply where there is a net increase in the number of classrooms or classroom equivalents.

4. On-Site Car Parking – Early Childhood Education (Preschool)

In addition to any car parking required for the school, on-site car parking for early childhood education (preschool) shall be provided at the rate of one car park per every 10 children the facility is licensed or designed to accommodate, plus one per each full time equivalent staff member required for the license or design capacity of the centre, except where the Council accepts, on the basis of a specifically commissioned parking study by an appropriately qualified engineer and/or transportation planner, that a lesser level is appropriate.

5. Scheduled Trees

No tree or group of trees specifically scheduled in the Unitary Plan may be cut, damaged, altered, injured, destroyed or partly destroyed, or works undertaken within the drip line of any such tree(s), other than in accordance with an outline plan submitted and processed in accordance with the s176A of the Resource Management Act 1991. This condition shall not apply to minor trimming or maintenance undertaken by hand operated secateurs or pruning shears in accordance with accepted arboricultural practice, or where removal or trimming is required to safeguard life or property.

6. Outline Plans

That an outline plan of works shall not be required for:

- a) Any internal building works other than those that result in a net increase in the number of classrooms or classroom equivalents;
- b) General building maintenance and repair work including but not limited to re-painting, re-cladding and re-roofing;
- c) Installing, modifying and removing playground furniture and sports structures (e.g. goal posts);
- d) Amending any internal pedestrian circulation routes/pathways;
- e) Installing, maintaining or repairing any in ground infrastructure services such as stormwater, sewerage and water lines and connections, including any ancillary earthworks;

- Provision of landscaping and gardens, provided that it does not conflict with any designation condition or alter landscaping required as mitigation as part of an outline plan for other works; or
- g) General site maintenance and repair work, or boundary fencing otherwise permitted by the Unitary Plan.

Recession Plane Indicator



Recession Plan Cross Section





Appendix E

Integrated Transport Assessment

Alabley

Trig Road Primary School Notice of Requirement

Integrated Transport Assessment

Ministry of Education



MINISTRY OF EDUCATION Te Tāhuhu o te Mātauranga





Trig Road Primary School Notice of Requirement Integrated Transport Assessment

Ministry of Education

Quality Assurance Information

Prepared for:	Ministry of Education								
Job Number:	MED-J021								
Prepared by:	Liam Bramley, Graduate Transp	Liam Bramley, Graduate Transport Engineer; Kate Brill, Principal Transportation Planner							
Reviewed by:	Jo Draper, Associate Transporta	tion Planner							
Date issued	Status	Approved by							
		Name							
14 April 2021	Draft	Kate Brill; Jo Draper							
20 April 2021	Draft with revisions	Kate Brill							

Final (incorporating AT comments)

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31 May 2021

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Kate Brill

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1. Introduction

The Ministry of Education (MOE) commissioned Abley Limited (Abley) to prepare an Integrated Transport Assessment (ITA) for the Notice of Requirement (NoR) for a full primary school (Years 0-8) on Trig Road in Whenuapai. The MOE serve NoRs to designate land for educational purposes and protect the land for future development. In the case of schools, the designation authorises the MOE to undertake property projects on designated school sites within the scope of 'education purpose'.

MOE acquired the site at 13-15 Trig Road many years ago with the intention of constructing a future primary school servicing the future growth in the Whenuapai area. It is located approximately 20km northwest of central Auckland.

The future urban area surrounding the Trig Road site is currently undergoing a Plan Change, with development likely to still be a few years away. However, there is a shortfall of schools in the surrounding areas that are currently undergoing development. The Trig Road site has been identified as a temporary solution to accommodate the shortfall of up to 600 students from Red Hills and the northern end of Whenuapai. It is therefore proposed that the school site will operate in two phases, as described below:

- Phase 1: Overflow school to serve a shortfall in the school network capacity in Whenuapai North, Redhills and Hobsonville.
- Phase 2: School and Early Childhood Education (ECE) to serve the long-term needs of the local adjacent school catchment as the adjacent area is live zoned and developed for urban purposes

Phase 1 of the school is expected to open in 2022 with a transition into Phase 2 of the school when the local area develops. It is anticipated that Phase 2 of the school will transition in around 2027, however this is dependent on the scale of residential growth in the area. It is expected that it will take some time for the school to build up to the masterplan roll.

The phases of the school described above will be referred to throughout this report as 'Phase 1' and 'Phase 2'.

The purpose of this ITA report is to evaluate and assess the transportation effects of both phases of the school development at this site.

1.1 School Overview

As discussed above, it is proposed that the school will operate in two phases, initially as an overflow school (Phase 1), with a transition to Phase 2 when the area surrounding Trig Road develops.

Phase 1 School

The Trig Road school site has been identified as a solution to accommodate the shortfall of up to 600 students residing in the new rapidly developing areas of Red Hills, Hobsonville and the northern end of Whenuapai. Phase 1 of the school will accommodate Years 0-8 primary school children, with no Early Childhood Centre (ECE) proposed. It is anticipated that Phase 1 will open in 2022.

Phase 2 School

The Whenuapai area where the school is located is currently rural with minimal development. The Whenuapai Structure Plan encourages future development with high to medium density housing to be built in the local area surrounding the proposed school. The need for a primary school in the area is based on this future residential growth.

The proposed school will have a masterplan roll of 1,000 Year 0-8 students, with a view of operating when urban development occurs in the local catchment area.

Issue Date: 31 May 2021

The school will require an assumed staff of 50 based on a 1:20 staff to pupil ratio^[1], and an Early Childhood Centre (ECE) to accommodate up to 50 children.

As is typical for a school catering for Years 0 to 8, some or all of the following are expected to be developed on the site:

- Buildings; including classrooms, hall, library, administration office space, staff workspace, caretakers' facilities, sick bay etc.
- Playing fields, hardcourts, playground structures
- Vehicle accessways, parking space for staff and visitors; and temporary pick-up and drop-off areas
- Footpaths, landscaping and fencing
- Servicing; including water, sewer, stormwater, electricity, heating, telecommunications and outdoor lighting

^[1] Milne, A, S Rendall and S Abley (2011) National travel profiles part B: Trips, trends and travel predictions. NZ Transport Agency research report 467.94pp.

2. Site Description

2.1 Site Location

The proposed school site is located at 13-15 Trig Road at the southern end of Whenuapai as shown in Figure 2.1, with a total site area of approximately 4 hectares. Westgate shopping and transport centre is located approximately 2-3km to the west of the site, on the other side of State Highway 16.

The site has a 120m frontage onto Trig Road. Trig Road is a sealed rural road, which has one lane in each direction. There is currently a footpath on the western side of Trig Road only, on the opposite side of where the school will be located. There are no cycle facilities or provision for on-street parking on Trig Road. The current speed limit outside the site is 80km/h. Trig Road is not currently identified as an arterial road, however this status is likely to change in the future as Trig Road begins to function as an arterial.

It is anticipated that Trig Road will be upgraded in the future. The Supporting Growth programme has proposed an upgrade of Trig Road between Hobsonville Road and SH18 that includes walking, cycling and public transport facilities, and to reduce the speed limit to 50km/h.

The upgrade of Trig Road may require widening of the existing road reserve which may necessitate some land take from the site's frontage. The design of the access will be relatively unaffected by any such land take and can be accommodated without a redesign of the access points.



Figure 2.1 Site Location

2.2 Zoning and Surrounding Land Use

The Trig Road primary school site is situated in a large Future Urban Zone which covers most of the Whenuapai area, in the Auckland Unitary Plan Operative in Part (AUPOP), as shown in Figure 2.2.

Whenuapai Structure Plan / Plan Change 5

Our Ref: Abley Trig Road Primary School NoR ITA Final 210531 Issue Date: 31 May 2021

Auckland Council has created the Whenuapai Structure Plan, which provides the vision for Whenuapai and identifies the goals and areas for future urban development. The proposed Plan Change 5 aims to rezone approximately 360 hectares of mostly Future Urban zoned land to a mix of business and residential zones. The area on Trig Road surrounding the school is largely proposed as medium density residential.

The Structure Plan is non-statutory until the Plan Change is in place. Details of the Structure Plan are used as a basis for our assessment and referred to throughout this ITA.



Figure 2.2 Zoning Map

3. Transport Environment

The application site is located in Whenuapai, approximately 20km northwest of Auckland Central. Trig Road and the roads north of the site are rural roads, with the exception of SH18, with limited footpaths and cycle facilities for the most part. Trig Road and the surrounding rural roads will change as development occurs in accordance with the proposed Plan Change 5.

3.1 Existing Road Network

Trig Road and most of the roads north of the site area are rural roads, with one lane in each direction and narrow shoulders. There is a footpath on the western side of Trig Road, but no cycleways, on-street parking or kerb and channel for the large part.

Trig Road

Trig Road generally runs north to south. It is connected to SH18 with an on-ramp for eastbound traffic, and an off-ramp for people travelling west. It is classified as a rural road in AUPOP. It is a sealed two-way road with centreline and edge line markings as seen in **Figure 3.1**. There is a footpath on the western side of the road only, and no cycle lanes or provision for on-street parking. The posted speed limit is 80km/h, which reduces to 50km/h where it intersects with Hobsonville Road.

Trig Road is long and straight with a total road reserve width of around 20 metres outside the site. The carriageway is approximately 7m wide with two 3.5m traffic lanes.

The most recent traffic volumes recorded for Trig Road outside the site are dated March 2018. The total traffic volumes in both directions are 784 vehicles in the morning peak hour. The average daily traffic was 6,632 over a 7-day week in March 2018.



Figure 3.1 Trig Road (looking south with the school site on the left side)

Issue Date: 31 May 2021

Trig Road / Hobsonville Road Intersection

The south eastern end of Trig Road intersects with Hobsonville Road, which is currently formed as a priority intersection. The intersection has slip lanes for both left turning movements with no pedestrian crossing facilities at the intersection, as seen in **Figure 3.2**.



Figure 3.2 Trig Road / Hobsonville Road Intersection

Walking and Cycling Facilities

The existing roads surrounding the school have very little provision for walking or cycling given the rural nature of the roads. There is an existing footpath on the western side along the length of Trig Road.

3.2 Proposed Road Network

Trig Road

The Supporting Growth programme has recommended an upgrade of Trig Road that includes walking, cycling and PT facilities. The Supporting Growth programme has undertaken investigations to support the route protection (designation) process for this upgrade. However, the planning and preparation to lodge the Notice of Requirement (NoR) for route protection is dependent on future funding decisions. This upgrade will include two traffic lanes, a protected contraflow cycle lane on the eastern side of Trig Road and a footpath on both sides of the road. Trig Road is also proposed to have a flush median to facilitate turning movements into accesses. The road will have a posted speed limit of 50km/h.

Figure 3.3 below shows a potential cross-section for Trig Road.





Figure 3.3 Potential future cross-section of Trig Road (Source: Supporting Growth's Planning Auckland Transport's Future Together) The upgrade of Trig Road may require widening of the existing road reserve which may necessitate some land take from the site's frontage. The design of the school access will be relatively unaffected by any such land take and can be accommodated without a redesign of the access points.

Local road network around school site

The Whenuapai Structure Plan provides an indicative future road network as shown in **Figure 3.4**. The Structure Plan shows the southern end of Trig Road (between Hobsonville Road and the school site), realigned, with the southern end of Trig Road forming the fourth leg to the existing Hobsonville Road / Luckens Road intersection. However, it is understood from Supporting Growth that the realignment of Trig Road is no longer supported, and the preferred option is to retain the existing alignment of Trig Road. This preferred option of retaining the existing alignment of Trig Road will include an upgrade to the intersection of Trig Road and Hobsonville Road².

The Whenuapai Structure Plan also shows an indicative cross-roads intersection at the southern corner of the school site to include two future roads linking Trig Road to future development to the east and west. There is mention that this may be a signalised intersection in the future. The access road to the west of Trig Road is proposed to intersect with Hobsonville Road to the south.

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² https://www.supportinggrowth.govt.nz/assets/North-West/Publications/NW-HIF-Project-Info-Sheets/58d010d539/Trig-Road-Upgrade-Project.pdf



Figure 3.4 The proposed road network in the Whenuapai Structure Plan

Walking and Cycling Facilities

The Whenuapai Structure Plan indicates that key routes are to be improved with upgraded walking and cycling facilities. Trig Road is identified as being a future connector cycle route in the Auckland Cycle Network and is expected to have protected cycleways.

There are limited pedestrian facilities currently in the Whenuapai area, with the current land use being rural. Trig Road has a footpath on the western side of the road for most of its length. Future pedestrian facilities are anticipated to become more comprehensive as Whenuapai is developed. Due to the anticipated scale and type of land use, footpaths on both sides of the road, as well as a network of pedestrian facilities through parks and open spaces will be important for the area.

The future reduction in the speed limit to 50km/h on Trig Road will result in a safer environment for students to walk and cycle to school for Phase 2 of the school.

Trig Road is expected to remain at the current 80kmh speed limit until the road is urbanised. It is recommended that the Phase 1 of the school has a 40kmh school zone to ensure slower traffic speeds around the school.

When designing for walking, scooting and cycling the following key components need to be considered:

- **Desire lines** children who travel by active modes are likely to follow their desire line. Crossing points and paths should be located on desire lines so that they are used. Desire lines can also assist with understanding where the pinch points may be.
- Interactions with Other Modes The layout of a site needs to be designed so that interactions between children walking, scooting or cycling to school and motor vehicles are minimised. Crossing points and paths also need to be located so that no hazards are introduced along the route.
- Path and Crossing Design Both within the site and outside the school gates, paths need to have the capacity to accommodate the expected flows and mix of uses.

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3.3 Public Transport

There is currently one bus route that services Trig Road. Bus service 114 runs from Hobsonville Point Ferry terminal to Herald Island, around Whenuapai and finishes at Westgate. It runs a service at least every 60 minutes, seven days a week. There are no existing bus stops on Trig Road. This route can be seen in Figure 3.5.

The 120-bus route runs along Hobsonville Road nearby the proposed school site. It operates between Henderson and Constellation Station on the North Shore.



Figure 3.5 Bus Services in Whenuapai

3.4 Road Safety

To understand the existing safety performance of the road network in the vicinity of the site, crashes that were recorded within the last five years (2016 – 2021 inclusive) were obtained through the Waka Kotahi NZ Transport Agency Crash Analysis System (CAS) database. The extent of the crash search is shown in Figure 3.6. A total of two crashes were recorded, one serious and one non-injury crash. The serious crash occurred outside the proposed school site, involving an overtaking motorcyclist coliding with a turning vehicle. The non-injury crash was a rear end accident at the Trig Road / Ryans Road intersection. The CAS collision diagram is shown in Figure 3.7

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Significant upgrades are proposed to the roading network before transitioning to Phase 2 of the school. The upgrade of Trig Road and a reduction in the speed limit will create a safer environment for a future school.







Figure 3.7 CAS Analysis - Collision Diagram

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4. Strategic Context

4.1 Relevant Strategies and Policies

The following relevant regional and local plans need to be considered from a transport perspective to ensure consistency with outcomes.

Auckland Plan

A 30-year strategy to manage Auckland's growth and development. The plan identified three major challenges facing Auckland:

- Population growth and its implications
- Sharing prosperity with all Aucklanders
- Reducing environmental degradation

Some of the transport related focus areas of the plan include making walking, cycling and public transport preferred choices, reducing death and serious injuries on the road, and developing a sustainable and resilient transport network. The plan acknowledges that not many Aucklanders use their bikes to travel to school. Getting more children to cycle will ease congestion, reduce the environmental impact of travel, and improve the health of those that cycle. Auckland Council has indicated cycling infrastructure as an area for increased investment.

Auckland Regional Land Transport Plan

A 10-year transport investment programme for Auckland. The programme aims to encourage a move away from singleoccupant vehicles as the dominant mode of travel, and toward public transport, walking, and cycling. It will lead Auckland towards being a city where there is growth without increased congestion and one with multiple and genuine travel choices. In order to address Auckland's challenges, the plan tracks the active and sustainable mode share at schools as a performance measure. The plan seeks to achieve 45% active and sustainable mode share by 2028.

The DRAFT RLTP for 2021-2031 has recently been released for submissions. It should be emphasised that it is in draft form and the final RLTP for 2021-2031 is understood to be finalised in mid-2021. However, it is worth noting that the draft indicates that Trig Road upgrade is categorised as highest priority and marked as '1 – Committed and Essential' and proposes funding for the delivery of Trig Road towards the end of the 10-year period, however this is still to be confirmed. Although indicative, this suggests that the Trig Road upgrade as potential to align with the transition to Phase 2 of the school.

Auckland Future Urban Land Supply Strategy

The Auckland Future Urban Land Supply Strategy sets out how and when new urban land is to be supplied for development. The Whenuapai area is split into various stages with the first stage tagged as 'Development Ready' and marked as a Live Zoned Area in the 2012-2017 time period. The Trig Road development is not referenced in this document due to early stage of the plan change process.

Supporting Growth Alliance

The Supporting Growth Alliance is a collaboration between Waka Kotahi and Auckland Transport to carry out the planning phase of the Supporting Growth Programme, with focus growth areas in Warkworth, North, Northwest and South Auckland. The Alliance provides route protection for preferred future transport networks.

The Supporting Growth programme proposes an upgrade of Trig Road that includes walking, cycling and PT facilities. This upgrade will include two traffic lanes and walking and cycling facilities on both sides of the road. The road will have a posted speed limit of 50km/h.

SGA proposes to upgrade the section of Trig Road between Hobsonville Road and SH18 first and the northern section of Trig Road to come later. However, Covid19 has suspended plans temporarily due to funding issues. At time of writing this report, there is uncertainty to the future timing and extent of SGA works in the area, including the urbanisation of Trig
Road. It is understood that further information will be available with the publication of the Auckland Regional Land Transport Plan (RLTP) in mid-2021.



Figure 4.1 North-west Auckland Indicative Strategic Transport Network

4.2 Engagement with Council

Engagement with key organisations has been undertaken as part of the preparation for this ITA and is expected to continue as the proposed school is developed. These are listed and summarised below in Table 4.1.

Organisation	Engagement	Feedback
Auckland Transport (AT) and Supporting Growth Alliance (SGA)	24 February 2021 Initial meeting with Liam Burkhardt - Planner; Rory Power - Planner; Lorraine Stone SGA	Main discussion was the location of school access points given the area is currently undeveloped and the local road network is unknown. Refer Appendix A for detailed comments on AT feedback. SGA confirmed that the timeframe for the upgrade of Trig Road has been put on hold due to Covid19. The RLTP will provide more information on its release in mid-2021 (It should be noted that the Draft RLTP (March 2021) indicates the Trig Road upgrade project has High Priority in terms of funding). SGA confirmed that the preferred option for the southern end of Trig Road is to retain the <i>existing</i> alignment, that is, not proceed with the realignment of Trig Road to join up with Luckens Road intersection.
Auckland Council (Council)	15 April 2021 Preapplication meeting with Eryn Shields (AC); Liam	Auckland Council were generally supportive of the school proposal. No major issues or concerns were raised from Council at this stage.

Table 4.1 Summary of engagement



Bu (A	3urkhardt (AT); Rory Power AT)	Auckland Transport raised matters such as safety of students and the efficient operation of Trig Road.
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4.3 Summary

From the review of the strategies and plans the following transport aspects need to be considered in the development of the site for use as a school.

- Accessibility The school site needs to have a high level of accessibility by all modes to support travel choice. This means that access by modes that encourage active modes and reduce dependence on private vehicles are provided for through a site that is well connected with the surrounding transport network.
- **Safety** Access to the school is developed with safety as a key consideration. This means measures such as suitable road crossings and safe pick up and drop off area. It is important that safe vehicle speeds around the school site be encouraged through road design, monitored, and enforced.
- Efficiency The traffic generated by the site should not have an unacceptable adverse impact on the surrounding road network in terms of travel time. Fewer vehicle trips will lead to reduced environmental degradation.

Over the next 10 years, Auckland is expected to grow by 300,000 people, and existing and new transportation challenges will grow with it. The Whenuapai development and Trig Road Primary School will help to support that growth. The planned school can comply with the objectives of the listed plans and strategies.

5. Proposal

The new school will be a full primary school (Years 0-8) that will develop in two phases. Phase 1 will operate an overflow school to serve a shortfall in the school network capacity in Whenuapai, Redhills and Hobsonville. Phase 1 is expected to cater for a maximum of 600 students with an opening date in 2022.

As residential development occurs in the vicinity of Trig Road, the school will transition into Phase 2 which will service the local catchment area. The school will cater for 1000 students and also accommodate an Early Childcare Centre (ECE) for up to 50 children. It is anticipated that Phase 2 of the school will transition in around 2027, however this is dependent on the scale of residential growth in the area. It is expected that it will take some time for the school to build up to the masterplan roll.

5.1 Site Layout and Access

The existing site only has road frontage onto Trig Road. Phase 1 is proposed to open in 2022 and will therefore have to take access from Trig Road as there will not be any other road frontage at the time of opening. The Whenuapai Structure Plan shows an indicative future road along the south-eastern boundary of the site. Auckland Transport have confirmed that the timing and potential for this road to proceed is dependent on development (by private developers) to the southeast of the site. A Structure Plan is a non-statutory document and as such there is no assurance that this road will proceed. There is also a wetland that straddles the south eastern boundary of the site which may create challenges for the construction of a future road in this location.

Given the uncertainties of a future road on the school boundary, we have assumed access to both phases of the school will be off Trig Road. In the event that a future road is constructed prior to the opening of Phase 2, it is recommended that access options are reassessed to allow, if considered reasonable, further access off the minor road. The feasibility plan for Phase 2 of the school has shown an indicative area where access could be catered for.

If a future minor road does proceed along the southeastern boundary of the site, the Whenuapai Structure Plan has indicated that this intersection adjacent to the school may be a signalised intersection. Whether signals will be appropriate at this intersection will likely depend on if it will be a cross-roads intersection across Trig Road; and future traffic and pedestrian volumes. The intersection is unlikely to warrant signalisation if it is a three-leg intersection only.

The site layout will likely change between the phases of the school to include the addition of new teaching spaces, however the primary access is proposed to remain the same. The Phase 1 school feasibility site plan is shown in **Figure 5.1**, with the Phase 2 school feasibility plan displayed in **Figure 5.2**.



Figure 5.1 Phase 1 School Feasibility Plan



Figure 5.2 Phase 2 School Feasibility Plan

The catchment area for the future Trig Road school is currently rural with development expected to start in the coming years. Until such time that development occurs, the site will be used to accommodate a shortfall of students from

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surrounding growth areas such as Red Hills, Hobsonville and further north in Whenuapai. The catchment of the school is discussed further in Section 5.5.

The PUDO will be a one-way system with two vehicle crossings, an entry only access at the northern end of the site and an exit only, approximately 60 metres further south. The one-way operation of the access results in fewer conflict points and a safer access. The PUDO will be discussed in more detail in Section 5.3.

The access will be designed to accommodate tracking for buses, service vehicles and emergency vehicles. Trig Road is straight and relatively flat resulting in good sight lines in both directions. An assessment showing more than adequate visibility from both access points has been undertaken in Section 5.2.

Pedestrian and cycle access will be separated from the vehicle access allowing for a separation between vehicles and school children entering and exiting the school grounds on foot. Further design of the pedestrian and cyclist access points will be developed at Outline Plan of Works (OPW) stage taking into account accessibility, safety and desire lines.

It should be noted that the location of the pedestrian crossing in the Feasibility Plan Layout is indicative only and the final location of the crossing will be determined by the queueing requirements needed for the access points, and the location of the main pedestrian entrance to the school. The SIDRA assessment demonstrates that the maximum queue experienced in all scenarios on Trig Road is 19m, factoring in the long frontage of 120 metres means that adequate separation between the pedestrian crossing and the access points can be comfortably achieved.

5.2 Visibility Assessment

Appropriate sight distance between drivers exiting the site and approaching drivers on the frontage road should be provided at all accessways. The Austroads Guide to Road Design Part 4A provides the types of sight distance to consider when designing intersections. The Safe Intersection Sight Distance (SISD) has been adopted which is the distance for a driver on a major road to observe a vehicle on a minor approach moving into a collision situation and to decelerate to a stop before reaching the collision point.

The guidelines on the SISD are based on Austroads 2017, Guide to Road Design Part 4A (Unsignalised and Signalised Intersections). The minimum sight distance should be provided on the major road at any intersection. The existing (80km/h) and proposed (50km/h) speed limits have been used at two locations on Trig Road. The first location is the PUDO entry, where visibility for the right turners into the site needs to meet the minimum sight lines. The second location is the PUDO exit, where vehicles exiting the site to turn either left or right have adequate visibility.

The access is proposed to be the same for both phases of the school, therefore the visibility assessment is the same for all stages of the school.

The scenario where the greatest sight distance is required is a design speed of 80km/h, where Austroads recommends a minimum SISD of 181m. The sight distance from both the entry and the exit both exceed the minimum recommended SISD requirement, as shown in Table 5.1.

Direction on Trig Road	Speed limit (km/h)	Recommended Sight Distance	Available Sight Distance (from PUDO Exit)	Available Sight Distance (from PUDO Entry for right turn)
North approach	80	181 metres	>280 metres	>200 metres
South approach	80	181 metres	>200 metres	>200 metres
North approach	50	97 metres	>280 metres	>200 metres
South approach	50	97 metres	>200 metres	>200 metres

Table 5.1 Safe Intersection Site Distance along the site frontage on Trig Road

5.3 Pick Up Drop Off (PUDO) Area

The relatively large site has the benefit of providing a generous PUDO area for both phases of the school.

Phase 1 is anticipated to have a higher demand for on-site PUDO due to a higher vehicle modal share and limited onstreet parking available prior to the development of the road network. As shown on Figure 5.1, the PUDO will have the potential capacity of approximately 60 parking spaces which is likely to be more than adequate for caregivers to pick up and drop off their children.

At the time that Phase 1 transitions to Phase 2 of the school, there will be less of a demand for on-site PUDO as the catchment narrows down to the local residential area. More students will be walking and cycling to school and the vehicle modal share will reduce. However, the provision for staff and visitor car parks will increase with the growth in the school roll. It is therefore proposed to retain the same footprint of the car park, with an increase in staff/visitor parks and a reduction in the PUDO parks. The number of PUDO parking spaces for Phase 2 of the school is expected to be approximately 30 car parks.

Design options will be worked through at OPW stage which may include opportunities for access via other roads, that may be constructed in the future in accordance with the structure plan. However, a rough sketch has been provided in Figure 5.3 as a preliminary design. There will be an entry aisle with parking on both sides of the traffic lane. Vehicles will proceed around the turning head towards an exit aisle that will also have parking on both sides of the lane. Children will be encouraged to always exit on the footpath side of the vehicle and cross at the designated crossing points. There are options for the PUDO to cater for pick up and drop off (where caregivers are not permitted to exit the vehicle); and P5 to allow for caregivers to escort their children into the school grounds. The PUDO can also be used during the school day for visitors, service vehicles and buses for field trips etc.



Figure 5.3 Sketch of PUDO layout

5.4 School Roll

The school roll will differ for the two phases of the school.

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Phase 1 is expected to accommodate a maximum of 600 students (Years 0-8), with an opening date of 2022. This phase will be taking up the shortfall from surrounding areas which are developing at a fast rate, including Red Hills, Hobsonville and Whenuapai to the north. There will not be an ECE at Phase 1 of the school.

Phase 2 will have a masterplan roll of 1,000 students (Years 0-8), which is expected to operate once development growth occurs in the local area.. The school will have an on-site Early Childhood Centre (ECE) accommodating up to 50 children.

ECE Facility

An Early Childhood Education (ECE) centre is to be included with Phase 2 of the school and understood to accommodate up to 50 pre-school children and up to 13 staff. The opening hours of the ECE are likely to be 7.30am – 6pm, with the peak drop off and pick up times expected to differ from the school start and finish times. The layout of the school will be confirmed at OPW stage. The ECE will have dedicated parking across from the centre, with a shared access with school traffic. The access arrangements may change with a future road layout which will covered in the NOR conditions.

5.5 School catchment

The catchment will be different for the different phases of the school, as described below.

Phase 1 School

Phase 1 school is anticipated to be in operation from approximately 2022 – 2027 and will take students from further afield This is to cater for the estimated shortfall of 600 students from Red Hills, Whenuapai (north) and possibly Hobsonville.

Phase 2 School

The core school catchment anticipated for the Trig Road Primary School is expected to be the future residential development planned to the west and east of Trig Road. This area is depicted in the Whenuapai Structure Plan ITA as Zones 1 and 2, as shown in Figure 5.4.

The Whenuapai Structure Plan ITA deduced from Council's ART Land use model that Zones 1 and 2 is forecasted to house 1,400 dwellings at full development. Using MOE's formula for calculating the number of primary aged school children from the number of dwellings, it is anticipated that approximately 420 students (years 0-8) will reside in zones 1 and 2, or within a 1km walk to school. The ITA also states that there is likely to be a portion of residential in the business zones (depicted as orange in the map below) centred around public transport routes.

As the area develops and new schools are opened to service the Whenuapai area, it is likely the zones of existing schools may reform to incorporate more walkable catchment areas. The Trig Road school catchment may therefore extend into the existing residential areas of West Harbour and Hobsonville. The maximum masterplan roll of 1,000 students also allows for the event of more intensive residential housing than what the proposed plan change anticipates.



Figure 5.4 Core school catchment area based on the ART Land use zones (extract from the *Whenuapai Structure Plan ITA*).

5.6 Modal Share

The modal share will be very different for the different phases of the school due to the different catchments.

Phase 1 School

Phase 1 of the school is likely to experience a much higher car modal share due to students coming further afield. The Trig Road area will not be developed at this stage and infrastructure will not be in place to allow for walking and cycling to school. The majority of students are anticipated to come from Red Hills, Hobsonville and the northern Whenuapai area. The main mode of travel will likely be by private vehicle or Park & Walk.

There are many opportunities for caregivers to drop their children off on Trig Road, Hobsonville Road (Park & Walk) and Ryans Road where the student walks the final leg to school on foot. This is a desirable outcome for caregivers of older children as they avoid getting caught up in school traffic.

The modal share adopted for Phase 1 includes 85% driving to the school grounds with 15% of students using a park and walk method in the mornings. The afternoon peak assumes 100% of students get picked up by car at school finish time. A sensitivity test has also been undertaken showing 100% of school traffic using the access during the morning peak.

Phase 2 School

The school roll is expected to be a maximum of 1000 students with an additional 50 pupils for ECE. The school will require an assumed staff of 50 staff based on a 1:20 staff to pupil ratio.

Auckland Transport have provided Abley with the average modal share for Primary and Intermediate TravelWise schools for 2020. Primary schools had an average car modal share of 49% in the morning peak and intermediate schools had an average of 37% arriving by car. The future Trig Road school will be a full primary combining primary and intermediate years, resulting in an average car modal share of 46%.

The Travelwise modal share data is only collected in the mornings. However, it is well understood that car use is significantly reduced in the afternoons for several reasons such as after school programmes, extra-curricular classes at

school or going home with friends. The New Zealand Household Travel Survey (NZHTS)³ indicates that primary school (Years 0-6) children in Auckland experience a 5% reduction in car trips in the afternoons, with Intermediate schools (Years 7-8) having a 13% reduction in afternoon car use. For a full primary (Years 0-8) this averages out to a 7% reduction in car modal share in the afternoons. The car mode share assumed for a future Trig Road school is 46% in the mornings and 39% in the afternoons, as shown in Table 5.2.

It is not known at this stage if the school will have allocated school buses. Given the school will include Intermediate age children (Years 7-8), a proportion of students are assumed to travel to school by public transport.

Table 5.2 Modal split

	Walk/Cycle/Scoote r	Public Transport	Vehicle	Car/Walk (>400m)	Other
Auckland average Travelwise Primary schools (Yrs 0-6)	32%	3%	49%	14%	2%
Auckland average Travelwise Intermediate schools (Yrs 7-8)	30%	16%	37%	15%	2%
Trig Road (Phase 2) School - Mornings	33%	5%	46%	14%	2%
Trig Road (Phase 2) School - Afternoons	38%	7%	39%	14%	2%

5.7 Walking and Cycling Provision

Phase 1 School

Phase 1 of the school is expected to open in 2022 which will not have upgraded walking and cycling infrastructure in place. An existing footpath on the western side of Trig Road and a safe crossing point outside the school frontage is considered adequate to accommodate the small proportion of school students that may be dropped off and walk the last leg to school on Trig Road. The majority of school students will be travelling by private vehicle and driving into the school grounds.

The posted speed limit of Trig Road is likely to remain at 80km/h until the upgrade occurs. It is recommended that the Phase 1 school applies for a 40km/h School Speed Zone to ensure a safer road environment in proximity to the school. Alternatively, there may be opportunity for the speed limit on Trig Road to be permanently reduced to 50km/h prior to the upgrade. The preferred approach for reducing the speed limit will be determined in consultation with Auckland Transport.

Phase 2 School

Phase 2 of the school will be encouraging active modes to school including walking, cycling and scooting. As the Trig Road area develops, the roads will be urbanised with new facilities for walkers and cyclists as discussed in Section 3.2. Protected cycleways are proposed on Trig Road, with a footpath on both sides of the road.

Phase 2 will be opening when development has occurred in the area, when there are school children living in the area to attend the school. This will also likely coincide with the road upgrades which will be needed to support the residential growth in the area.

³ https://www.nzta.govt.nz/resources/research/reports/467/

New developments in Auckland are generally planned and constructed to a design speed of 30 km/h, which is also expected in the design of Whenuapai. This expectation is outlined Auckland Transport's TDM (Chapter 4 of the Urban Street Road Design Guide) which provides target speeds for the design of new roads, as shown in Figure 5.5 below. Trig Road will function as an arterial road and likely be categorised as a Mixed-Use Arterial which are designed to a 30-40km/h speed near schools as seen in Figure 5.5. The slower speed around the school provides a safer road environment for students walking and cycling to school.

Desired speed	Appropriate location
10 km/h	Shared spaces
30 km/h	Main street Arterial or Collector. Local Streets. Some Mixed-Use Arterials in centres. Also any type near schools or other major pedestrian destinations. Points of conflict with vulnerable people (crossings, intersections).
(***) 40 km/h*	Neighbourhood or Mixed-Use Collectors. Some Mixed-Use Arterials in centres. Any School Zones that have not been reduced to 30 km/h. *Prefer 30 km/h for safety, unless protected crossings provide good accessibility.
50 km/h	Single Use Arterials. Mixed-Use Arterials with extended urban lengths. These streets must be provided with suitable safe crossing points with speed reduced locally.
>50 km/h	Single use arterials with limited access, Urban expressways and motorways. Safe crossings should be grade-separated or at intersections with speed reduced locally.

Figure 5.5 Speed Targets table (AT's Transport Design Manual)

Safe crossing points outside the school and footpaths of an appropriate width along the school frontage are supported to ensure safe routes to school. Pedestrian and cycle access at the school frontage will be separated from the vehicle access allowing for adequate separation between vehicles and school children entering and exiting the school grounds. Further design of the pedestrian and cyclist access points will be developed at OPW stage taking into account accessibility, safety and desire lines outside the school.

Provision of adequate on-site cycle/scootering facilities within the school grounds is important to encourage a high level of active travel.

5.8 Public Transport

Public Transport or a school bus may be a consideration for Phase 2 of Trig Road School. Provision for school buses can be accommodated within the design at OPW stage if deemed necessary.

School buses required for field trips etc for both phases of the school can utilise the PUDO area during the school day. Tracking for buses accessing the PUDO area will be provided at detailed design stage.

5.9 Travel Planning – School and ECE

A School Travel Plan (STP) is proposed to be developed prior to the school opening. The STP will be produced in conjunction with Auckland Transport's TravelWise programme. Engagement with Auckland Transport and the Council will help to support an overall integrated transport plan that covers the needs of all educational facilities in the area.

The STP will provide measures to encourage and incentivise safety for active travel to school and reduce vehicle dependence for students and staff. The Travel Plan is envisaged to be a live document that addresses traffic-related and road safety concerns from school activities on an ongoing basis.

There may be an opportunity and benefits of developing a joint travel plan for the school and the ECE facility. The travel plan will also consider measures to manage pick up and drop off behaviours and safe practices for the ECE.

5.10 Parking

The 'AUPOP Chapter K – Designations - Minister of Education' standard conditions for all education designations require that:

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- On-site car parking shall be provided at the rate of two carparks per new classroom or classroom equivalent, except
 where the council accepts, on the basis of a specifically commissioned parking study by an appropriately qualified
 engineer and/or transportation planner, that a lesser level is appropriate.
- In addition to any car parking required for the school, on-site car parking for early childhood education (preschool) shall be provided at the rate of one car park per every 10 children the facility is licensed or designed to accommodate, plus one per each full time equivalent staff member required for the license or design capacity of the centre, except where the Council accepts, on the basis of a specifically commissioned parking study by an appropriately qualified engineer and/or transportation planner, that a lesser level is appropriate.

Phase 1 School

There are 27 teaching spaces / classrooms proposed for Phase 1 of the school. At a rate of two car parks per teaching space as per the standard designation condition in the AUPOP, the requirement for parking would be 54 car parks for staff and visitors, with 54 car parks proposed as shown on the site plan and in **Table 5.3**. The PUDO parks are also available to visitors during the day resulting in a generous supply of car parking.

Phase 2 School

An additional 17 teaching spaces will be provided for Phase 2 of the school resulting in a total of 44 teaching spaces / classrooms. At a rate of two car parks per teaching space as per the standard designation condition in the AUPOP, the requirement for parking would be 88 car parks for staff and visitors, with 88 car parks proposed as shown on the site plan and in **Table 5.3**. The PUDO parks are also available to visitors during the day, again resulting in a generous supply of car parking.

ECE facility (Phase 2 School only)

The ECE centre will have separate parking across from the facility. An area of 1,500m² for the ECE centre and an additional area for parking has been provided within the school feasibility plan layout. This is ample space to provide sufficient space for the centre and associated parking. MoE's designation conditions require parking at the rate of one car park for every 10 children the facility is licensed or designed to accommodate, plus one for each full time equivalent staff member. For a ECE roll of 50 children, five car parks are to be provided for pick up and drop off. It is recommended that the pick up and drop off parks are provided close to the centre and separate from the school pick up and drop off. A **further 13** car parks may be required for staff, however these can either be provided in the main school car park or outside the ECE facility. The design of the ECE centre and associated parking will be detailed at the next stage of development.

School facility	Parking Demand / Requirement	Parking Supply	
Phase 1 School	54	54	
Phase 2 School	88	88	
ECE Facility	18	Can comply	

6. Transport Effects

6.1 Forecast traffic volumes

Phase 1 School

Traffic volumes for Phase 1 of the school will be similar to existing traffic volumes. Traffic volumes on Trig Road between Ryans Road and SH18 on-ramp has been extracted from Auckland Transport's website, with the most recent entry being 2018. A 2% traffic growth per annum has been applied as per usual practice, to represent traffic volumes in 2022 as shown in Table 6.4.

The morning peak hour on Trig Road is understood to occur earlier than the average peak hour likely due to its distance from Auckland CBD and consequent longer journey times to work/study. All of the entries of Trig Road traffic counts on AT's website show that the peak demand is between 6.45–7.15am. Traffic flows at the school start time (between 8.45-9.00am) will therefore be lower than the peak hour and have been estimated at 75% of the peak demand. It should be noted here that 75% of the AM peak hour is still over 25% higher than interpeak traffic volumes.

The interpeak traffic counts for Trig Road have been utilised for the school finish time. School finish time at 3pm in Whenuapai is not thought to coincide with evening peak volumes.

Phase 2 School

Forecasted traffic volumes for full development of the Trig Road area have been extrapolated from the Whenuapai Structure Plan's ITA prepared by Flow in August 2016. The ITA refers to a 2046 Base Model which includes the anticipated landuse in Whenuapai and the predicted landuse assumed by the ART model, and include the new roading improvements proposed by the Supporting Growth Programme (known as TFUG in 2016). Flow modelled several stages of development of the surrounding area.

Table 6.4 Current and Forecasted Traffic Volumes

Source	Year	AM Both directions Veh/hr	Interpeak Both directions Veh/hr
Phase 1 School			
AT Website	2018	784 (75% - 588)	466
2018 vols + 2% growth p.a.	2022	831 (75% - 623)	494
Phase 2 School			
Structure Plan	Full development at 2046	1,350 (estimated) (75% - 1,015)	810

Morning forecasted traffic volumes

The model output from the full development scenario for the area showed Trig Road experiencing between 0-900 vehicles in the peak hour, in each direction as shown in **Figure 6.1**. The model output shows that northbound traffic (towards the motorway intersection with SH18) on Trig Road is heavier in the morning peak and vice versa in the evening peak, as expected. In the interest of taking a conservative approach, we have assumed the maximum end of the range of 900 vehicles travel north in the mornings, with an estimated (assumed 50%) 450 vehicles travelling southbound.

As above, we have assumed that school start time will occur at the tail end of the morning peak and have therefore assumed 75% of the peak hour traffic. It is generally recognised that a large proportion of school traffic is pass-by traffic

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where students are being dropped off by caregivers on the way to work or study. We have not allowed for any pass-by trips in our assessment, to again ensure a conservative approach.

Afternoon forecasted traffic volumes

There is no model output for the interpeak i.e. the school finish time. To estimate the forecasted traffic volumes for the interpeak, we have applied the percentage difference between the AM peak and the Interpeak based on existing traffic count data for 2018. Currently, the interpeak experiences 60% of the morning traffic volumes. We have therefore used 60% of the AM Peak model outputs to estimate the traffic volumes on Trig Road at school finish time, which is approximately 810 vehicles, or 405 vehicles in each direction.





Figure 6.1 Flow's model output at full development of area (Image taken from the Whenuapai Structure Plan 2016 Figure 47, Page 79)

6.2 Trip Generation and Distribution

Trip Generation

The number of vehicle trips generated by Phase 1 of the school is estimated at 728 (364 vehicles) at school start and finish times, as shown in Table 6.5. The number of vehicle trips generated by Phase 2 of the school is 658 (329 vehicles) in the mornings and 558 (279 vehicles) in the afternoons.

The number of vehicle trips is estimated based on the anticipated modal split for the school and the average number of students per vehicle.

School start/finish time	Maximum School Roll	Vehicle use	Ave students per vehicle	No. of Vehicles / Trips
Phase 1 School (Mornings)	600	85% Drive (15% Park & Walk)	1.4	364 / 728
Phase 1 School (Afternoons)	600	100% Drive	1.4	428 / 728
Phase 2 School (Mornings)	1000	46% Drive	1.4	329 / 658

Table 6.5 Number of school vehicle trips for Phase 1 and Phase 2 School

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Phase 2 School (Afternoons)	1000	39% Drive	1.4	279 / 558
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Trip Distribution

For the purpose of modelling the operation of the school access, school traffic trip distribution has assumed an equal distribution from each direction on Trig Road, with 50% assumed to come from the North and 50% from the South. This distribution has been applied for both phases of the school.

Trip Generation of ECE

The vehicular trip generation has been predicted for the proposed ECE facility. The rates have been sourced from the NZ Trips Database Bureau and RTA guidelines and an average has been used in this assessment as shown in Table 6.6.

The ECE facility is expected to generate 40 trips in the mornings and 34 trips in the afternoon. The peak times for the ECE facility are not expected to occur at the same time as the primary school, for the following reasons:

- The opening hours of the childcare facility are likely to be 7.30am-6pm, with the peaks likely to be 7.30-8.30 and 5-6pm which differ from the school travel times.
- Users of the ECE facility that do not have children at the school will likely avoid travelling to the ECE at the school peak times and wait until the area is less busy to make their journey.

Table 6.6 Trip Generation Rates - Early Childhood Education

Source	Morning Peak Trip Rates	Afternoon Peak Trip Rates

Early Childhood Education facilities

RTA Guidelines	1.4 trips/child (2 hour)	0.8 trips/child (1.5 hour)
New Zealand Trips Database Bureau (TDB)	0.9 trips/child (1 hour)	0.8 trips/child (1 hour)
Average	0.8 trips /child / hr	0.67 trips/child / hr

6.3 SIDRA Modelling

The school access has been modelled with SIDRA for both phases of the school , with the results and assumptions provided below.

As discussed in Section 5, the PUDO will operate with two access points off Trig Road with an entry only and an exit only, separated by a distance of approximately 60m. This is illustrated in **Figure 6.2**.

A right turn bay on Trig Road is proposed to ensure school traffic does not affect the operation of Trig Road.



Figure 6.2 PUDO access

Assumptions for Sidra Modelling

The following assumptions and inputs were adopted for the Sidra models:

- The morning peak for school drop off has been modelled over a 30 minute period. This is based on the knowledge that schools typically allow students into the classrooms/school grounds at 30 minutes before the start of school.
- As per the Structure Plan, the upgrade of Trig Road will include a median/turning bays. This will facilitate right turning movements into and out of the site.
- Staff and ECE trips are outside of the peak school pick up/ drop off period and have therefore not been included in the SIDRA peak model. However there may be a proportion of shared trips where school students have siblings that attend the ECE.
- The full development roll of 600 for Phase 1 and 1000 students for Phase 2 has been modelled.
- The forecasted volumes have been taken from the model output from the Whenuapai Structure Plan ITA. The maximum of the range of forecasted volumes has been used in the SIDRA model which ensures a very conservative approach.
- The modal split provided in **Table 5.2** shows a vehicle use of 46% and 39% in the mornings and afternoons respectively for Phase 2 of the school, and an average of 1.4 students per vehicle. Phase 1 is assumed to have a much higher vehicle use of 85% driving and 15% park and walk in the mornings and 100% driving in the afternoons. A sensitivity test showing 100% school traffic using the school access in the mornings has also been undertaken.
- School drop off is assumed to occur between 8.15-8.45am or 8.30-9am depending on school start time. The hour of peak demand is 6.45-7.45am in Whenuapai as discussed in Section 6.1. By 8.15am the peak demand is expected to have dropped off and therefore 75% of the peak hour volumes are used for the SIDRA models. This 75% traffic volumes of the AM Peak are still higher than the interpeak, reflecting the tail end of the morning peak time.
- The PUDO was modelled assuming every car trip enters the PUDO/school grounds. This is again considered a conservative approach as it is likely that a proportion of vehicles may park on-street and walk their children into the school grounds.



• It is expected that the future cross-section of Trig Road will have a median for vehicles to use when exiting the school access with a right turn. The provision of a flush median has not been included in the SIDRA model as it is not required for the access to operate at a good level of service. The provision of a flush median will only improve how the access will work.

Phase 1 School: PUDO access off Trig Road

The SIDRA model for the **entry only** access for Phase 1 of the school, in the morning and afternoon peak, operates very efficiently with a Level of Service (LOS) A on every movement other than the right turn into the site which operates at a Level of Service of B. A proposed right turn bay for vehicles turning right into the school entry will experience a maximum queue length of 19m. A summary of the SIDRA results are provided in **Table 6.7** with more detailed results in Appendix B.

The SIDRA model for the **exit only** access for Phase 1 of the school, in the morning and afternoon peak, also operates very efficiently with a LOS A for each movement, other than the right turn out of the site which operates at a Level of Service of B. A summary of the SIDRA results are provided in **Table 6.8** with more detailed results in Appendix B.

A sensitivity test was undertaken for the morning peak, with the SIDRA model assuming 100% of school traffic driving through the school access, in comparison to the adopted scenario of 85% driving and 15% park and walk. The SIDRA model for the entry only, continues to operate very efficiently with a LOS A on every movement other than the right turn into the site which operates at a LOS B. A proposed right turn bay for vehicles turning right into the school entry will experience a maximum queue length of 28m. A summary of the SIDRA results are provided in Table 6.9 with more detailed results in Appendix B. The SIDRA model for the exit only also continues to operate efficiently with a LOS A for each movement, other than the right turn out of the site which operates at a Level of Service of B, as shown in Table 6.10. The sensitivity test shows that the access will continue to operate very efficient in the unlikely event that 100% of the school traffic uses the school access.

Approach	Movement	AM Peak Hour			Inter-Peak Hour		
		Flow (vph)	Avg Delay (seconds)	LOS	Flow (vph)	Avg Delay (seconds)	LOS
Trig Rd South	Through	335	0.1	A	265	0	A
	Right	364	10.2	В	428	10.9	В
Trig Rd North	Through	335	0.1	A	265	0.1	A
	Left	364	4.7	A	428	4.7	A

Table 6.7 Sidra results for Phase 1 School Access: Entry only

Table 6.8 Sidra results for Phase 1 School Access: Exit only

Approach	Movement	AM Peak Hour			Inter-peak Hour		
		Flow (vph)	Avg Delay (seconds)	LOS	Flow (vph)	Avg Delay (seconds)	LOS
Trig Rd North	Though	335	0	A	265	0	A
Trig Rd South	Through	335	0	A	265	0	A
School Access Exit	Left	364	6	A	428	5.7	A
	Right	364	11.1	В	428	9.7	A

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Approach	Movement	AM Peak Hour		r	Inter-Peak Hour		
		Flow (vph)	Avg Delay (seconds)	LOS	Flow (vph)	Avg Delay (seconds)	LOS
Trig Rd South	Through	335	0.1	A	N/A – previously modelled (Table 6.7)		
	Right	428	12.5	В			
Trig Rd North	Through	335	0.2	A			
	Left	428	4.7	A			

Table 6.9 Sensitivity Test - Sidra results for Phase 1 School Access: Entry only, 100% School traffic using access

Table 6.10 Sensitivity Test - Sidra results for Phase 1 School Access: Exit only, 100% School traffic using access

Approach	Movement	AM Peak Hour			Inter-peak Hour		
		Flow (vph)	Avg Delay (seconds)	LOS	Flow (vph)	Avg Delay (seconds)	LOS
Trig Rd North	Though	335	0	A	N/A – previously modelled (Table 6.7)		
Trig Rd South	Through	335	0	A			
School Access Exit	Left	428	6.2	A			
	Right	428	12.2	В			

Phase 2 School: PUDO access off Trig Road

The SIDRA model for the **entry only** access on Trig Road in the morning and afternoon peak operates very efficiently with a Level of Service (LOS) A on every movement but the right turn movement on Trig Road South which operates at LOS B. A flush median or right turn bay will facilitate right turn movements into the site. A summary of the SIDRA results are provided in **Table 6.11**.

The SIDRA model for the **exit only** access on Trig Road, in the morning and afternoon peak, operates at an acceptable level with a LOS A for all movements except for the right turn out of the site which operates at a Level of Service of D in the AM peak, with an average delay of 32 seconds. The upgrade of Trig Road will have a flush median to facilitate the right turn movement out of the site. This has not been modelled in SIDRA as it operates at an acceptable level without the flush median. Therefore the addition of the flush median is only going to improve on the model. A summary of the SIDRA results are provided in Table 6.12 with more detailed results in Appendix B.

 Table 6.11 Sidra results for Phase 2 School Access: Entry only

Approach	Movement	AM Peak Hour			Inter-Peak Hour		
		Flow (vph)	Avg Delay (seconds)	LOS	Flow (vph)	Avg Delay (seconds)	LOS
Trig Rd South	Through	711	0.1	A	568	0.1	A

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	Right	330	9.7	A	278	12.1	В
Trig Rd North	Through	358	0.1	A	568	0.2	A
	Left	330	4.7	A	278	4.7	A

Table 6.12 Sidra results for Phase 2 School Access: Exit only

Approach	Movement	AM Peak Hour			Inter-peak Hour		
		Flow (vph)	Avg Delay (seconds)	LOS	Flow (vph)	Avg Delay (seconds)	LOS
Trig Rd North	Though	358	0.1	A	426	0.1	A
Trig Rd South	Through	711	0.1	A	426	0.1	A
School Access Exit	Left	330	6.1	A	330	6.6	A
	Right	330	32.4	D	330	14.2	В

7. Infrastructure Requirements

The following infrastructure requirements are supported for the two school phases.

Phase 1 School

- Safe crossing point across Trig Road, outside school entrance
- Localised widening of Trig Road to include a right turn bay for entry to school.
- No Stopping Lines At All Times (NSAAT) lines along school frontage (if deemed necessary by Auckland Transport)
- Footpath linking Trig Road pedestrian crossing to pedestrian entrance to school
- Installation of 40km/ph school speed zone

Phase 2 School

- Footpaths on both sides of road and cycle facilities as per upgrade proposed by SGA and identified for funding in Auckland Transport's draft RLTP
- Right turn bay / flush median as per Trig Road upgrade
- Speed reduction of 50km/h as per Trig Road upgrade
- Safe crossing point across Trig Road, outside of school entrance

8. Conclusions

It is considered that the land to be designated for educational purposes and the existing surrounding roading network can accommodate the anticipated traffic from both phases of the proposed school and can provide adequate access arrangements. It is also considered that a school on this site can satisfy the outcomes sought by the regional and local transport strategies and plans. Some key findings have been summarised below:

- The local road network in the Trig Road area is not confirmed at this stage. However the traffic generated by both phases of the school at this location can be accommodated on the existing road network without the reliance on future roads.
- The proposed access for both school scenarios are modelled with a separate entry and exit access point. The SIDRA models show all scenarios and time periods work at an acceptable level of service.
- The site can cater for the required parking demand for staff and visitors, student pick up and drop off and separate parking for an ECE facility.
- Detail of car and cycle parking, access arrangements and pedestrian crossings will be considered further during the OPW stage.
- A Travel Plan for the school and the ECE centre will be developed prior to the school opening to promote road safety and encourage active modes for travel to/from school.
- The infrastructure requirements for Phase 1 of the school include
 - A safe crossing point on Trig Road, including a footpath to link the crossing to the school entrance
 - Localised road widening and a right turn bay for access to school
 - No Stopping Lines At All Times (NSAAT) lines along school frontage (if deemed necessary by Auckland Transport)
 - Installation of a 40km/h school zone OR a permanent speed reduction to 50km/h
- The infrastructure requirements for Phase 2 of the school are primarily catered for by the Trig Road upgrade proposed by Supporting Growth and identified for funding in AT's draft RLTP (which is still to be confirmed).

This assessment concludes that Auckland Council can recommend confirmation of the NoR to designate the land for education purposes.

Alabley

Appendix A AT Feedback from (i) Inception meeting and (ii) Feedback on Draft ITA (May 2021)





To:	Kate Brill, Abley
	Chris Horne, Incite
From:	Sam McGough, Assistant Planner, Auckland Transport
	Liam Burkhardt, Planner, Auckland Transport
Date:	11 March 2021
Subject:	Auckland Transport's (AT) comments on a future school proposed by the Ministry of Education (MOE) at 13-15 Trig Road, Whenuapai

MOE has stated that a temporary primary school and early childhood education facility (ECE) will likely be required at 13-15 Trig Road as early as next year to account for a deficit in facilities in the north-west of Auckland. The temporary school will likely cater for up to 600 students.

MOE has also stated that by 2026, a permanent primary school and ECE will be opened on the same site. The permanent school will cater for 1,000 students or possibly more.

The table below sets out AT's preliminary comments on the proposed school at 13-15 Trig Road, Whenuapai. Please note that these comments are provided on a 'without prejudice' basis.

Торіс	Comment
General	 Regardless of the access option chosen by MOE, road widening and/or improvements to sections of Trig Road will be required as part of this proposal to ensure safe, effective and efficient movement to and from the site and to minimise conflicts between vehicles, pedestrians and cyclists on the adjacent road network.
	• Given that the temporary school will have a wider catchment area than the permanent school, it is likely that the temporary school will create more vehicle movements than the permanent school. Therefore, any temporary vehicle access to the school will likely need to be permanent.
Supporting Growth's Notice of Requirement for Trig Road	 In future, Trig Road is intended to function as an arterial road. Supporting Growth (SGA) has identified that Trig Road will need to be widened in future and has undertaken some design work to inform a future Notice of Requirement (NOR) to protect the corridor for future widening/upgrade works. This SGA NOR will cause some conflict with the Ministry's NOR, given that a small amount of land will need to be taken from the front of the site.
	 MOE will have to engage with SGA to view the proposed alignment plan.





Торіс	Comment
	• The school and ECE should not undermine AT's ability to widen and upgrade Trig Road in future.
Ryans Road Access	 MOE has suggested providing access from Ryans Road to the southwest of the school site. Based on feedback received internally, AT opposes the use of Ryans Road as an access to the school for the reasons outlined below.
	• Trig Road is an arterial road with a posted speed limit of 80km/h. The road has a semi-rural character with heavy vehicle traffic. The use of Ryans Road as an access will result in a greater volume of right turning traffic onto Trig Road.
	• There is a significant safety concern with large numbers of primary-aged students having to crossing an arterial road from the pick-up-and-drop-off area (PUDO) to access the school.
	 Ryans Road has limited parking availability. It is envisioned that most first journeys will be by private vehicle, which is likely to cause congestion at the PUDO area.
	• Trig Road is intended to be widened and improved as per SGA's future NOR outlined above. Ryans Road may be required to support these works which would cause conflict with PUDO activities.
	 Ryans Road is the sole access for the residents at this location. A PUDO would therefore create access issues for the existing residents.
Trig Road Access	 Improvements to Trig Road will be required as part of this proposal. Trig Road has a narrow traffic lane and no road shoulder. Traffic turning into the school site from Trig Road would have to stop in the traffic lane to turn, causing concerns for safety with potential for head-on-overtaking or rear-end crashes. In the last 5-year period, there has been one serious injury crash involving overtaking a vehicle at this location.
	 In reference to the above point, there is also a safety risk to the footpath on the western side of Trig Road.
	• A right turn bay will be required due to the potential for a high number of right-turning vehicles accessing the school at peak times. A right turn bay provides a safe access option while also mitigating some queuing on Trig Road. Road widening of sections of Trig Road will be required to accommodate a right turn bay.
	 Widening of Trig Road along the school road frontage to provide a limited car parking area for PUDO activities may still prove problematic for both through traffic and turning traffic. It is likely this area would encourage vehicles to reverse and





Торіс	Comment
	undertake U-turn manoeuvres, as well as potentially causing queueing at peak times on Trig Road
	 Any direct access along the school frontage at Trig Road should not undermine AT's ability to widen and upgrade Trig Road in the future as per the previous SGA NOR comments.
Internal Private Road Access	 Based on the internal feedback received by specialists, AT suggests an access option whereby MOE could construct a PUDO area internal to the site away from the Trig Road frontage. This would mitigate queuing issues on Trig Road for PUDO activities by providing more space for vehicles within the site.
	 A right turn bay will still be required due to a potentially high number of right-turning vehicles accessing the school at peak times. A right turn bay provides a safe access option while also mitigating some queuing on Trig Road. Road widening to sections of Trig Road will be required to accommodate a right turn bay.
Future Collector Road Access	 Plan Change 5: Whenuapai (PC5) is a proposed Plan Change seeking to rezone land from mostly Future Urban to a mix of business and residential zones. The Plan Change seeks to add a new precinct to the Auckland Unitary Plan – Whenuapai 3 Precinct.
	 Precinct Plan 2 of the proposed Whenuapai 3 Precinct identifies a collector road adjacent to the school site. The collector road provides another possible opportunity for access to the school site in the long term.
	• The funding and construction of collector roads are the responsibility of the relevant developer.
Safety	• A 50km/h speed environment should extend north of the proposed site. A school speed zone should also be considered along the school frontage for safety of active modes along Trig Road.
Public Transport	 Bus access and manoeuvring space will need to be considered. A bus parking area should be designated within the school site.
	• The 114 bus service operates along Trig Road and provides services between Westgate and Whenuapai. Any school on the site should provide bus stops and a safe crossing facility so that staff and students can use this service.
Active Modes	• SH16 and SH18 are regional routes on the strategic cycle network and Hobsonville Road is a major route. SGA's indicative cross-section for re-development of Trig Road includes separated cycle lanes. In the long term, a school at





Торіс	Comment
	this location will be well served by safe and convenient active modes connections.
	• Existing facilities for active modes on Trig Road and in the immediate area are not appropriate for a primary school. There is a narrow footpath on the western side of Trig Road with no footpath on the eastern side. There are also no crossing facilities on Hobsonville Road near the Trig Road intersection. Safe pedestrian routes should be considered in the context of the local catchment.
	 Pedestrian crossing points should be considered, such as a Kea crossing. Pedestrian crossings should comply with TDM standards and be located near the school frontage and separate to the main vehicle access.
	 AT suggests that an analysis is carried out around how safety concerns for vulnerable road users accessing the site can be mitigated if a temporary primary school is to be established in the near future.
Parking	 Staff parking should be provided to mitigate possible spill-over onto neighbouring streets. Staff will not be eligible for on-street reserved parking or permits.
	 Mobility parking spaces and loading bays should be allocated within the school parking area.
Lighting	• Street lighting should be considered. Activities occurring at the school in the evenings will generate traffic in hours of darkness.



AUCKLAND	TRANSPORT FEEDBACK ON DRAFT ITA REPORT D	ATED 24 MAY 2021
Торіс	Comment	Client Response
General	Section 1.1: The ITA should note the assumed timing for Phase 2 of the school. This is useful for AT to understand timing in relation to the potential Trig Road upgrade. At this stage the draft Regional Land Transport Plan 2021- 2031 (RLTP) identifies funding for delivery of the upgrade toward the end of the 1st decade, but this is still to be confirmed.	It is anticipated that Phase 2 of the school may be required around 2027, however this is entirely led by the scale of residential growth in the area. It is expected that it will take some time for the school to build up to the masterplan roll. This is noted in the ITA.
	Section 4.2: Table 4.1 states the following "Auckland Council and Auckland Transport were generally supportive of the school proposal. No major issues or concerns were raised at this stage." This statement is not entirely correct, as there are issues to be addressed as part of this proposal. AT has previously raised issues that centred on the safety of students and the efficient operation of Trig Road.	Noted and reworded in the ITA.
	Section 5: As mentioned above, the proposal should state the indicative timing for phase 2 of the school.	As above and noted in the ITA.
	Section 7: Indicates the infrastructure requirements for the two phases of the school. The ITA should specify whose responsibility these are. If infrastructure is required to mitigate the effects of the school, then this should be the responsibility of MOE. AT is willing to enter into a side agreement with MOE instead of conditions, to identify the infrastructure responsibilities of MOE and timing of required upgrades.	MoE accepts they will need to provide the infrastructure required if other parties (such as adjacent developers) haven't undertaken the works prior to the site being developed. Abley understands that the MoE is open to entering into a side agreement on necessary works to be implemented by the MoE to open Phase 1 of the school.
Supporting Growth's Notice of Requirement for Trig Road	The wording in the ITA does not clearly identify the role of Supporting Growth with respect to the upgrade of the Trig Road corridor. Supporting Growth is an alliance between Auckland Transport and Waka Kotahi to identify and route protect strategic networks for future growth. Supporting Growth is a planning mechanism and has no specific function in terms of implementation of upgrades. The latter is AT's	Noted. Wording has been changed in the revised ITA.

responsibility. The following bullet points identify specific sections of the ITA where the language should be corrected:

Section 2.1: states "The Supporting Growth Programme has proposed to upgrade..." This should be amended to "The Supporting Growth programme has proposed an upgrade of Trig Road that includes...."

Section 3.2: states "It is understood that Trig Road will be upgraded in accordance with the Supporting Growth Programme. Supporting Growth proposes to upgrade Trig Road to include walking, cycling and PT facilities." This should be amended to "The Supporting Growth programme has recommended an upgrade of Trig Road that includes walking, etc.... The Supporting Growth programme has undertaken investigations to support the route protection (designation) process for this upgrade. However, the planning and preparation to lodge the Notice of Requirement (NoR) for route protection is dependent on future funding decisions."

Section 3.2: For information on the Trig Road/Hobsonville Road intersection, it is suggested to add a reference to the latest SGA newsletter on Trig Road. Link attached below: o https://www.supportinggrowth.govt.nz/assets/North-West/Publications/NW-HIF-Project-Info-Sheets/58d010d539/Trig-Road-Upgrade-Project.pdf

Section 4.1: The ITA should note that the draft RLTP proposes funding for the delivery of Trig Road towards the end of the 10-year period, and that this is still to be confirmed.

Section 4.1: states "The Supporting Growth Programme proposes to upgrade Trig Road..." This should be amended to "The Supporting Growth programme proposes an upgrade of Trig Road that includes....", to clarify SGA's role.

	Section 5.7: The ITA assumes that the Trig Road upgrade will be implemented by phase 2 of the school. Please indicate whether phase 2 of the school relies on the Trig Road upgrade being in place, as this will rely on AT funding being confirmed for the project and the timing of delivery.	The full masterplan roll of Phase 2 school will rely on the upgrade of Trig Road. However, as the transition into Phase 2 begins, there will still be ample car parking on-site to cater for students being driven to school. It should be noted that the masterplan roll of Phase 2 will rely on a full buildout of the residential development in the area. This is unlikely to occur without the upgrade of Trig
	Section 6.1: states "new roading improvements anticipated by the Supporting Growth Programme". This should be amended to "new roading improvements proposed by the Supporting Growth Programme".	Road.
	Section 7: notes infrastructure improvements for phase 2 of the school and states " as per Trig Road upgrade undertaken by Supporting Growth". This should be amended to "as per upgrade proposed by SGA and identified for funding in Auckland Transport's draft RLTP", to make it clear that Supporting Growth will not be delivering the Trig Road upgrade.	
	Section 8: states "The infrastructure requirements for Phase 2 of the school are primarily catered for by the Trig Road upgrade which will be undertaken by Supporting Growth". This should be amended to "the Trig Road upgrade proposed by Supporting Growth and identified for funding in AT's draft RLTP, which is still to be confirmed".	
Modal Share	Section 5.6 modal share: for phase 1 of the school, the ITA assumes 85% of students will be driven to the school grounds while 15% will be dropped off externally and walk. Ryans	Ample parking has been provided on the school grounds for phase 1 and the SIDRA model shows that the school access will work well with minimal delay. It is unlikely that caregivers will use Ryans
	Road may be used for pick-up and drop-off (PUDO) but this	Road when they can easily drop within the school grounds. The

	should be discouraged due to safety issues associated with vehicles manoeuvring and the need to cross Trig Road. It will also impact the operation of Trig Road which functions as an arterial.	15% park and walk has been taken from the Travelwise modal share results where vehicles park more than 400m from the school and walk the final leg.
Active Modes	AT supports the provision for safe crossing points outside the school. Figure 5.2: indicates a raised pedestrian crossing facility across Trig Road. This pedestrian crossing is located close to the vehicle crossing exit for the PUDO area. The pedestrian crossing may need to be relocated further south on Trig Road to ensure there is adequate visibility and stopping distance for vehicles turning left onto Trig Road out of the PUDO. The pedestrian facility should remain as a raised crossing and comply with AT's Transport Design Manual (TDM) standards. The pedestrian crossing facility will need to be designed so that it can accommodate heavy vehicle traffic.	Agreed. The location of the pedestrian crossing on the plan is indicative only. The final location of the crossing will be determined at detailed design stage in consultation with AT. The crossing will be designed to AT's standards.
	The ITA should make clear the pedestrian crossing is the responsibility of MOE to mitigate the effects of this proposal.	The MoE accepts they will be responsible for construction of the pedestrian crossing before Phase 1 of the school opens. Abley understands that the MoE is open to entering into a side agreement on necessary works to be implemented by the MoE to open Phase 1 of the school.
	The proposal for the Trig Road upgrade includes implementing a footpath along the school road frontage. AT's TDM indicates the footpath width alongside schools should be 2.4 metres+. Figure 5.3: indicates a 1.8 metre pedestrian footpath width for the PUDO layout. This access will likely be used by cyclists and pedestrians for phase 2 of the school. For consistency with the footpath along the school frontage, the internal pedestrian footpath should also be 2.4 metres minimum.	This level of detail has not been considered at NOR stage – this matter will be addressed at Outline Plan of Works stage. However, wide pedestrian paths within the school site are supported.
	The footpath on the Western side of Trig Road adjacent to the pedestrian crossing should be upgraded to AT TDM standards, to provide for current and future pedestrian flows.	It is understood that this point refers to the footpath platform at the pedestrian crossing to allow for sufficient pedestrian to wait at the crossing. This is supported and will form part of the pedestrian crossing design.

Public	Section 3.2: notes the Trig Road upgrade will include a bus	Noted and changed.
Transport	frequency of every 15 minutes in peak times. The operational	
·	decisions regarding buses are the responsibility of Auckland	
	Transport and there is currently no funding allocated to	
	upgrade the bus service along Trig Road in the next 10-year	
	period.	
	Section 5: notes the initial school catchment is intended to	Noted. As a conservative approach, the ITA assumes that all
	serve Whenuapai, Redhills and Hobsonville. There are	students will be driven to school in Phase 1 and does not rely on
	currently no direct public transport services from Red Hills	public transport.
	and Hobsonville to the school site. The 114 bus service	
	operates along Trig Road and provides services between	
	Westgate and Whenuapai.	
	A bus parking area should be designated within the school	There will be addressed at OPW stage. There is plenty of room on-
	site. This should be future proofed to enable space for	site to provide for bus parking.
	multiple buses accessing and manoeuvring within the area.	
Parking	Broken yellow lines should be marked along Trig Road to	No Stopping lines are supported if determined appropriate by
	prevent unwarranted parking.	Auckland Transport and have been added to the ITA. This can be
		addressed during Engineering Approval Stage of the localised
		widening design on Trig Road.
	Mobility parking spaces and loading bays should be allocated	There will be addressed at OPW stage. There is plenty of room on-
	within the school parking area.	site to provide for mobility parking spaces and loading bays.
Safaty	A Folym /h speed any ironment should extend parth of the	The MOE supports a reduced speed limit for the operation of
Salety	a soking in speed environment should extend north of the	Phase 1 and accents responsibility for the cost of the supporting
	apply for a 40km/b school speed zone. There is a cost in	signage for the reduced sneed zone
	changing speed limits due to a required consultation process	signage for the reduced speed zone.
	and supporting signage and road calming measures. Where	
	speed reduction forms part of the measures to mitigate the	
	effects of the proposal, the costs should be borne by MOF	
	The speed will need to be reduced along the school frontage	
	prior to the school opening.	
Modelling	Section 6.3: AT suggests that the ITA includes a sensitivity test	A sensitivity test has been undertaking by modelling 100% of
2	where more than 85% of students are picked up and dropped	school traffic using the proposed access to enter and exit the
	off on the school grounds.	school grounds. The school access (entry and exit) continue to

	operate at a very good level of service (A-B). The sensitivity testing
	has been included in the revised ITA.

Alabley

Appendix B SIDRA Results





SIDRA RESULTS - PHASE 1 SCHOOL ACCESS ENTRY ONLY - MORNING AND AFTERNOON

MOVEMENT SUMMARY Site: 101 [Trig Road School TEMP AM Peak Entry only w RT bay (Site Folder: General)] New Site Site Category: (None) Give-Way (Wo-Way)

Vehicle Movement Performance														
Mov	Turn	INPUT VOL	UMES	DEMAND	FLOWS	Deg.	Aver.	Level of	95% BACK	OF QUEUE	Prop.	Effective	Aver. No.	Aver.
ID		[Total	HV]	[Total	HV]	Satn	Delay	Service	[Veh.	Dist]	Que	Stop Rate	Cycles	Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Trig Ro	I South													
2	T1	318	0.0	335	0.0	0.173	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
3	R2	182	0.0	364	0.0	0.443	10.2	LOS B	2.7	18.6	0.69	0.98	0.98	38.1
Approach		500	0.0	699	0.0	0.443	5.3	NA	2.7	18.6	0.36	0.51	0.51	44.7
North: Trig Rd	North													
7	L2	182	0.0	364	0.0	0.368	4.7	LOS A	0.0	0.0	0.00	0.28	0.00	25.0
8	T1	318	0.0	335	0.0	0.368	0.1	LOS A	0.0	0.0	0.00	0.28	0.00	48.2
Approach		500	0.0	699	0.0	0.368	2.5	NA	0.0	0.0	0.00	0.28	0.00	35.7
All Vehicles		1000	0.0	1397	0.0	0.443	3.9	NA	2.7	18.6	0.18	0.40	0.26	39.7

MOVEMENT SUMMARY

abla Site: 101 [Trig Road School TEMP PM Peak Entry only w RT bay (Site Folder: General)]

Vehicle Move	ement Perfo	mance												
Mov ID	Tum	INPUT VOLUM [Total veh/h	MES HV] %	DEMAND [Total veh/h	FLOWS HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACI [Veh. veh	KOFQUEUE Dist]	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Trig Rd	South											6. ×		
2	T1	252	0.0	265	0.0	0.137	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
3	R2	214	0.0	428	0.0	0.516	10.9	LOS B	3.5	24.3	0.71	1.04	1.12	37.7
Approach		466	0.0	693	0.0	0.516	6.7	NA	3.5	24.3	0.44	0.64	0.69	43.3
North: Trig Rd	North													
7	L2	214	0.0	428	0.0	0.366	4.7	LOS A	0.0	0.0	0.00	0.33	0.00	24.9
8	T1	252	0.0	265	0.0	0.366	0.1	LOS A	0.0	0.0	0.00	0.33	0.00	48.0
Approach		466	0.0	693	0.0	0.366	2.9	NA	0.0	0.0	0.00	0.33	0.00	33.4
All Vehicles		932	0.0	1387	0.0	0.516	4.8	NA	3.5	24.3	0.22	0.49	0.35	37.7



SIDRA RESULTS - PHASE 1 SCHOOL ACCESS EXIT ONLY - MORNING AND AFTERNOON



MOVEMENT SUMMARY

▽ Site: 101 [Trig Road School TEMP AM Peak Exit only (Site Folder: General)] New Site Site Category: (None) Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Tum	INPUT VOLUM [Total veh/h	IES HV] %	DEMAND FLO [Total veh/h	WS HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF C [Veh. veh	IUEUE Dist] m	Prop. Que	Effective / Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Trig Rd South														
2	T1	318	0.0	335	0.0	0.172	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach		318	0.0	335	0.0	0.172	0.0	NA	0.0	0.0	0.00	0.00	0.00	49.9
East: School A	ccess													
4	L2	182	0.0	364	0.0	0.303	6.0	LOS A	1.4	9.8	0.46	0.65	0.46	43.1
6	R2	182	0.0	364	0.0	0.543	11.1	LOS B	3.1	21.8	0.67	1.01	1.07	38.8
Approach		364	0.0	728	0.0	0.543	8.6	LOS A	3.1	21.8	0.56	0.83	0.76	40.8
North: Trig Rd	North													
8	T1	318	0.0	335	0.0	0.172	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach		318	0.0	335	0.0	0.172	0.0	NA	0.0	0.0	0.00	0.00	0.00	49.9
All Vehicles		1000	0.0	1397	0.0	0.543	4.5	NA	3.1	21.8	0.29	0.43	0.40	45.9

MOVEMENT SUMMARY

▽ Site: 101 [Trig Road School TEMP PM Peak Exit only (Site Folder: General)]

Vehicle Mo	vement Pe	rformance												
Mov	Tum	INPUT VO	DLUMES	DEMAND	FLOWS	Deg.	Aver.	Level of	95% BACK	OF QUEUE	Prop.	Effective	Aver. No.	Aver.
		[Total	HV]	[Total	HV]	Satn	Delay	Service	[Veh.	Dist]	Que	Stop Rate	Cycles	Speed
		veh/h	%	veh/h	%	v/c	Sec		veh	m				km/h
South: Trig F	d South													
2	T1	252	0.0	265	0.0	0.136	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach		252	0.0	265	0.0	0.136	0.0	NA	0.0	0.0	0.00	0.00	0.00	49.9
East: School	Access													
4	L2	214	0.0	428	0.0	0.331	5.7	LOS A	1.6	11.4	0.42	0.61	0.42	43.2
6	R2	214	0.0	428	0.0	0.546	9.7	LOS A	3.5	24.2	0.62	0.97	0.96	39.7
Approach		428	0.0	856	0.0	0.546	7.7	LOS A	3.5	24.2	0.52	0.79	0.69	41.4
North: Trig R	d North													
8	T1	252	0.0	265	0.0	0.136	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach		252	0.0	265	0.0	0.136	0.0	NA	0.0	0.0	0.00	0.00	0.00	49.9
All Vehicles		932	0.0	1387	0.0	0.546	4.8	NA	3.5	24.2	0.32	0.49	0.42	45.3



SIDRA RESULTS - PHASE 1 SCHOOL ACCESS ENTRY MORNING ONLY - 100% SCHOOL TRAFFIC USING SCHOOL ACCESS (SENSITIVITY TEST)

MOVEMENT SUMMARY

abla Site: 101 [Trig Road School TEMP AM Peak Entry only w RT bay 100% School traffic (Site Folder: General)]

New Site Site Category: (None) Give-Way (Two-Way)

Vehicle Mo	vement Pe	rformance												
Mov	Turn	INPUT V	OLUMES	DEMAND	FLOWS	Deg.	Aver.	Level of	95% BACK	OF QUEUE	Prop.	Effective	Aver. No.	Aver.
ID		[Total veh/h	HV] %	[Total veh/h	HV] %	Satn v/c	Delay sec	Service	[Veh. veh	Dist] m	Que	Stop Rate	Cycles	Speed km/h
South: Trig F	Rd South													
2	T1	318	0.0	335	0.0	0.173	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
3	R2	214	0.0	428	0.0	0.576	12.5	LOS B	4.0	27.8	0.77	1.11	1.32	36.6
Approach		532	0.0	763	0.0	0.576	7.0	NA	4.0	27.8	0.43	0.62	0.74	43.4
North: Trig R	d North													
7	L2	214	0.0	428	0.0	0.402	4.7	LOS A	0.0	0.0	0.00	0.30	0.00	25.0
8	T1	318	0.0	335	0.0	0.402	0.2	LOS A	0.0	0.0	0.00	0.30	0.00	48.1
Approach		532	0.0	763	0.0	0.402	2.7	NA	0.0	0.0	0.00	0.30	0.00	34.7
All Vehicles		1064	0.0	1525	0.0	0.576	4.9	NA	4.0	27.8	0.22	0.46	0.37	38.6

SIDRA RESULTS - PHASE 1 SCHOOL ACCESS EXIT MORNING ONLY - 100% SCHOOL TRAFFIC USING SCHOOL ACCESS (SENSITIVITY TEST)

MOVEMENT SUMMARY

abla Site: 101 [Trig Road School TEMP AM Peak Exit only 100% school traffic (Site Folder: General)]

Vehicle Mov	vement Per	formance												
Mov ID	Turn	INPUT VOL [Total	_UMES HV]	DEMAND [Total	FLOWS HV]	Deg. Satn	Aver. Delay	Level of Service	95% BACK [Veh.	OF QUEUE Dist]	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
South: Tria P	d South	veh/h	%	veh/h	%	V/C	sec		veh	m				km/h
oouun. mg re	u oouin													
2	T1	318	0.0	335	0.0	0.172	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach		318	0.0	335	0.0	0.172	0.0	NA	0.0	0.0	0.00	0.00	0.00	49.9
East: School	Access													
4	L2	214	0.0	428	0.0	0.356	6.2	LOS A	1.8	12.9	0.48	0.67	0.50	43.0
6	R2	214	0.0	428	0.0	0.638	12.2	LOS B	4.3	30.1	0.72	1.10	1.31	38.0
Approach		428	0.0	856	0.0	0.638	9.2	LOS A	4.3	30.1	0.60	0.89	0.90	40.3
North: Trig Ro	d North													
8	T1	318	0.0	335	0.0	0.172	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach		318	0.0	335	0.0	0.172	0.0	NA	0.0	0.0	0.00	0.00	0.00	49.9
All Vehicles		1064	0.0	1525	0.0	0.638	5.2	NA	4.3	30.1	0.33	0.50	0.51	45.2





SIDRA RESULTS - PHASE 2 SCHOOL ACCESS ENTRY ONLY - MORNING AND AFTERNOON

MOVEMENT SUMMARY

abla Site: 101 [Trig Road School PERM AM Peak Entry only w RT bay (Site Folder: General)] New Site Site Category: (None) Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Tum	INPUT V [Total veh/h	OLUMES HV] %	DEMAND [Total veh/h	FLOWS HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACH [Veh. veh	OF QUEUE Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Trig Rd South														
2	T1	675	0.0	711	0.0	0.368	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	49.8
3	R2	165	0.0	330	0.0	0.395	9.7	LOS A	2.2	15.5	0.67	0.95	0.89	38.5
Approach		840	0.0	1041	0.0	0.395	3.2	NA	2.2	15.5	0.21	0.30	0.28	47.0
North: Trig Rd North														
7	L2	165	0.0	330	0.0	0.361	4.7	LOS A	0.0	0.0	0.00	0.26	0.00	25.1
8	T1	340	0.0	358	0.0	0.361	0.1	LOS A	0.0	0.0	0.00	0.26	0.00	48.4
Approach		505	0.0	688	0.0	0.361	2.3	NA	0.0	0.0	0.00	0.26	0.00	36.8
All Vehicles		1345	0.0	1728	0.0	0.395	2.8	NA	2.2	15.5	0.13	0.28	0.17	42.5

MOVEMENT SUMMARY

abla Site: 101 [Trig Road School PERM PM Peak Entry only w RT bay (Site Folder: General)]

Vehicle Movement Performance														
Mov ID	Tum	INPUT VO [Total veh/h	DLUMES HV] %	DEMAND [Total veh/h	FLOWS HV] %	D e g. Satn v/c	Aver. Delay sec	Level of Service	95% BACH [Veh. veh	COFQUEUE Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Trig Ro	I South													
2	T1	540	0.0	568	0.0	0.293	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
3	R2	139	0.0	278	0.0	0.432	12.1	LOS B	2.3	15.9	0.76	1.01	1.07	36.8
Approach		679	0.0	846	0.0	0.432	4.0	NA	2.3	15.9	0.25	0.33	0.35	46.4
North: Trig Rd	North													
7	L2	139	0.0	278	0.0	0.441	4.7	LOS A	0.0	0.0	0.00	0.18	0.00	25.2
8	T1	540	0.0	568	0.0	0.441	0.2	LOS A	0.0	0.0	0.00	0.18	0.00	48.7
Approach		679	0.0	846	0.0	0.441	1.7	NA	0.0	0.0	0.00	0.18	0.00	40.7
All Vehicles		1358	0.0	1693	0.0	0.441	2.9	NA	2.3	15.9	0.12	0.25	0.18	43.3




SIDRA RESULTS - PHASE 2 SCHOOL ACCESS EXIT ONLY - MORNING AND AFTERNOON

MOVEMENT SUMMARY \bigtriangledown Site: 101 [Trig Road School PERM AM Peak Exit only (Site Folder: General)] New Site Site Category: (None) Give-Way (Two-Way)

Vehicle Move	Vehicle Movement Performance													
Mov ID	Tum	INPUT VOLUI [Total veb/b	MES HV]	DEMAND FLC [Total veb/b	OWS HV] ≪	Deg. Satn	Aver. Delay	Level of Service	95% BACK OF [Veh.	QUEUE Dist]	Prop. Que	Effective , Stop Rate	Aver. No. Cycles	Aver. Speed
South: Trig Rd	venini va venini va venini va venini venini venini va vici sec veni ni venini va vici sec veni ni venini venini													
2	T1	675	0.0	711	0.0	0.364	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	49.8
Approach		675	0.0	711	0.0	0.364	0.1	NA	0.0	0.0	0.00	0.00	0.00	49.8
East: School A	ccess													
4	L2	165	0.0	330	0.0	0.281	6.1	LOS A	1.3	8.9	0.46	0.65	0.46	43.0
6	R2	165	0.0	330	0.0	0.887	32.4	LOS D	7.5	52.7	0.96	1.65	3.15	28.2
Approach		330	0.0	660	0.0	0.887	19.3	LOS C	7.5	52.7	0.71	1.15	1.81	34.1
North: Trig Rd North														
8	T1	340	0.0	358	0.0	0.184	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach		340	0.0	358	0.0	0.184	0.1	NA	0.0	0.0	0.00	0.00	0.00	49.9
All Vehicles		1345	0.0	1728	0.0	0.887	7.4	NA	7.5	52.7	0.27	0.44	0.69	44.3

MOVEMENT SUMMARY

♡ Site: 101 [Trig Road School PERM PM Peak Exit only (Site Folder: General)]

New Site Site Category: (None) Give-Way (Two-Way)

Vehicle Move	Vehicle Movement Performance													
Mov ID	Tum	INPUT VOLUM [Total veh/h	ES HV] %	DEMAND FLO [Total veh/h	WS HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF Q [Veh. veh	UEUE Dist] m	Prop. Que S	Effective Av Stop Rate	ver. No. Cycles S	Aver. Speed km/h
South: Trig Rd	South													
2	T1	405	0.0	426	0.0	0.219	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach		405	0.0	426	0.0	0.219	0.1	NA	0.0	0.0	0.00	0.00	0.00	49.9
East: School Ad	ccess													
4	L2	165	0.0	330	0.0	0.303	6.6	LOS A	1.4	9.8	0.51	0.71	0.53	42.9
6	R2	165	0.0	330	0.0	0.615	14.2	LOS B	3.5	24.5	0.78	1.11	1.38	36.7
Approach		330	0.0	660	0.0	0.615	10.4	LOS B	3.5	24.5	0.65	0.91	0.96	39.6
North: Trig Rd North														
8	T1	405	0.0	426	0.0	0.219	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach		405	0.0	426	0.0	0.219	0.1	NA	0.0	0.0	0.00	0.00	0.00	49.9
All Vehicles		1140	0.0	1513	0.0	0.615	4.6	NA	3.5	24.5	0.28	0.40	0.42	46.1







Appendix F

Ecological Assessment



Engineers & Consultants

Ecological Impact Assessment

13-15 Trig Road

Final Revision 2

Prepared for the Ministry for Education by Morphum Environmental Ltd May 2021

The union of engineering design and nature.



Engineers & Consultants

Document Control

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Project Name:	13-15 Trig Rd EclA
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Reviewed by:

Reviewer: Jason Smith

Signature:

Released by:

Reviewer: Andrew Rossaak

Signature: Aluar

Executive Summary

Morphum Environmental Limited was engaged by the Ministry of Education to prepare an Ecological Impact Assessment to support a Notice of Requirement for a school at 13-15 Trig Road, Whenuapai.

The Whenuapai Structure Plan anticipates the expansion of the Whenuapai urban area. Accordingly, The Ministry of Education has forecast the need for a new school to meet expected population growth. The site will initially be developed as an overflow school for 600 students to serve a shortfall in the school network capacity in Whenuapai North, Redhills and Hobsonville; and be situated toward the rear, eastern boundary of the site. The Phase 1 overflow school is planned to be operational from 2022. Phase 2 (anticipated for 2027) will establish a permanent school and early childhood education for 1,000 students, to serve the long term needs of the local adjacent school catchment as the adjacent area is live zoned and developed for urban purposes; and when the site is connected public reticulated wastewater network.

As with other areas in the Tamaki Ecological District, farming activities have cleared much of the site's original vegetation. The dominant land cover types present are associated with the past and current agricultural use of the site. Where present, vegetation is reflective of the agricultural use of the site, and the largest proportion of the site is pasture grassland. An area of mixed exotic and native woody vegetation in the southwest corner of the subject site remains.

Although the site has been heavily modified, it retains some ecological value. Ecological features of note include a small wetland on the southern site boundary and an area of mixed mature exotic and regenerating native vegetation in the southwestern corner of the subject site. Vegetation, where present, contributes to ecosystem services such as habitat provision for native fauna adapted to moving across agricultural landscapes. The paucity of quality habitat values and areas is reflected in the native species of birds and lizards considered likely to utilise the site. Avifauna species present are consistent with those that can comfortably travel distances over open fields between forested patches, or make use of fields, farmland, and shelter belt vegetation as habitat. Suitable lizard habitat was limited and, if present, lizard populations are likely limited to copper or plague skinks. The subject site contains no old growth trees with cavities or loose bark that may be utilised as roosts and is not proximate to any waterways that could be utilised as movement corridors by native long-tailed bats. No surface water was present within the subject site during the site visit, and given the absence of freshwater fish habitat, the site is not expected to support a native freshwater fish population. Whilst onsite fauna observations were limited to common species, the use of this area by threatened species such as long-tailed bats, on a temporary, foraging basis, whilst considered unlikely, cannot categorically be ruled out.

It is acknowledged that the construction and operation of a school has the potential to have adverse ecological effects. The redevelopment of the subject site would likely require the demolition and construction activities involving land disturbance, as well as, potentially minor vegetation clearance, with associated noise, vibrations, and traffic movements.

Notwithstanding the actual values identified, vegetation removal may affect the fauna that potentially utilise this area as habitat. The Wildlife Act (1953) already requires that wildlife protection and salvage actions are implemented, which would address potential effects to native fauna.

For all land disturbing activities, there is the potential for sediment to be discharged offsite the receiving environment. This potential effect would be addressed through the existing requirements (standard E11.6.2(2)) that industry best practice erosion and sediment controls are implemented.

The redevelopment of the site for educational purposes will increase impervious surface coverage. Unmitigated, increases in impervious surfaces have the potential to alter the quantity and quality of stormwater discharges from the site. The potential effects of stormwater discharge are addressed by the existing regional provisions of the Auckland Unitary Plan: Operative in Part and supporting bestpractice technical guidance from Auckland Council, that relate to stormwater management (Auckland Council Guideline Document 2015/004 Water Sensitive Design for Stormwater (GD04). These documents require an integrated approach to water quality management that would alleviate the identified potential effects ensuring that stormwater management is sensitive to ecological features.

The Phase 1 overflow school will require an on-site wastewater treatment system. Wastewater discharges could potentially alter the nutrient flux and hydrology in the receiving environment. Potentially leading to algae or bacterial blooms which could affect water quality parameters. A range of treatment systems are available that treat wastewater effluent to a high quality and reduce potential adverse effects on the environment. The existing regional provisions of the Auckland Unitary Plan: Operative in Part and supporting best-practice technical guidance from Auckland Council, that relate to wastewater management (Auckland Council Guideline Document 2018/006: On-site Wastewater Management in the Auckland Region (GD06)) describes designs to manage the potential effects from wastewater discharges from the site.

The redevelopment of the site provides an opportunity to improve the site's ecological values; through the reduction of agricultural nutrients and contaminants to the receiving environment, and the opportunity increase native vegetation and enhance the onsite wetland as part of the associated landscaping.

The magnitude of the effects of the proposed activities has been conservatively assessed as either Low or Negligible using the Environmental Institute of Australia and New Zealand's Ecological Impact Assessment Guidelines (2018). Considering the ecological values potentially present at the site, and the magnitude of impacts, the overall level of effects ranges from Low to Very Low.

As such it is not considered that any ecology-specific conditions are required on the Designation to address any of the identified potential ecological effects.

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1. Introduction

1.1 Purpose & Scope

Morphum Environmental Limited (Morphum) were engaged by the Ministry of Education (The Ministry) to prepare an Ecological Impact Assessment (EcIA) to support a Notice of Requirement (NoR) for the construction and operation of a school at 13-15 Trig Rd, Whenuapai (herein the subject site).

These new facilities will be used by The Ministry to accommodate the predicted increase in student population associated with the development and population growth of Whenuapai. The site will initially be developed for 600 students, to serve a shortfall in the school network capacity in Whenuapai North, Redhills and Hobsonville; and be situated toward the rear, eastern boundary of the site (referred to Phase 1). Phase 1 is planned to be operational from 2022. Phase 2 (anticipated for 2027) will establish a permanent school and early childhood education for 1,000 students, to serve the long term needs of the local adjacent school catchment as the adjacent area is live zoned and developed for urban purposes; and when the site is connected public reticulated wastewater network.

Morphum understands that an EcIA is required to identify the ecological values of the site, describe the potential impacts that the construction and operation of a school on the site may have on those values and recommend mitigation measures, including possible designation conditions.

Detailed design has yet to be completed; as such this assessment assumes that: all woody vegetation within the subject site will be cleared, large scale earthworks, as well as, on-site wastewater and on site-stormwater management will be required for Phase 1, with the site connected to the public reticulated network ahead of Phase 2.

1.2 Site Overview

The subject site is currently two addresses. 13 Trig Rd, a residential address with a single residential dwelling and associated gardens and 15 Trig Rd pasture grassland for low-density dry-stock cattle. The subject site was not stocked at the time of the site visit, although there were cattle in two of the adjacent properties and evidence of stock pugging within the subject site.

The site's original native vegetation has been heavily modified or removed through past and current farming activities. Current land use is shown in the site map in Figure 1. The remaining ecological features of note include a tree privet (*Ligustrum lucidum*) shelter belt along the north eastern boundary of the site and an area of exotic trees and shrubs interspersed with regenerating natives around the residential dwelling. The western property boundary, and the access driveway to 17 Trig Rd, is lined with a row of juvenile oaks (*Quercus sp.*) and magnolia (*Magnolia sp.*).

A small wetland area of approximately 75 m² was identified on the eastern property boundary, the wetland extends to the neighbouring property (approximately 600 m²) as shown on Figure 1 and Appendix 1. The wetland area had no surface water at the time of the site survey. The wetland contained no obligate wetland plant species and had a low portion of facultative-wetland vegetation, being dominated by facultative and uphill vegetation species.

No watercourses which met the definitions of a permanent or intermittent stream in the Auckland Unitary Plan: Operative in Part (AUP:OP) were identified within the subject site. A stormwater outlet on the eastern boundary of the subject site (SAP ID 2000738409) feeds an intermittent stream in the adjacent parcel, a tributary of Trig Stream (Morphum Environmental, 2016).

There are no Significant Ecological Areas (SEA's) or areas of mature native woody vegetation within the site. The nearest SEA is Manutewhau Walk (SEA_T_2040, SEA_T_4866) approximately 1.2 km to the south of the subject site.



Figure 1: Subject site land cover types

1.3 Whenuapai Structure Plan and Plan Change 5

The Whenuapai Structure Plan (Auckland Council, 2016) and outlines how Auckland Council envision the Whenuapai area will develop over the next 10-20 years. The Whenuapai Structure Plan outlines a general arrangement of various land uses (e.g. residential, commercial, and open spaces) and infrastructure (e.g. transport, stormwater, and wastewater), and how the area connects to adjacent urban areas and wider infrastructure networks. The subject site is anticipated for a school in the Whenuapai Structure Plan.

In addition to the Whenuapai Structure Plan, AUP:OP Proposed Plan Change 5: Whenuapai, shows an indicative collector road along the southern boundary of the subject site (between 15 and 9 Trig Rd). The effects of the construction and operation of the indicative collector road are outside of the scope of this assessment; however, it is noted that the indicative alignment proximate to the site wetland. Proposed Plan Change 5 also includes a stormwater management plan.

2. Current Ecological Values

A site walkover was undertaken on the 28th of January 2021. The site visit was undertaken by two suitably qualified and experienced Environmental Scientists. During this survey all vegetation types within the subject site were surveyed and all fauna observations were recorded. Potential watercourses within the subject site were classified and delineated.

2.1 Ecological Context

The subject site is within the Tamaki Ecological District. The Tamaki Ecological District is highly modified, with only 7% of indigenous cover remains in the district (Lindsay *et al.*, 2009). While this district historically supported extensive lowland kauri, pūriri, and coastal pohutakawa forests (Singers *et al.* 2017), these have largely been cleared to make way for urban development and agricultural land use. The largest proportion of land now being urban areas fringed by agricultural areas and limited pockets on remaining native vegetation.

The subject site is recorded as having an Ecosystem Potential Extent of WF7, Pūriri forest (Singers *et al.* 2017). WF7, Pūriri forest, has a Regional IUCN threat status of Critically Endangered (Singers *et al.*, 2017). Pūriri forest is a variable broadleaf forest type that occurs throughout the Auckland region dominated by pūriri (*Vitex lucens*) with a mixture of other broadleaf species including tītoki (*Alectryon excelsus*), kōwhai (*Sophora spp.*), karaka (*Corynocarpus laevigatus*), and karamu (*Coprosma robusta*). Pūriri forests have dense understories and historically would have provided habitat for a diverse range of native invertebrates, amphibians, reptiles, birds, and bats. The current vegetation does not reflect the WF7 habitat type.

Landcare Research Land Cover Database (LCDB) version 5 (Landcare Research 2020) describes the land cover of the subject site as "High Producing Exotic Grassland". High producing exotic grasslands are described by the Ministry for the Environment (2010) as exotic grasslands with highly productive vegetation likely to be predominantly used for agricultural grazing that cover 22% of New Zealand's land area. The LCDB description provides a generally accurate description of the subject site.

The immediate surrounding area is primarily rural agricultural land, although the area to the south of Hobsonville Rd (approximately 700 m to the south) has been largely developed for residential use with several additional developments under construction. There is no existing stormwater or wastewater infrastructure within the subject site.

2.1.1 Catchment and Receiving Environment

The Whenuapai stormwater catchment is 1,931 ha of primarily agricultural land (59%). The LCDB v5.0 describes the land cover as predominantly High Producing Exotic Grassland, intermixed with areas of Short-Rotation Cropland, Built-up Area, and Urban Parkland / Open Space, which is considered an accurate description. Built up areas are considered as commercial, industrial, or residential sheds, including associated infrastructure and amenities. The proportion of impervious surface cover in the catchment is 15%.

The subject site catchment is drained by Trig Stream, a tributary of the Waiorohia Stream, which reaches the coast at the Terrestrial SEA (SEA_T_4733) in the Waitemata Harbour.

2.2 Existing Vegetation

As with other areas in the Tamaki Ecological District, farming activities have cleared much of the site's original vegetation. The current land cover of the site is summarised in Table 1 and indicative site photos are provided in Figure 2 below.

The dominant land cover and vegetation type is pasture grassland. Pasture grasses are dominated by ryegrass (*Lolium sp.*) and kikuyu (*Pennisetum clandestinum*); interspersed with exotic herbaceous species such as birdsfoot trefoil (*Lotus corniculatus*), buttercups (*Ranunculus repens*), and broadleaf plantain (*Plantago major*). Small, isolated pockets of Juncus rushes (*Juncus spp.*) and water pepper (*Persicaria hydropiper*) are also present in the lowest areas of the site, the northeast corner and near the identified wetland.

The residential area features a range of mature exotic trees, regenerating natives and ornamental exotic shrubs. The exotic trees present in this area include American sweetgum (*Liquidamber styraciflua*), Japanese cedar (*Cryptomeria japonica*), Chinese fan palm (*Trachycarpus fortunei*), black wattle (*Acacia mearnsii*), and radiata pine (*Pinus radiata*) among others. Native species, including mapou (*Myrsine australis*), lemonwood (*Pittosporum eugenioides*), manuka (*Leptospermum scoparium*), and taupata (*Coprosma repens*), have been planted between the mature trees. Bracken fern (*Pteridium esculentum*) has filled in gaps in the understory with little overhead shading. Groundcover consists primarily of agapanthus (*Agapanthus praecox*) which lines the driveway and Trig Rd berm. Small areas of blackberry (*Rubus sp.*) and kikuyu grass (*Pennisetum clandestinum*) are also present. Exotic weeds have invaded areas of this land cover type, with several large woolly nightshade (*Solanum mauritianum*) and a dense matt of field bindweed (*Convulvulus arvensis*) which has begun to smother the black wattle canopy.

Outside of the subject site along the western property boundary, the driveway to 17 Trig Rd, is lined with a row of juvenile oaks (*Quercus sp.*) and magnolia (*Magnolia sp.*). Outside of the subject site along the northern property boundary stands a row of tree privet (*Ligustrum lucidum*).

The wetland area had no surface water at the time of the survey (Appendix 2). Wetland vegetation comprised a mixture of ryegrass, sharp-pointed rush (*junctus acutus*), buttercup, birdsfoot, Yorkshire fog, and a small proportion of clover (*Trifolium spp.*). The wetland showed evidence of substantial historic cattle pugging, and as the wetland was not separately fenced from the adjacent pasture grassland and is likely to face the same grazing pressure as other stocked areas of the subject site.

Table 1: Subject area land cover classes							
Land Cover Class	Area (m²)	Percentage of Site Area (%)	Description				
Pasture Grassland	37,707	93	This land cover class includes all the vegetation currently used for pastoral farming; it is comprised largely of pasture grass species used to support the grazing of stock.				
Residential Area	2,602	7	This land cover class includes the residential dwelling, associated impervious surfaces, maintained lawn, and ornamental mixed exotic & native vegetation.				
Wetland	76	<1	Wetland area characterised by pasture grasses interspersed with native and exotic herbaceous plants. There was no surface water during the site visit.				
Total	40,385	100					

No site vegetation is considered to be of species-merit; and is of limited ecological value when assessed under the EIANZ criteria attributes of Representativeness, Rarity/distinctiveness, Diversity and pattern, Ecological context (Table 2). The natural ecological values of the site are supressed by the presence of cattle. Overall, the subject area is considered to have low ecological value.

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Figure 2: Indicative site photographs: Clockwise from top left; View of the pasture grassland from the southeast corner of the site. Mixed exotic canopy species and native undergrowth adjacent to Trig Rd. Driveway of 15 Trig Rd. Wetland area with residential house in the background.

Table 2: Assessment of current terrestrial vegetation values						
Assessment Matter	Ecological Value (EIANZ, 2018)	Reasoning				
Representativeness	Low	The current vegetation community is not representative of the historical Pūriri forest habitat type. Exotic species dominate, and the current vegetation is not consistent with the natural range of tiers and guilds.				
Rarity/distinctiveness	Low	No mature native vegetation was recorded within the subject area. No nationally or locally threatened or uncommon plant species were identified during the site survey.				
Diversity and pattern	Low	The subject area is dominated by exotic pasture grasses and herbaceous weeds. The area of greatest vegetation diversity is dominated by exotic species with a small proportion of regenerating natives. The current site species diversity is far below the expected level of natural diversity for the habitat that would have been present prior to human modification.				
Ecological context	Low	The site has experienced a high level of modification and provides limited ecological function. The site is buffered by a large area of similarly modified agricultural land. The pasture grasslands present decrease ecological linkage and pathways, and have limited contributions to ecosystem services such as food provision, pollination & seed sources, and native genetic diversity.				

2.3 Avifauna

The site supports only a small proportion of native or exotic woody vegetation (7%), with the majority of the site being used for agricultural activities. This is reflected in the species of birds recorded from the site, which are typical assemblage of species that can comfortably travel distances over open fields between forested patches, or make use of fields, farmland and shelter belt vegetation in rural settings. The birdlife that was observed from the subject area was largely associated with the existing vegetation at the southern and northern extents of the subject area (mixed exotic and native trees). No threatened or risk species were recorded (Table 3).

One native species, not observed, but which may be transiently present within the subject site is the paradise shelduck (*Tadorna variegata*). Paradise shelduck are not classified as Threatened or At Risk.

The citizen science platforms eBird and iNaturalist were searched for more detailed records. No observations were recorded on the subject site. The nearest avifauna observations are at Spinnaker Foreshore Reserve, Te Atatu Peninsula, and consist of common sea birds and exotic passerines.

Table 3: Bird species observed						
Common name	Scientific name	Threat Status (Robertson et al. 2017)				
Skylark	Alauda arvensis	Introduced and naturalised				
Mallard	Anas platyrhynchos	Introduced and naturalised				
Canada Goose	Branta canadensis	Introduced and naturalised				
Australasian Harrier	Circus approximans	Not Threatened				
Chaffinch	Fringilla coelebs	Introduced and naturalised				
Australian magpie	Gymnorhina tibicen	Introduced and naturalised				
Welcome Swallow	Hirundo neoxena	Not Threatened				
Common pheasant	Phasianus colchicus	Introduced and naturalised				
Pukeko	Porphyrio melanotus	Not Threatened				
Song thrush	Turdus philomelos	Introduced and naturalised				

2.4 Herpetofauna

Lizards were not systematically surveyed across the site. Given the lack of high-quality lizard habitat, it was considered a low likelihood that there are native herpetofauna present and subsequently that there was a low likelihood that any systematic survey would detect any native species. Casual observations and occasional searching of suitable habitat did not detect skinks. Geckos were not specifically searched for but are unlikely to be present given the history of vegetation modification on the site.

Suitable lizard habitat was limited to pockets of dense groundcover and woody debris in the southwest corner of the subject site. Agapanthus by itself does not represent good quality lizard habitat as the stems are spaced out and do not provide sufficient shelter or refugia. However, leaf litter and woody debris from the overhead exotic vegetation has filled in groundcover to produce low-moderate quality lizard habitat in some pockets (Figure 3).

It is considered possible that terrestrial lizards may be present on site, with copper skink (*Cyclodina arnea*) being the most likely. Copper skinks are known to persist in other parts of Auckland in similar habitat. Copper skink are not considered threatened or at risk by the Department of Conservation (Hitchmough *et al.* 2015).

Geckos are unlikely to have persisted due to historic vegetation clearance, farming, and land management.

The site's history of habitat modification and distance to any areas of substantial native vegetation make it extremely unlikely that native lizards would recolonise the site naturally.

The exotic plague skink (*Lampropholis delicata*) may be present, given its wide distribution in the Auckland Region.



Figure 3: Potential copper skink habitat. Woody debris piles within the agapanthus groundcover provide low-moderate quality skink habitat.

2.5 Bats

A detailed bat survey was not undertaken. Given the paucity of potential bat habitat across the site, it was considered that there was a low likelihood that any systematic survey would detect any native species.

Populations of the native long-tailed bat (*Chalinolobus tuberculatus*) are known in the west Auckland area, most notably the Waitakere Ranges. A small number of observations have been recorded in the Henderson Valley area, 10 km to the south. Native bats can forage over 50 km in a single night, putting the subject site within the theoretical home range of any West Auckland population.

Long-tailed bats prefer to roost in larger, older, canopy trees with cavities, epiphytes, and loose bark. No such habitat is present on the subject site. Old growth trees with cavities or loose bark that may be utilised as roosts are absent from the subject site. Any long-tailed bats present are therefore likely utilising the areas as temporary foraging. Long-tailed bats feed on the wing, utilising waterways and forest-edge as foraging grounds and movement corridors where invertebrate life is likely to be more abundant. As such the site is not considered high-quality foraging habitat.

Short-tailed bats prefer deep-forest habitat and are associated with old growth indigenous forest. The only known population of short-tailed bats known to the Auckland Region is found on Little Barrier Island. As such their presence within the subject site is considered extremely unlikely.

2.6 Freshwater Values

Freshwater habitat within the subject site is limited to the small wetland identified (Appendix 2). The vegetation is comprised of typical unkept pasture species ranges from facultative – wetland (i.e. Sharp-pointed rush, *juncus acutus* & Buttercup, *Ranunculus repens*) to facultative – upland species (i.e. Ryegrass, *lolium perenne* & clover, *Trifolium spp.*). No obligate wetland flora or fauna were observed. The wetland is not fenced from stock and there is evidence of cattle pugging and grazing throughout. While the ecological values of the site wetland are limited, wetlands still serve a hydrological function, which supports indigenous biodiversity values.



Figure 4: The site wetland. Vegetation present includes wetland species (i.e. Sharp-pointed rush, *juncus acutus* & Buttercup, *Ranunculus repens*) as well as upland species (i.e. Ryegrass, *lolium perenne* & clover, *Trifolium spp.*). Note the vegetation changes at the property boundary with 9 Trig Rd.

While the current ecological values of the site wetland are low, restoration activities (such as riparian planting and stock exclusion fencing) could improve the wetlands stormwater filtration, as well as, organic matter input and water temperature regulation function.

No streams were recorded during the site survey and the wetland had no surface water. However, as the site visit was undertaken at the height of a dry summer, there is a possibility that there may be surface water intermittently present during the wetter months of the year. If surface water is present for an extended period, the wetland may provide an area of temporary, low-quality fish habitat.

2.7 Pest Animals

No pest animals were noted on site. It is considered likely that, at a minimum, rabbits (Oryctolagus cuniculus), rats (*Rattus rattus*, *Rattus norvegicus*, *Rattus exulans*) and mice (*Mus musculus*) are present.

2.8 Summary of Ecological Values

The current ecological values of the site have been described based from on-site observations in conjunction with a review of the available literature and databases. A summary of this information is presented in Table 4 based on the EIANZ 2018 Ecological Impact Assessment guidelines set out in Appendix 3. Onsite fauna observations were limited to common species. Due to the minimal native habitat values provided by the site, the use of this area by threatened species, such as long-tailed bats and native freshwater fish, is considered unlikely.

Table 4: Summary of subject site ecological values					
Impact	Ecological Value (EIANZ, 2018)	Reasoning			
		Area rates Low for all assessment matters (Representativeness, Rarity/distinctiveness, Diversity and pattern, Ecological context).			
Vegetation	Low	Vegetation is comprised primarily of exotic pasture grass and exotic herbaceous weeds. The area of woody vegetation consists largely of mature exotic tree species interspersed with regenerating natives.			
Avifauna	Low	Species presence limited to nationally and locally common indigenous species. Limited ecological value other than as for habitat for tolerant native species, or those species moving across the landscape.			
Herpetofauna	Moderate	Actual species presence is likely to be limited to not threatened or pest species. Although without detailed surveys the presence of other species cannot be categorically ruled out.			
Bats	Moderate	Actual species presence is unlikely, although potential intermittent use by long-tailed bats cannot be categorically ruled out; notwithstanding actual habitat and foraging values are low.			
Freshwater Values	Moderate	Freshwater habitat within the subject site consists of a low-quality pugged wetland. The current values of the wetland have been assessed as low (representativeness, diversity and pattern, ecological context). However, due to the scarcity of natural wetland habitats, and the potential for wetland restoration, the overall freshwater values have been assessed as Moderate.			
Native Freshwater Fish	Negligible	Freshwater fish habitat is unlikely to be present within the subject site on a more than transient basis during the wet, winter months of the year, and as such is not considered likely to support native fish populations.			

Overall, the subject area is considered to have Moderate - Low current ecological values.

3. Proposed Activities and Potential Effects

This EcIA has been prepared to support the lodgement of a NoR for the construction and operation of a school at 13-15 Trig Road, Whenuapai.

For Phase 1, the site is proposed to be initially developed for 600 students, and situated toward the rear, eastern boundary of the site. Phase 1 is planned to be operational from 2022; with Phase 2 anticipated for 2027.

At the time of writing no detailed design has yet been undertaken. A feasible design for Phase 1 is provided by Jasmax (2021).

The types of activities considered to likely be required in the construction and operation of a school include:

- Construction of school buildings and facilities. i.e. classrooms, hall, library, gymnasium, and sports fields.
- Construction of infrastructure services. i.e. water, wastewater, stormwater, and telecommunications.
- Earthworks and vegetation clearance to facilitate site development.
- Vehicular, pedestrian and cycle traffic.

The hours when classes will be held on site are expected to be similar to most other schools, core teaching hours being weekdays between approximately 8:30am - 3:30pm. Some activities, such as community education (night classes), school sporting or cultural events may occur outside of core school hours.

3.1 Construction Activities

3.1.1 Land Disturbance

The current topography (rolling hills, minimal flat area) of the site means that substantial earthworks are anticipated to prepare the building platforms, outdoor play areas, and parking areas. Earthworks and construction activities would involve the use of machinery and traffic that will generate dust, noise, and vibrations for the duration of construction. Dust, noise, and vibrations may reduce the habitat quality for any species present and lead to their avoidance of the area.

For all land disturbance activities, there is a risk of uncontrolled sediment discharge to the receiving environment. Sediment is a contaminant as defined in the Resource Management Act (RMA) and has the potential to cause a range of adverse effects in the receiving environment including smothering of benthic habitat, direct mortality of native freshwater fish through asphyxiation from clogged gills, and changes to water quality, including physio-chemical indicators pH and clarity.

Sediment related effects would not only occur within the subject site but could accumulate in the wider receiving environment, including Trig Stream.

3.1.2 Vegetation Clearance

It is anticipated that, due to its position adjacent to the road, the entirety of the mixed exotic native vegetation will be cleared to facilitate the construction of the school and make way for site access and parking. A significant proportion of the pasture grassland is also expected to be removed. Vegetation clearance is considered to generate low-moderate adverse environmental effects on vegetation and fauna values given the species present and ecological value as assessed in Section 2. Exotic species can provide habitat functions, as such vegetation removal may affect the fauna that potentially utilise this area as foraging and habitat. Vegetation clearance could result in the direct mortality of individuals,

displacement of nesting sites, reduced connectivity between foraging and nesting areas and potentially impacting reproductive success.

3.2 Operational Activities

3.2.1 Traffic and Noise

Traffic can create a range of anthropogenic disturbances such as movement, noise, and light disturbance. The ongoing operation of the school may generate noise disturbance. Anthropogenic disturbances may reduce the quality of any retained vegetation as habitat for any native species, reducing habitat quality through the determent of nesting sites and foraging, potentially impacting reproductive success. The level of effect of such anthropogenic disturbances will depend on the habitat retained and the landscaping of the site during construction, notwithstanding the existing habitat values of the site and the large extent of similar habitat in the surrounding catchment.

3.2.2 Onsite Wastewater Treatment and Disposal

For Phase 1, the initial development will be serviced by an on-site wastewater system. A feasibility study has been undertaken by Tonkin & Taylor (2021) for Phase 1, with Phase 2 of the school development to occur when a public connection is available to the site and the on-site wastewater disposal system will be removed.

Concept level calculations have been undertaken, based on Auckland Council Guideline Document: Onsite Wastewater Management in the Auckland Region (GD06), to confirm the site can accommodate an onsite disposal field system for Phase 1 through a range of potential measures.

As identified by Tonkin & Taylor (2021) primary wastewater treatment, the separation of suspended material from wastewater by settlement will be provided through storage tanks. Secondary treatment will likely be required, with the type of secondary treatment to be included in any future resource consent application. GD06 gives reference to a range of land application systems, the requirements in the AUP:OP lead to a pressure compensating drip lines being the preferred system (Tonkin & Taylor, 2021). Tonkin & Taylor (2021) have confirmed that a disposal field can be sited on-site, with a 50 % reserve field, outside the floodplain and outside a 20 m setback from the wetland. Tonkin & Taylor (2021) recommend further work to confirm the wastewater solution be undertaken during the resource consent process.

Even with treatment, wastewater disposal can modify site hydrology and introduce additional nutrients to the environment. A range of commonly applied measures are identified in GD06 to minimise such potential effects, including:

- Treatment to reduce the level of contaminants discharged.
- Land disposal via pressure compensating drip lines to minimise hydrological changes.
- Increasing the topsoil depth to allow for maximum evapo-transpiration and increased denutrification in the soil.
- Planting the disposal field to allow for increased nutrient removal.
- Buffer planting in and around the wetland for increased nutrient removal and improve resiliency to any biophysical changes.
- Setback wastewater disposal fields from the wetlands to increase separation distances and increase evapotranspiration and volatilisation.

In conjunction with compliance with GD06 and any requirements of the AUP:OP, the potential actions listed above will minimise the potential changes to site hydrology and nutrient values; especially given the runoff from the current agricultural land use.

3.2.3 Increase in Impervious Surfaces

The redevelopment of the subject site for educational purposes would result in an increase in impervious surfaces. As a positive effect, this is likely to lead to the prevention of further agricultural runoff (nutrients and sediment) from the site. However, an increase in impervious coverage, unmitigated, has the potential to alter hydrology resulting in increased peak flow discharges and adversely impact water quality. Changes in hydrology can have adverse effect on streams within the catchment, including accelerating river and stream erosion and bank instability, that generate sediment that can accumulate in the receiving environment.

As discussed in the feasibility study undertaken by Tonkin & Taylor (2021) the proposed stormwater approach for the site is in-line with the Stormwater Management Plan prepared for the catchment. A low impact design approach will be taken with a focus on at-source treatment and management across the site.

Hydrology mitigation through both retention and detention for all impervious surfaces is proposed. A range of possible options are available to meet the stormwater quantity objectives that also provide the maintenance of watercourse hydrology. Stormwater quality treatment is also proposed, the Tonkin & Taylor (2021) feasibility study demonstrates that site can accommodate swales, the stormwater quality device with the largest physical footprint, constructed in accordance with the relevant technical guidance Auckland Council Guideline Document 2017/001 Stormwater Management Devices in the Auckland Region (GD01).

Auckland Council provides guidance on applying Water Sensitive Urban Design (WSUD), a stormwater management approach that seeks to promote stormwater management practices that balance land development with the ecosystem services necessary to support it, in Auckland Council Guideline Document 2015/004 Water Sensitive Design for Stormwater (GD04). A WSUD approach reduces the potential for adverse effects from point-source stormwater discharges and those associated with a change in land use to occur.

3.2.4 Potential Positive Effects

The development of the site has the potential to improve ecological values. The removal of stock and subsequent landscaping with native vegetation could be utilised to improve habitat provision, and connectivity for native species, as well as, improving the ecological functions (shading and water temperature regulation function) of the onsite wetland.

3.3 Summary of Proposed Activities

It is acknowledged that the construction and operation of a school has potential adverse ecological effects. The redevelopment of the subject site would likely require the demolition and construction activities involving land disturbance and potentially minor vegetation clearance and associated noise and vibrations. The operational activities of the school are envisioned to included traffic movements, noise generating activities, and onsite wastewater treatment and disposal (temporary until the subject site is connected to the Auckland wastewater network). The development of the site has the potential to improve ecological values.

4. Ecological Impact Assessment

The current ecological values of the site have been described based on in-field observations in conjunction with a review of the available literature and databases as set out in Section 2 of this report. The likely activities have been described and set out in Section 3. This section utilises the findings of Sections 2 and 3 to provide an assessment of the ecological effects based on the EIANZ guidelines, set out in Appendix 3.

As part of this assessment it is important to highlight to the reader that this EcIA has been prepared to support The Ministry for the NoR to enable the construction and operation of a new school. Should the Ministry of Education be successful, the provisions of the National Environmental Standard for Freshwater 2020 (NES:FW), the regional provisions of the AUP:OP and the requirements of the Wildlife Act (1953) will still apply. Further details on these relevant matters have been provided below.

4.1 Relevant Planning Provisions

The NES:FW regulates certain activities that pose risks to the health of freshwater and freshwater ecosystems. The NES:FW aims to:

- stop further degradation of our freshwater.
- start making immediate improvements to water quality.
- reverse past damage to bring our waterways and ecosystems to a healthy state within a generation.

The NES:FW contains provisions that could potentially relate to the activities envisioned to construct and operate a school. Activities such as clearing vegetation with 10m, as well as earthworks and the diversion or discharge of water within a 100 m of a natural inland wetland require regional consents.

Should any resource consent be required for any of the activities identified, then Auckland Council would have the ability, through the usual resource consenting process, to place conditions on the consent to mitigate any identified effects.

The construction and operation of a school would not be able to apply for a consent for the reclamation of a wetland as this is a <u>prohibited activity</u> under Regulation 53 of the NES:FW. It is noted that wetland reclamation may be performed as a discretionary activity if it is for the purpose of constructing specified infrastructure (NES:FW Regulation 45), which may include the indicative collector road to be constructed by others, following a separate process.

The existing regional provisions of the AUP:OP that would apply to the likely activities that would be undertaken in the construction and operation of a school would remain in effect. Should any resource consent be required for any of the activities identified, then Auckland Council would have the ability, through the usual resource consenting process, to place conditions on the consent to mitigate any identified effects.

Given the values identified in this report it is not considered that any specific conditions are required on the designation in relation to vegetation clearance.

For land disturbance, standard E11.6.2(2) would require that industry best practice erosion and sediment controls (Auckland Council Guideline Document GD2016/005) are in place to address the effects from potential sediment discharges to the receiving environment.

The relevant stormwater provisions would depend on the stormwater management approach undertaken which is subject to detailed design. The AUP:OP also includes a range of provisions that relate to stormwater management include chapters: E1, E8 and the supporting best-practice technical guidance Auckland Council Guideline Document GD2015/004 and GD2017/001. It is also possible that

stormwater discharges from the site could be authorised by way of the Region wide Stormwater Network Discharge Consent held by Auckland Council Healthy Waters.

The relevant wastewater provisions would depend on the wastewater management approach undertaken which is subject to detailed design. The AUP:OP also includes a range of provisions that relate to wastewater management include chapters: E1, E5 and the supporting best-practice technical guidance GD2018/006.

4.2 The Wildlife Act 1953

The Wildlife Act (1953) absolutely protects all native lizards, bats, and birds (unless listed as a in Schedule 5). Consequently, a permit under the Wildlife Act would be required for any (potential) harm to these species.

4.3 Summary of Ecological Impact Assessment

The current ecological values of the areas that would be impacted by the likely activities are summarised and assessed in Table 5 below. Table 5 provides an interpretation of effects, assuming ecologically threatened species are temporarily present on site, although the actual likelihood or their presence is low. Magnitude is determined by a combination of scale (temporal and spatial) of the effect and degree of change that will be caused in or to, the ecological component and is assessed here with the relevant planning provisions forming a baseline.

The current site vegetation consists primarily of pasture grassland and an area of mixed exotic vegetation. The current ecological value of the subject site vegetation has been assessed as low. The level of effect of the anticipated vegetation clearance has been assessed as "very low", representative of a minor shift from current baseline conditions. There is potential for redevelopment landscaping to include native vegetation and increase the proportion of native vegetation present, such that the actual overall level of effect could be negligible.

The highest level of effect within the scope of the assessment undertaken relates to herpetofauna, where the level of effect is described as a conservative moderate without mitigation. This assessment assumes the highest possible impact, that the site supports populations of threatened native lizard fauna and that suitable lizard habitat is cleared. The Wildlife Act 1953 would require that any such vegetation clearance would require lizard search and salvage be performed, to relocate any lizards present within the subject site. As such it is considered that the level of effect would be reduced to low and that no conditions need to be placed on the designation to address this potential effect.

Effects on avifauna and native freshwater fish have been considered as very low and based on the interpretation of Table 12 (in Appendix 3).

No suitable native bat roosting sites were identified within the subject site and the site provides limited feeding opportunities, so it is considered unlikely that native bats are present on more than an infrequent transient basis. The clearance of site vegetation and construction of a school is therefore considered to produce a low level of effect on native bat values.

There is a risk of uncontrolled sediment discharge to the receiving environment during all land disturbance activities. Auckland Council Guideline Document: Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region (GD05) provides guidance on reducing the potential for erosion to occur and measures to minimise sediment discharged offsite. Redevelopment of the site provides the opportunity to bring the site's stormwater management approach in-line with current industry best practice (WSUD), and reduce agricultural runoff; such that overall changes to the stormwater discharge are expected to be negligible compared to the rural baseline.

Wastewater discharges can modify site hydrology and introduce additional nutrients to the environment, which can have an effect on the plant communities present and the water quality of the receiving environment. An effective wastewater treatment system following Council guidance (GD06) will minimise the potential changes to site hydrology and nutrient values and reduce the potential adverse effects of on-site wastewater disposal on the ecological values of the subject site.

It is considered that if best practice stormwater and wastewater management guidelines are implemented, then the impacts of these activities on site water quality and freshwater values will be not be discernible, and the level of effect has been assessed as Low.

The development of the site will also provide the benefit of removing stock access to the wetland and could include wetland enhancement planting. It is anticipated that the construction and operation of the school will avoid reclamation of the wetland, due to the prohibited activity status under the NES:FW.

Overall, the level of effect on the site's ecological values from the proposed activities has been assessed as Low – Very Low (Table 5); EIANZ provides a description of Low-level effects: potentially noticeable but that will not cause any significant adverse impacts.

	Table 5: Ass	essment of Level of Effect of the proposed activities	
Impact	Ecological Value (EIANZ, 2018)	Magnitude of Effect and Reasoning	Level of Effect
Vegetation	Low	Low – minor shift away from baseline condition, predominantly pasture grassland and exotic vegetation. Redevelopment landscaping could potentially increase native vegetation present, such that actual overall level of effect could be negligible.	Very Low
Avifauna	Low	Low – minor shift away from baseline condition given the paucity of habitat onsite and the wide spatial extent of similar habitat (rural land use) in the immediate surrounds. At a species level, any changes would likely be to common species and be subject to the provisions of the Wildlife Act.	Very Low
Herpetofauna	Moderate	Low – minor shift away from baseline condition given the paucity of habitat onsite and the wide spatial extent of similar habitat (rural land use) in the immediate surrounds. At a species level, any changes would likely be to common species and be subject to the provisions of the Wildlife Act. Lizard search and salvage should be implemented to mitigate any potential risk to native lizards.	Low
Bats	Moderate	Negligible – given the limited roosting and foraging opportunities it is considered that the magnitude of any impacts on bat populations would be barely distinguishable.	Very Low
Freshwater Values	Moderate	Low – The development of the site will need to comply with WSUD principles, employ best practice erosion and sediment control measures, and manage the hydrological and water quality effects of stormwater and wastewater discharges; such that any changes to the freshwater values is likely to be negligible compared to the existing situation. The development of the site provides an opportunity to enhance the wetland such that actual ecological effects could be a net-gain.	Low
Native Freshwater Fish	Negligible	Negligible – there is limited fish habitat within the subject site so effects on native fish are unlikely.	Very Low

5. Conclusions and Recommendations

It is acknowledged that the construction and operation of a school has the potential to have adverse ecological effects. The magnitude of these effects has been considered as either Low to Negligible using the EIANZ Ecological Impact Assessment guidelines. Considering both the ecological values and the magnitude of impacts, the overall level of effect ranges from Low to Very Low. EIANZ guidelines describe Low to Very Low-level effects as "not normally of concern" and "no more than minor", although normal design, construction and operational care should be exercised to minimise adverse effects.

Farming activities have cleared much of the site's original vegetation, the current land cover present is typical and consistent with the past and current agricultural use of the site. The largest extents of vegetation are pasture grasslands (93%) and a smaller area of mature exotic trees interspersed with regenerating natives (7%). Exotic pest plants such as woolly nightshade, field bindweed, and agapanthus are also common.

Although the site has been heavily modified, it retains some ecological value. Ecological features of note include the area of woody vegetation and identified wetland. Vegetation, where present contributes to ecosystem services such as habitat provision for native fauna adapted to moving across agricultural landscapes. The paucity of quality habitat values and areas is reflected in the native species of birds, lizards, bats, and fish considered likely to utilise the site. Avifauna species present are consistent with those that can comfortably travel distances over open fields between forested patches, or make use of fields, farmland, and shelter belt vegetation as habitat. Suitable lizard habitat is limited and, if present, lizard populations are likely limited to Copper or Plague Skinks. The subject site contains no old growth trees with cavities or loose bark that may be utilised as roosts and is not proximate to any waterways that could be utilised as movement corridors by native long-tailed bats. Given the absence of fish habitat, the subject site is not expected to support native freshwater fish populations. Whilst onsite fauna observations were limited to common species, the use of this area by threatened species such as long-tailed bats, whilst considered unlikely, cannot categorically be ruled out.

The redevelopment of the subject site would likely require the demolition and construction activities involving land disturbance and potentially minor vegetation clearance and associated dust, noise, vibrations, and traffic movements. Given the values associated with the vegetation identified in this report the level of effect for any vegetation clearance would be Very Low. The provisions of the Wildlife Act will also remain in effect to ensure that any loss of habitat for native avifauna, lizards and bats is appropriately managed. For all land disturbance activities, such as building demolition and construction, there is the potential for sediment to be discharged from the site to the receiving environment; this would be addressed through the existing requirement for industry best practice erosion and sediment controls during any land disturbance. The redevelopment of the site for educational purposes could result in increased in impervious coverage. The potential effects of changes to the quantity and quality of stormwater discharged from the site would be addressed through the stormwater management approach developed for the site. The potential effects of changes to site hydrology and nutrient values as a result of on-site wastewater treatment and disposal will be addressed by implementing Auckland Council best practice guidelines (GD01, GD05 and GD06).

Overall, the effects of the proposed activities are considered here as Low - Very Low. As such it is not considered necessary to recommend any ecology-specific conditions to address any of the identified effects.

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Appendix 1 Site Map

TRIG RD ECIA - SITE OVERVIEW





This plan may contain errors or omissions or may not have the spatial accuracy req



Client MINISTRY FOR EDUCATION Project 13-15 TRIG RD ECIA 50 100 m

There may be other information relating to the area shown on this map which is unknown to Morphum Environmental Ltd. This map may contain Crown copyright data. Please consult Morphum Environmental Ltd if you have any queries.

P02914 Project no. Date 9 Feb 2021

> Drawn DB Approved JS

Appendix 2 Site Wetland Delineation

As part of the 13-15 Trig Rd Ecological Impact Assessment Morphum was engaged to identify and assess potential wetlands against the wetlands definitions of the Resource Management Act (RMA) and National Policy Statement for Freshwater Management 2020 (NPS:FM).

The RMA definition of a wetland includes *permanently* or *intermittently* wet areas, shallow water, and land water margins that support a natural ecosystem of plants and animals that are adapted to wet conditions.

The NPS:FM definition of a natural inland wetland includes:

natural wetland means a wetland (as defined in the Act) that is not:

(a) a wetland constructed by artificial means (unless it was constructed to offset impacts on, or restore, an existing or former natural wetland); or

(b) a geothermal wetland; or

(c) any area of improved pasture that, at the commencement date, is dominated by (that is more than 50% of) exotic pasture species and is subject to temporary rain-derived water pooling

The classification methodology used aligns with the Wetland Delineation Protocols as specified in the NPS:FM.

Methodology

A site visit for the EcIA was undertaken on 28th January 2021. Potential wetlands were assessed using the procedure described in the Wetland Delineation Protocols (Ministry for the Environment, 2020). The nearest Auckland Council rainfall monitoring point, Whenuapai Air Base approximately 3 km away, recorded no significant rainfall events over the preceding week (Table 6).

Table 6: Dates and Depth of Rainfall Over the Previous Week (Mt Albert Grammar)			
Date	Daily Rainfall (mm)		
22/01/2021	0.5		
23/01/2021	0		
24/01/2021	0.5		
25/01/2021	0		
26/01/2021	0		
27/01/2021	0		
Total Rainfall (mm)	1		

On the site visit, 2 areas were identified for further investigations. Potential Wetland 1 and Potential Wetland 2 were identified for featuring vegetation distinct from the surrounding area and for being at the bottom of the hillslope, an area where wetlands are likely to occur. Potential Wetlands 1 and 2 are shown on Figure 5 and representative site photos are provided in Table 9.



Figure 5: Subject site and potential wetlands. Potential Wetland 1 was assessed as 'not a wetland', and Potential Wetland 2 was found to meet the definition of a wetland under the RMA and NPS:FM.

Neither the distinct vegetation nor the location below a hillslope are grounds in and of themselves to conclude that a feature is a wetland. Wetlands have many distinguishing features, the most notable being the presence of water at or near the surface, vegetation adapted to or tolerant of saturated soils and distinctive hydromorphic soils. Assessing indicators of the presence of each of these features is widely accepted as a valid way to identify wetlands.

Surface Water

There were no signs of surface water being present in this location during the site visit. The water level was not encountered at either Potential Wetland 1 or Potential Wetland 2 during hand auguring (to a depth of 500 mm).

Vegetation Assessment

Past land-use management, including vegetation clearance, and potentially the sowing of pasture species has removed the natural vegetation. The remaining vegetation is comprised of typical unkept pasture species ranges from Facultative – Wetland to Facultative – Upland species.

The Wetland Delineation Protocols apply a "Rapid Test" and "Dominance Test" to a plant community to determine whether the vegetation is hydrophytic (wetland). The on-site vegetation fidelity to wetlands was taken from Clarkson (2013). A representative 1×1 m quadrat was established near the middle of each wetland; and moved outwards at 3 - 5 m intervals until the vegetation was consistent with that of the surrounding pasture. Table 7 provides a summary of the Rapid and Dominance Tests.

The on-site vegetation displayed some fidelity to wetlands, all four survey points failed the Rapid Vegetation Test. Given the dominance of Facultative species present, Potential Wetland 1 and Potential Wetland 2 passed the Dominance Test. The Wetland Delineation Protocols require the soils be assed for indicators of hydric soils.

Table 7: Vegetation Assessment					
Location	Species Present	Fidelity to Wetlands	Coverage	Rapid Test Outcome	Dominance Test Outcome
Wetland 1 Plot 1	Sharp-pointed rush (junctus acutus)	FACW (exotic)	25		Pass - > 50% vegetation is Facultative; requires soil and wetland hydrology assessment
	Rye grass (lolium perenne)	UPL	25	Fail – Dominant	
	Buttercup (<i>Ranunculus repens</i>)	FAC	20	species are not Obligate or	
	Birdsfoot (<i>Lotus pedunculatus</i>)	FAC	20	Facultative Wetland species; requires	
	Broadleaf plantain (<i>Plantago major</i>)	FACU (Exotic)	5	dominance test	
	Water pepper (Persicaria hydropiper)	FACW (exotic)	5	-	
Wetland 1 Plot 2	Birdsfoot (<i>Lotus</i> pedunculatus)	FAC	60		Pass - > 50% vegetation is Facultative; requires soil and wetland hydrology assessment
	Buttercup (<i>Ranunculus</i> repens)	FAC	20	Fail – No obligate and Facultative	
	Rye grass (lolium perenne)	UPL	15	vetland species present; requires dominance test	
	Yorkshire fog (Holcus lanatus)	FAC (Exotic)	5		
	Rye grass (lolium perenne)	UPL	55		Fail - < 50% vegetation is Facultative; requires soil and wetland hydrology assessment
	Sharp-pointed rush (junctus acutus)	FACW (exotic)	10		
Wetland 2 Plot 1	Buttercup (<i>Ranunculus</i> repens)	FAC	10	Fail – Dominant	
	Red Clover (Trifolium pratense)	FACU (exotic)	10	Obligate or Facultative	
	Broadleaf Dock (Rumex obtusifolius)	FAC (exotic)	5	requires dominance test	
	Birdsfoot (<i>Lotus</i> pedunculatus)	FAC	5		
	White Clover (<i>Trifolium repens</i>)	FACU (exotic)	5		

Location	Species Present	Fidelity to Wetlands	Coverage	Rapid Test Outcome	Dominance Test Outcome
Wetland 2 Plot 2	Rye grass (<i>lolium</i> perenne)	UPL	15	Fail – No obligate and Facultative Wetland species present, requires	Pass - > 50% vegetation is Facultative; requires soil and wetland hydrology assessment
	Yorkshire fog (<i>Holcus</i> <i>lanatus</i>)	FAC (Exotic)	20		
	Birdsfoot (<i>Lotus</i> pedunculatus)	FAC	40		
	Red Clover (Trifolium pratense)	FACU (exotic)	10	dominance test	
	Buttercup (<i>Ranunculus</i> repens)	FAC	15		

Soils Assessment

Wetland soils display hydromorphic characteristics resulting from prolonged and repeated saturation. These processes result in distinctive characteristics that persist in the soil during both wet and dry periods, making them particularly useful for identifying hydric soils in the field. Evidence of hydric soils is indicated by the presence of gley soil; the presence of iron mottles, and/or an abundant accumulation of organic carbon in the topsoil (i.e. peat).

At Potential Wetland 1 there was a uniform layer of top-soil with a transition to the underlying clayey layer at approximately 250 mm (Plot 1) – 400 mm (Plot 2). The topsoil layer at Potential Wetland 1 was extremely dry and friable. Similarly, the clay at Potential Wetland 1 was dry with little plasticity. The sample depth was extended to 500 mm, due to the sample location being down-gradient of a hillslope and the potential for fill to have washed into this location. Below 400 mm the clay layer was uniform. At no stage was the presence of any mottles, signs of organic enrichment noted. Overall, the soil core did not appear gleyed as high chroma colours were still present.

At Potential Wetland 2 there was a uniform layer of topsoil for approximately 150 mm. The soil layer at Potential Wetland 2 was moist and rich in organic matter. The sample depth was extended to 500 mm, due to the sample location being down-gradient of a hillslope and the potential for fill to have washed into this location. Below 200 mm there was a noticeable increase in soil clay content down to a depth of approximately 300 mm after which clay became the dominant substrate. Between 350 – 500 mm the clay layer showed high plasticity (Figure 6). Soil mottling and signs of organic enrichment were observed as far down as the clay layer at 450 mm. Overall, the soil core appeared gleyed; and high chroma colours were absent from deeper soils.

The water level was not encountered at either sampling location.

Table 8: Soil Assessment					
Location	Gleyed	Mottles	Carbon / Organic enrichment	Soil Outcome	
Potential Wetland 1	No	No	No	Hydric soils absent	
Potential Wetland 2	Yes	Yes	Yes	Hydric soils present	

As shown in Table 8, indicators of hydric soils and wetland hydrology were present at Potential Wetland 2, and as such in applying the Wetland Delineation Protocols methodology the vegetation on at this point is assessed as 'wetland vegetation'. Following the Wetland Delineation Protocols, the vegetation at Potential Wetland 1 was assessed to be 'non-wetland vegetation'.



Figure 6: A soil core at Potential Wetland 2 found clay soils with a high degree of plasticity and some mottling.

Overall Assessment

The data collected and the Wetland Delineation Methodology were used to classify the two potential wetlands under the definitions in the RMA.

At Potential Wetland 1 the vegetation is dominated by facultative vegetation; indicators of hydric soils and wetland hydrology are absent. Having applied the Wetland Delineation Protocols methodology the vegetation in this area is assessed as 'non-wetland vegetation', therefore Potential Wetland 1 does not support a natural ecosystem of plants and animals that are adapted to wet conditions.

At Potential Wetland 2 the vegetation is dominated by facultative vegetation; however, indicators of hydric soils and wetland hydrology are present. Having applied the Wetland Delineation Protocols methodology this area has been assessed as a 'wetland vegetation', therefore displays evidence of being intermittently wet and supports a natural ecosystem of plants that are adapted to wet conditions, consistent with the RMA definition of a wetland.
13-15 Trig Rd EclA
Prepared for Ministry for Education

May 2021

Final



13-15 Trig Rd EcIA Prepared for Ministry for Education		May 2021 Final	
Landsc	ape context	Vegetation	Soil Profile
Wetland 2 Point 1			P. A. P. B. P. B. P. B. S.

Wetland 2 Point 2



Appendix 3 EIANZ Assessment Methodology

Table 10: A Value	ssigning value to species, vegetation, and hab Species Values	itats (summarised from EIANZ, 2018) Vegetation/Habitat Values
Very High	Nationally threatened species found in the (Zone of Influence) ZOI ¹ either permanently or seasonally	Area rates High for 3 or four attributes (Representativeness, Rarity/distinctiveness, Diversity and pattern, Ecological context). Likely to be national important and recognised as such
High	Species listed as At Risk – Declining, found in the ZOI either permanently or seasonally	Area rates High for 2 of the attributes, Moderate and Low for the remainder, or Area rates High for 1 assessment matters, Moderate for the remainder Likely to be regionally important and recognised as such
Moderate	Species listed as any other category of At Risk, found in the ZOI either permanently or seasonally, or Locally (ED) uncommon or distinctive species	Area rates High for 1 assessment matters, Moderate and Low for the remainder, or Area rates Moderate for 2 or more of the attributes, Low or Very Low for the remainder Likely to be important at the level of the Ecological District
Low	Nationally and locally common indigenous species	Area rates Low or Very Low for majority of assessment matters and Moderate for 1 Limited ecological value other than as for habitat for tolerant native species
Negligible	Exotic species, including pest species having recreational value	Area rates Very Low for 3 matters and Moderate, Low or Very Low for remainder

¹ The Zone of Influence (ZOI) refers to all land, water bodies and receiving environments that could be potentially impacted by the project.

Table 1	Table 11: Criteria for describing magnitude of effect (summarised from EIANZ, 2018)			
Magnitude	Description			
Very High	Total loss of or major alteration to key features of the baseline condition causing a fundamental change or complete loss of the character, composition, or attributes of the site.			
High	Major loss or major alteration to key features of the baseline condition causing a fundamental change of the character, composition, or attributes of the site.			
Moderate	Loss or alteration of one or more key features of the baseline condition causing a partial change to the character, composition, or attributes of the site.			
Low	Minor shift away from baseline conditions. Change may be discernible, but underling character, composition, or attributes of the site will be similar to pre-development.			
Negligible	Very slight change from existing baseline condition. Change barely distinguishable.			

Table 12: Criteria for describing level of effects (from EIANZ, 2018)						
Ecological Value	Very High	High	Moderate	Low	Negligible	
Magnitude						
Very High	Very High	Very High	High	Moderate	Low	
High	Very High	Very High	Moderate	Low	Very Low	
Moderate	High	High	Moderate	Very Low	Very Low	
Low	Moderate	Low	Low	Very Low	Very Low	
Negligible	Low	Very Low	Very Low	Very Low	Very Low	
Positive	Net gain	Net gain	Net gain	Net gain	Net gain	



Appendix G

Civil Infrastructure Assessment

REPORT

Tonkin+Taylor

13-15 Trig Road, Whenuapai

Site Feasibility Assessment - Civil Infrastructure

Prepared for Ministry of Education Prepared by Tonkin & Taylor Ltd Date June 2021 Job Number 1016524.v0





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Executive summary

The Ministry of Education (MoE) is seeking to designate a site at 15 Trig Rd, Whenuapai for education purposes. Tonkin & Taylor Ltd (T+T) have been engaged to provide a civil infrastructure assessment to support the designation application.

This report discusses the available connections to existing public services and potential solutions to stormwater management, wastewater disposal and water supply.

There is no public wastewater or stormwater reticulation near the site. The option to provide an onsite wastewater disposal system has been reviewed and so are options for stormwater management.

An indicative bulk and location feasibility plan has been prepared and a suitable area for stormwater management and onsite wastewater disposal can be accommodated within the bulk and location feasibility plan.

1 Introduction

Tonkin & Taylor Ltd (T+T) have been engaged by the Ministry of Education (MoE) to provide a civil infrastructure assessment of a site at 13-15 Trig Rd, Whenuapai. We have been advised by MoE that the site is to be developed for educational purposes in two phases:

- Phase 1 Overflow school to serve a shortfall in the school network capacity in Whenuapai North, Redhills and Hobsonville.
- Phase 2 Primary School and Early Childhood Education (ECE) to serve the long-term needs of the local adjacent school catchment as the adjacent area is developed and demand increases (Years 0-8).

The proposed school site ('the site') is approximately 4.05 hectares (ha) and is located off State Highway 18 on Trig Rd, Whenuapai, Auckland. The site is currently zoned Residential – Large Lot zone.

The site also lies within the proposed plan change PC5: Whenuapai Plan Change (PC5) where a zone change is proposed to Residential – Mixed Housing Urban (refer to Figure 1-1 below). MoE is seeking to designate the site for education purposes.



Figure 1-1 Proposed Plan Change 5 Zoning

A bulk and location plan has been developed by Jasmax with input from Abley Ltd, Morphum Environmental Ltd and T+T. To support the designation process, a civil infrastructure feasibility assessment has been prepared to inform the suitability of the site to be developed for a primary school.

2 Site description and layout

The site is located at 13-15 Trig Rd, Whenuapai, Auckland and is legally described as LOT 5 DP 66045. The proposed school site is located on the eastern side of Trig Road and has an overall site area of approximately 4.05 ha (refer to Figure 2-1 below).



Figure 2-1: Site layout with contours, Source Auckland Council Geomaps 15/04/2021

The site and adjacent properties are predominantly large lots between 4-5 ha with single dwellings.

No topographical survey has been undertaken to date and contours shown on Geomaps have been used as the basis of assessment. The site has a high point of RL 54.0 m in the western corner adjacent to Trig Road and another high point of RL 47 m part way along the northern boundary. The site generally falls from west to east, with a low point of RL 41 m in the eastern corner of the site. The western side of the site is reasonably steep (up to approximately 16% slope). The western corner of the site is utilised as pasture for grazing.

A wetland has been identified part way along the southern boundary of the site (refer to the ecological impact assessment prepared by Morphum Environmental Ltd¹) which extends into 9 Trig Road to the south, which is at the headwater of the Trig Stream discharging northeast.

¹ Morphum Environmental Ltd. Ecological Impact Assessment 13-15 Trig Road Rev 2 dated 30 May, 2021.

3 Proposed development

We understand that the MoE is seeking to designate the site for education purposes. Phase 1 of the proposed development will include an overflow primary school with a temporary bulk and location feasibility plan roll of 600. For Phase 2, the bulk and location feasibility plan roll for the primary school is intended to expand to 1000 students and include an early childhood centre (ECE) facility with capacity for 50 children.

A bulk and location feasibility plan has been prepared by Jasmax (refer to Appendix A).

4 Flood hazard

This section of the report discusses the proposed flood hazard management approach for the site.

Plan Change 5 proposes different flood management practices than provided by the AUP. Whenuapai 3 Precinct: Stormwater Management Plan was prepared by 4Sight Consulting Ltd on behalf of Auckland Council Healthy Waters in September 2017 (SMP) to support the plan change.

The plan change has yet to be approved but the SMP has been used as the basis of this assessment.

The site is at the top of the Trig Stream catchment which is part of the Waiarohia Stream subcatchment. A rapid flood hazard assessment (RFHA) model can be viewed on the Auckland Council GIS. The RFHA was prepared by Auckland Council Healthy Waters to inform the plan change process and shows no flood plains within the site. An overland flow path is shown to originate within the site and this coincides with the location of the wetland identified in the ecological assessment prepared by Morphum Environmental Ltd.



Figure 4-1 Annotated extract from Auckland Council GIS catchment and hydrology layers

The SMP identifies that flood hazard is not a key constraint in the catchment provided flood plains and overland flow paths are managed.

The stormwater management requirements for flooding are replicated in Table 4.1 below.

 Table 4.1:
 Stormwater management requirements

Principle/ Approach	Minimum Requirements	Desirable
New flood risk is not created; and existing flood risk is not increased and where possible, is reduced.	Development shall not create, or exacerbate existing, flooding of any habitable floor the 1 % AEP (incorporating climate change) MPD flood plains. New buildings shall be located outside the 1% AEP (incorporating climate change) MPD flood plain; and any overland flow path. Overland flow paths shall be retained/provided to convey the 1% AEP (incorporating climate change) event from the contributing catchment (MPD) without creating flood risk. All overland flow paths shall be mapped and provided to Council on GIS.	Infrastructure and overland flow paths are designed to reduce existing habitable floor flooding where possible. Riparian margins provided and protected to safely convey flood flows.
	Overland flow paths on private property shall be protected from development.	

The SMP for the plan change was based on the *Whenuapai Stormwater Management Plan (SMP) Update – Final* prepared by AECOM New Zealand Ltd for Healthy Waters in July 2017. This report included a rapid flood hazard assessment (RFHA) completed by AECOM in June 2016 which is the same available for viewing through Auckland Council GIS.

The RFHA was completed based on a catchment wide impervious area of 80%. The proposed zoning for the site in the plan change is for Mixed Housing Urban which allows 60% impervious area. A Special Purpose – School Zone Designation would be required to develop a school which limits the maximum impervious area to 70% of the site area (H29.6.5).

The bulk and location feasibility plan indicates the school development could have between 25%-45% impervious area. Therefore, the development is within the SMP modelled parameters for flooding and it is expected that no additional flood mitigation measures will be required.

The proposed school buildings are to be located outside the identified flood area and existing flow paths including the existing wetland are to be maintained.

A pre-application meeting was held with Auckland Council on 28th April. Council's catchment management planner provided advice via email that a pass-through methodology is appropriate for the site.

We note resource consents will not be applied for at this time however, the Auckland Council catchment planner noted Plan Change 5 is currently being amended and the latest floodplain information will need to be reviewed when resource consents are sought for the site. A site-specific assessment will be undertaken when an application for resource consent is made.

5 Stormwater

5.1 Existing stormwater system

The Auckland Council GIS system shows no existing public infrastructure within the site. There are no private drainage records available in the property file.

A site walkover was completed on 23rd February and downpipes were observed on the existing dwelling however no obvious discharged point was observed. It has been assumed that the pipes discharge to ground or daylight without a headwall structure away from the dwelling.

5.2 Proposed stormwater management

There are no new public stormwater assets required to support the development. The existing private pipes associated with the existing dwelling and livestock water troughs will be removed.

A low impact design approach will be undertaken with a focus on at-source treatment and management across the site in line with the requirements of the SMP (refer to Stormwater management requirements Table 11 of Appendix B).

The bulk and location feasibility plan has been used as the basis of the assessment.

We note a school zone designation allows up to 70% impervious area and this has also been included to provide an understanding of a potential maximum probable development scenario (MPD). The following impervious area distribution has been assumed based on similar school sites for the 70% MPD scenario:

- Roading and car parking 25%
- Buildings (roof area) 30%
- Hard landscaping (possible all-weather playing surface) 45%

As part of the Plan Change 5 application it is proposed that the Stormwater Management Area – Flow 1 controls are applied to the catchment to maintain and enhance the existing stream hydrology.

Stormwater management area control	Hydrology mitigation requirements
Stormwater management area – Flow 1	(a) provide retention (volume reduction) of at least 5mm runoff depth for the impervious area for which hydrology mitigation is required; and (b) provide detention (temporary storage) and a drain down period of 24 hours for the difference between the predevelopment and post- development runoff volumes from the 95th percentile, 24-hour rainfall event minus the 5 mm retention volume or any greater retention volume that is achieved, over the impervious area for which hydrology mitigation is required.

Table 5.1: Extract from AUP Table E10.6.3.1.1 Hydrology mitigation requirements

Various options to achieve these controls have been assessed to ensure sufficient space has been allowed for within the bulk and location plan to accommodate stormwater management.

5.2.1 Onsite Retention

Onsite retention of the first 5 mm of runoff will be provided for the runoff from all impervious surfaces.

It is noted that the SMP expresses a preference for infiltration devices in the upper catchment areas as a means to maintain stream base flows and encourage aquifer recharge. Rainwater harvesting has been reviewed as an option however the water would need to be used for irrigation to provide any infiltration.

The retention volumes are summarised in Table 5.2 below.

Table 5.2: Retention volume by source

Development	Indicative bulk and location feasibility plan (stage 1)			MPD
Source	Buildings	PUDO/Carpark	Total	70% impervious site
Area (m²)	3,405	4,880	8,285	28,350
Volume (m³)	17	24.4	41.4	70 (rounded)

Retention options reviewed are listed below and shown in Figure 5-1. We note there are other options such as tree pits or proprietary products such as GRAF Ecoblocks which could also be considered however, we have limited our assessment to four simple options:

- 1 Permeable paving in carparking bays (sized for carpark, PUDO and access roads).
- 2 Gravel storage trenches adjacent to paved areas.
- 3 Raingardens adjacent to paved areas and a separate device for roof runoff.
- 4 Rainwater harvesting storage tanks (for roof runoff).



Figure 5-1 Retention device options

A summary of device sizes for different sources across the site can be found in Appendix C.

5.2.2 Onsite Detention

Detention and release of the 95th percentile storm event over 24hrs will be provided for the runoff from all impervious surfaces.

A single end of pipe device is not proposed for the site. Instead, a series of devices as close to the source as possible is proposed.

The detention volumes are summarised in Table 5.3 below.

Table 5.3: Detention volume by sour

Development	Indicative bulk and	MPD		
Source	Buildings	PUDO/Carpark	Total	70% impervious site
Area (m²)	3,405	4,880	8,285	28,350
Volume (m ³)	119.1	115.5	234.6	865 (rounded)

Detention options reviewed are listed below and shown in Figure 5-2. We note there are other options such as proprietary products such as GRAF Ecoblocks which could also be considered however, we have limited our assessment to four simple options:

- 1 Permeable paving in carparking bays (sized for carpark, PUDO and access roads).
- 2 Oversized underground pipes.
- 3 Raingardens adjacent to paved areas and a separate device for roof runoff.
- 4 Rainwater harvesting storage tanks (for roof runoff).



Figure 5-2 Detention device options

A summary of device sizes for different sources across the site can be found in Appendix C.

5.2.3 Treatment

There will be carparking and pick up drop off (PUDO) area required within the site to support the school activities. The carpark is likely to service more than 30 vehicles. Provisions for "high contaminant generation carparks²" have been included in this assessment.

Staff carparking, PUDO areas and associated access requirements are expected to be between 1,000 m²-5,000 m² and stormwater treatment devices will be required.

A number of devices have been assessed to ensure adequate area is set aside in the bulk and location feasibility plan to accommodate stormwater management. The largest footprint for treatment is for swales (allowing for some battering/earth working). A 12 m strip has been set aside for swales.

In a preapplication meeting held on 28th April 2021 at Auckland Council Offices, the council stormwater specialist requested a discussion on the potential contaminants be included in technical reports supporting the designation.

Auckland Regional Council Technical Publication 10 – Stormwater Management Devices: Design Guidelines Manual, (Auckland Regional Council, 1992 and 2003) provides guidance on the expected contaminants from various land use activities. Total Suspended Solids (TSS), Zinc and Total Petroleum Hydrocarbons (TPH) are identified as the contaminants commonly associated with asphalt paved surfaces. Infiltration, filtration and biofiltration practices are considered the most appropriate for this land use type.

Auckland Council GD01 is an update of TP10 and supersedes that document. The guideline is a technical design guide which provides stormwater options and design advice based on current good practice specific to the requirements of the Auckland Unitary Plan. Treatment devices will be sized and in accordance with GD01.

5.2.4 Summary

Devices for retention, detention and treatment have been investigated to determine if the site could accommodate the impervious development associated with a school. It is noted that the designer may choose individual devices or a single device for each impervious area type (i.e., raingarden) to manage stormwater.

A 12 m strip adjacent to the carpark and PUDO has been provided in the bulk and location feasibility plan. This area can accommodate swales and/or raingardens to treat stormwater runoff. Devices servicing the buildings or hard landscaping areas are likely to be smaller and can be included into the landscaping design and have therefore not been specifically denoted on the bulk and location feasibility plan.

Device options are summarised in Appendix C.

5.3 Protection of existing wetland

It is proposed that all new stormwater piped outlets are constructed a minimum of 20 m from the wetland with flow then travelling overland to the wetland to allow riparian and enhancement planting.

Discussion of the protection and enhancement of the existing wetland is contained in ecological assessment prepared by Morphum Environmental Ltd.

² Auckland Unitary Plan Chapter E9

6 Wastewater

6.1 Existing reticulation

6.1.1 Private drainage

The existing residential dwelling is currently serviced by a private on-site disposal system. Based on the information available in the property file, we understand there is an underground precast concrete septic tank (2000 litre) which discharges to an effluent field.

The location of the disposal field and septic tank is not shown in the property file. Location and removal of the disposal field will be required prior to earth working the site.

6.1.2 Public drainage

Auckland Council Geomaps identifies the nearest public reticulation is a 355 mm diameter polyethylene (PE) public wastewater rising main line along Spedding Road. This rising main runs east towards Trig Road and discharges into the Brigham Creek Road pump station approx. 2.5 km from the site.

Currently there is limited public infrastructure servicing the Whenuapai area. Watercare is in the process of constructing a new wastewater trunk called the Northern Interceptor. This trunk line is intended to increase the public wastewater capacity of the Whenuapai catchment area. The first stage of the Northern Interceptor will divert flow north east to the Rosedale Wastewater Treatment Plant and is planned to be completed in 2021. Future stages of the northern interceptor (2025 to 2035) are expected to provide additional trunk capacity to service the ultimate future development of Whenuapai.

There is currently no public wastewater infrastructure along Trig Road in the vicinity of the site. Therefore, no public wastewater connection is available to the site. Alternative disposal options will need to be implemented to accommodate Phase 1 of the school development. These are discussed in the following sections.

Phase 2 of the school development will not occur until a public connection is available to the site and the on-site wastewater disposal system will be removed. Phase 2 has not be considered further in this section of the report.

6.2 Interim disposal option

As stated in Section 6.1.2 above, there is currently no public reticulation within the vicinity of the site and therefore it is unlikely that public wastewater infrastructure will be in place prior to the school opening. It is proposed that onsite wastewater disposal is incorporated into the development as an interim solution until a public connection is available for the future roll of 1000 students and provision for an early childhood centre.

Concept level calculations have been undertaken to understand if a bulk and location feasibility plan for the school can accommodate an onsite disposal field system for Phase 1 of the proposed school development. These calculations have been based on Auckland Council Guideline Document: On-site Wastewater Management GD06 (GD06). GD06 provides technical guidance for on-site wastewater systems for households and institutions in the Auckland region and replaces Auckland Regional Council Technical Publication TP58, On-site Wastewater Systems: Design and Management Manual. It is intended for smaller occupancies and flow (up to 15 people or 3 m³/day) but sections of the document are applicable for treatment of domestic wastewater for institutions such as schools.

6.2.1 Design Assumptions

The following design parameters have been used for the concept design:

- Average unit wastewater generation 15-30 l/person/day (low and high usage);
- Infiltration Category 5 as per GD06 (assuming low permeability soils);
- Design loading rate and design irrigation rates 3.0 mm/day (assuming PCDI system);

Table 6.1: Concept number of students

Stage	No. Primary students	No. ECE children
2022 Initial Roll- Primary	600	-

School roll information provided by the Ministry of Education

Table 6.2: Concept staff numbers

Stage	No. Staff
2022 Initial Roll- Primary	33

Staff numbers based on MoE guidance: https://www.education.govt.nz/school/funding-andfinancials/resourcing/school-staffing/entitlement-staffing/#Curr

Concept calculations are presented in Appendix C.

6.2.2 On-site disposal flows

The design unit wastewater generation has been based on the domestic wastewater flow allowances per capita outlined in GD06 - Table 24.

A daily use per person has then been calculated at 15 litres/person/day for low water usage and 30 litres/person/day for high water usage.

We note that the following assumptions have been made in using these values for assessment purposes:

- Assumes that all potable water is converted to wastewater;
- No allowance has been made for cafeterias (with on-site catering); and
- No allowance has been made for gyms with shower facilities.

Design volumes utilised and the possible volume ranges are shown in Table 6.3 below:

Table 6.3: Unit wastewater generation

Phase	School Roll		Effluent volume (m³/day)
	Students	Staff	Low and high-water use (based on GD06 Table 24 flow allowances)
Phase 1	600	33	9.5-19.0

6.2.3 Primary treatment (settlement tanks)

Primary treatment is the separation of suspended material from wastewater by settlement.

The minimum requirement (GD06) is three to five days of average daily volume. This can be reduced if the secondary treatment can be shown to meet the required discharge standards. This should be

reviewed in future resource consent application design phases.

The minimum tank volumes based on the low and high daily design flows are shown in Table 6.4 below. The number of storage tanks shown in Table 6.4 is based on three days of average daily volume.

Phase	Effluent storage volume (m ³) Low usage High usage		Approximate number of storage tanks (assume 6 m ³ per tank)	
			Low usage	High usage
Phase 1	28.5	57	5	10

Table 6.4:	Primary storage volume requirements -	- low and high-water usage
------------	---------------------------------------	----------------------------

6.2.4 Secondary treatment

The AUP requires secondary treatment for the onsite disposal to be considered a permitted activity and the quality of the discharge is a consideration for restricted discretionary status. Although GD06 gives reference to a range of land application systems, the requirements in the AUP lead to pressure compensating drip lines as the preferred system which requires a secondary level of treatment.

Secondary treatment will likely be required and investigation on the type of treatment should be included in any future resource consent application.

6.2.5 Disposal field size

As mentioned in Section 6.2.4 above, the AUP leans towards a PCDI as the preferred system. Assuming a PCDI land application system is adopted, the required disposal field area is likely to be between 3,200 m² and 6,300 m². Refer to Table 6.5 below.

Disposal field areas have been calculated based on low and high daily use per person (15 litres/person/day and 30 litres/person/day respectively). We note the high daily use is particularly conservative, however we have adopted this "worst case scenario" to understand space constraints and demonstrate feasibility of a concept on-site disposal field for Phase 1 of the proposed development.

PCDI systems distribute evenly and higher application rates can be accommodated however, 3 mm/day³ has been adopted for this assessment as no geotechnical testing has been undertaken. It is recommended that geotechnical investigations are undertaken prior to any future resource consent application to confirm the infiltration rates of the existing soils.

Table 6.5:	Summary of dis	oosal field area –	low and high usage
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Stage	Schoo	ol roll	Land application area (m ² rounded) required for discharge of full volume –	Land application area (m2 rounded) required for discharge of full volume –	
	Students	Staff	low usage	high usage	
Phase 1	600	33	3,200	6,300	

³ 3mm/day based on GD06 – Table 42 assuming PCDI system and soil category 5.

For infrequent but higher loading events such as school fairs and sports days, it is likely that potaloos or similar are used to manage the increased demand and avoid overloading of the on-site wastewater disposal system.

6.2.6 Disposal field location

GD06 notes secondary treated effluent should not be disposed within the 20-year flood plain and that pressure compensating dripper irrigation (PCDI) should not be disposed of at a rate greater than 3 mm/day. Accordingly, the disposal field should be located outside the flood plain extents and set back a minimum of 20 m from streams and waterbodies and 1.5 m minimum from the property boundary. The main minimum setbacks are provided in GD06 and summarised in Table 6.6 below.

Table 6.6:	Minimum setback distance from land application area to site feature for different
	effluent treatment levels

Site feature	Soil category	Primary effluent treatment level	Advanced secondary effluent treatment level
Buildings		3 m	1.5 m – 3 m
Property boundaries		1.5 m	1.5 m
Surface waters (including wetlands and overland flow paths etc.)	54	20 m	15 m
Groundwater		1.2 m	0.6 m
Floodplain (located outside of X% AEP) ⁵		1% AEP	5% AEP

The site was reviewed and a constraints plan prepared. The site constraints are shown in Figure 6-1 below.



Figure 6-1: Site constraints relating to on-site wastewater disposal field location

⁴ Conservatively assumed Soil Category 5, it is recommended this is confirmed during preliminary design.

⁵ Land application areas must be outside of the 1 in 20 year (5% AEP) coastal inundation areas (or equivalent).

Areas that have been previously earth worked (shown in orange in Figure 6-1 below) are considered unsuitable for wastewater disposal. This is because the soil has been densely compacted, making it difficult to adequately infiltrate treated effluent into the soil.

Based on Auckland Council Geomaps, the site gradient is largely 3% - 8%. On the south-western side, the gradient reaches up to 15% (shown in purple) and so this area has been identified as not preferred.

While there is no evidence of an incised overland flow path on the site, a portion of the site is likely to flow towards the wetland through a low section of the site. A 20 m setback has also been conservatively applied to this area as well as the wetland.

The location options for the disposal field were balanced with other architectural, traffic planning and landscaping constraints in the master planning of the school layout. Other considerations include site contouring (limiting earthworks and allowing for simple foundations), allowing for future expansion and separation between the school and potential early childhood education building. The optimal site configuration balancing these requirements led to the grey areas shown on the bulk and location feasibility plan (refer to Appendix A) as the preferred location for the wastewater disposal field and reserve areas.

Due to the site constraints and very conservative daily use per person adopted values, it is noted the entire high usage disposal field area may require splitting into two smaller disposal field areas totalling 6,300 m².

Prior to the resource consent application, it is recommended that ground investigations are undertaken to confirm infiltration and flow rates from an equivalent school are evaluated to reduce conservatism built into this assessment.

6.2.7 Reserve area

GD06 requires land to be set aside for potential use as a disposal field as a contingency. We understand that reserve areas up to 100% of the design disposal area can be required for resource consent applications. Assuming low flow usage, 100% of the design disposal area can be achieved. If high flow usage is required, there is limited space for a 100% sized reserve area, however 60% sized reserve area may be possible if required.

GD06 provides guidelines for reducing the reserve area by up to 50%, depending on the level of treatment, slope of the original field, water saving fixtures and other considerations. Auckland Council should be consulted during the resource consent process to confirm reserve requirements once further investigations are complete.

6.3 Summary

Secondary treatment of wastewater effluent is likely to be required prior to discharge to a disposal field. A disposal field will likely be accommodated within the site to support the Phase 1 school development.

The following further work is recommended to be undertaken to support the resource consent application once the designation has been approved. We envisage this work to include the following:

- Infiltration testing of the site soils.
- Boreholes to confirm ground water table level.
- Refine expected flow rates by obtaining water usage from a similar school;
- Consider water saving practices;
- Consider grey water separation;

- Determine options for secondary treatment; and
- Discuss timing of future infrastructure upgrades with Watercare and future connection opportunities.

7 Potable water and fire supply

Auckland Council Geomaps shows two public watermains near the site:

- A 225 mm diameter concrete watermain running along the eastern side of Trig Road.
- A 150 mm diameter asbestos cement watermain running along the western side of Trig Road.
- A 15 mm diameter PE water lateral line enters the site, approximately 20 m west of the southeastern site boundary.
- Three hydrants within 100 m of the site.

The locations of the pipelines are shown in Figure 7-1.



Figure 7-1 Public water supply lines (AC GIS)

MoE has advised that Phase 1 of the school development will comprise of single storey modular buildings. Once the public wastewater reticulation has been constructed and a connection is available to the site, Phase 2 of the development is intended to be constructed.

We understand that the modular buildings will be kept on-site and a new multi-storey building will be constructed to accommodate the increased master roll (1000 students).

Flow and pressure testing has not been completed on the existing network and will need to be undertaken at a future stage of the development. A fire engineer will need to provide advice on whether a sprinkler system will be required. However, we note pumps and tank storage may be required to achieve the required operating pressures.

The high use aquifer management area overlay, as per the AUP planning maps, is highlighted across the entire site. Refer to Appendix A**Error! Reference source not found.** As there is a connection to the public reticulation there is no intention to take or use groundwater for the development.

8 Utilities

Before-U-dig records have been obtained for existing network utilities in Trig Road. Refer to Appendix D for further information.

8.1 Communications

The Vodafone BeforeUDig plans show a fibre cable has been installed along the western side of Trig Road. It is unknown if a connection has been made to the site.

There is an underground communications line running alongside the southern property boundary, east of Trig Road. This network is owned and operated by Vector.

Based on site observations, three telegraph poles were identified along the Trig Road property boundary. It is likely these poles will be made redundant and removed during construction of Phase 1 of the development.

8.2 Electricity

Overhead power supply runs along the western side of Trig Road. Based on the Vector plans, there is a distribution substation opposite the site within the Ryan's Road reserve area.

8.3 Gas

The BeforeUdig inquiry received from Vector advised that there are currently no gas pipelines within the vicinity of the site.

If gas is required for the development, Vector should be contacted once the demand for the development is known to confirm the design and possibility of a new connection.

9 Summary

The findings of the infrastructure services report are summarised as follows:

- The Ministery of Education is seeking to designate the site for education purposes. It envisages that the school development will roll out in two phases, where phase 2 will be developed when public infrastructure within the area has been constructed and connections to the site are available.
- There is currently no public stormwater infrastructure servicing the site. Stormwater Management Area – Flow 1 controls are proposed to be applied to the catchment to maintain and enhance the existing stream hydrology.
- Detention of higher storm events is not proposed. This is in accordance with a draft stormwater management plan for a plan change in progress for the area.
- There is no public wastewater reticulation to the site and on-site wastewater disposal will be required for Phase 1 school development.
- Onsite wastewater disposal has been investigated for Phase 1 of the development. A treatment field to support the primary school will likely be accommodated.
- Phase 2 of the development will not be constructed until a public connection to the reticulated wastewater network is available.
- A public water supply connection is available to the site. Flow and pressure testing has not been completed on the existing network.
- There is no gas connection available to the site.
- There are power and telecommunication utility services in the vicinity of the site. The services are expected to be able to service the proposed development.

10 Applicability

This report has been prepared for the exclusive use of our client Ministry of Education, with respect to the particular brief given to us and it may not be relied upon in other contexts or for any other purpose, or by any person other than our client, without our prior written agreement.

We understand and agree that our client will submit this report as part of an application for a designation for educational purposes and that Auckland Council as the consenting authority will use this report for the purpose of assessing that application.

We understand and agree that this report will be used by Auckland Council in undertaking its regulatory functions in connection with the school development.

Tonkin & Taylor Ltd

Report prepared by:

..... Ashleigh Frew

Civil Engineer

Nicola Mannice

.....

Nicola Morrice Senior Civil Engineer

Authorised for Tonkin & Taylor Ltd by:

La Muchloon

Glen Nicholson Project Director

NMOR

\\ttgroup.local\files\aklprojects\1016524\issueddocuments\2021-06-04 civil feasibility report\20210609-1016524-civ-rpt-01 civil feasibility for 13-15 trig road, whenuapai.docx

16

Phase 1 & 2 Siting Study 1.4







Modular Buildings Conceptual PUDO including footpaths Right turn bay/flush median for entry and exit Stormwater management Area



Adjacent Road Traffic Flow: Vehicle-in Traffic Flow: Vehicle-out **Existing Pedestrian Pathways**

...

JASMAX

Prepared for Ministry of Education

Trig Road - Whenuapai B&L Siting Study

20 May 2021

Scale 1-2000 at A3

Phase 2 end state (final roll 1000).

Proposed Pedestrian Pathways (Indicative Only) Proposed Pedestrian Crossing (Raised)

Appendix B: Stormwater Management Plan

-

Stormwater contaminants from legacy document Auckland Council Technical Publication 10

Table 4-6 Industrial activity and commonly found contaminants				
Activity	Contaminant			
Wood preserving activities	Arsenic, Copper, TSS, Oil and Grease			
Industrial inorganic chemicals	Aluminium, Iron, Nitrate + Nitrite			
Plastics, synthetic resins	Zinc			
Soaps, detergents, cosmetics, perfumes	Nitrate + Nitrite, Zinc			
Agricultural chemicals	Nitrate + Nitrite, Lead, Iron, Zinc, Phosphorus			
Asphalt paving and roofing materials	TSS, Zinc, TPH			
Concrete products	TSS, Iron, pH			
Steel works	Aluminium, Zinc			
Iron and steel foundaries	Aluminium, TSS, Copper, Iron, Zinc			
Landfills	Iron, TSS, Aluminium, Cadmium, COD,			
	Copper, Cyanide, Lead, Magnesium, Nitrate + Nitrite			
Automobile dismantler yards	TSS, Aluminium, Iron, Lead, Oil and Grease, Zinc,			
and a second second solution (2010) (2010)	Cadmium			
Scrap recycling	Copper, Aluminium, Iron, Lead, Zinc, TSS, COD,			
	Cadmium, Arsenic, Magnesium, Selenium			
Fabricated metal products except coating	Iron, Aluminium, Zinc, Nitrate + Nitrite			
fabricated metal coating and engraving	Zinc, Nitrate + Nitrite			

Table 4-9 Potential contaminant removal effectiveness of stormwater management practices							
Suspended PracticeSuspended SolidsOxygen DemandTotal LeadTotal ZincTotal PhosphorusTotal Nitrogen							Bacteria
API separators	-	0	0	0	0	0	0
Extended detention dry pond	+	>	+	>	>	-	0
Wet pond	+	>	+	>	>	-	0
Constructed wetland	+	+	+	+	+	+	0
Infiltration practices	+	+	+	+	+	>	+
Revegetation	+	+	+	+	>	>	2
Sand filter	+	-	+	+	>	-	>
Biofiltration (swale, filter strip, rain garden)	+	-	+	>	-	-	0
High potential for rLow potential for re	emoval > emoval o	Moderate p Insufficient	otential for knowledge	removal	1	1	

• Stormwater management requirements

Table 11 Extract from Table 3: Stormwater Management Requirements for Subdivision and development form WP3 SMP

Component	Principle/Approach	Minimum Requirements	Desirable
Design Approach	All subdivisions and development must apply an integrated stormwater management/water sensitive design approach through all phases of development, from planning through to construction	WSD is implemented to the extent practicable across the development	
Streams/natural wetlands	Intermittent and permanent streams and natural wetlands are retained, enhanced, and protected from the adverse effects of development and stormwater runoff	The location of all intermittent and permanent streams and wetlands within a subdivision or development are to be mapped. All intermittent and permanent streams are to be retained Riparian planting is provided for all intermittent and permanent watercourses All outfalls into streams shall be protected against erosion and designed/constructed in accordance with the SWCoP	Existing barriers to fish migration are removed or mitigated in permanent watercourses Erosion protection incorporates green infrastructure where feasible Setback outfalls from edge of streams where appropriate and practicable
Hydrology	Changes to natural hydrology are minimised in areas where developments discharge to permanent or intermittent streams Aquifer recharge and stream baseflows are retained	A SMAF control is applied to the W3P area	Stormwater retention is achieved by infiltration where it is feasible to do so
Water quality	Water quality impacts on streams and the coastal environment are minimised and water quality is enhanced through development	 All new impervious areas over 1,000m2 shall be treated by a treatment device designed in accordance with TP10/GD012 Runoff from: Commercial/industrial waste storage/handling or loading/unloading areas Communal waste storage areas in apartments and multi-unit developments shall be treated by gross pollutant traps designed in accordance with GD01 unless otherwise treated by a stormwater device 	The generation and discharge of contaminants is reduced at source as far as practicable. Low contaminant building products are utilised Water quality treatment shall be achieved on site unless there is a communal device, acceptable to Council

Building roof runoff management Retention device size 95th Percentile detention device size Living 95th %ile Retention Gravel underdrain Permeable Rainwater Permeable Rainwater Pipe detention roof detention Raingarder Raingarden Roof Treatmen Volume Paving harvesting Paving harvesting storage (area storage Location volume Area volume (5mm available) (35mm runoff) rainfall depth) Length Depth Width Area Depth Area Tank size Area Depth Area Tank size No. and ø Length (m) (mm) (m²) (mm) (m²) (m³) (m³) (m³) (m) (m³) (mm) (L) (m³) (m³) (mm) (m²) (L) (m) Building 1 305 1.5 30 0.5 300 3500 305 15000 1 No. 675 30 11 --345 1.7 12 30 0.5 300 3500 345 15000 1 No. 750 30 Building 2 ----3500 340 15000 30 Building 3 340 1.7 12 30 0.5 300 ----2 No. 750 --Building 4 345 1.7 12 30 0.5 300 345 15000 3 No. 750 30 ---3500 ---Building 5 350 1.8 12 30 0.6 300 ---3500 350 ---15000 4 No. 750 30 Building 6 345 1.7 12 30 0.5 300 3500 345 15000 5 No. 750 30 ---Building 7 340 1.7 12 30 0.5 300 ---3500 340 ---15000 6 No. 750 30 330 1.7 12 30 0.5 300 3500 330 15000 7 No. 750 30 Buildina 8 ----Building 9 305 1.5 11 30 0.5 300 ---3500 305 ---15000 1 No. 675 30 Buildings 120 600 154 3005 4 No 30000 2 No. 750 3005 15.0 105 0.6 25000 154 120 Combined 2.0 3500 400 Pavillion 400 2.0 20 1.0 300 15000 2 No. 675 20 Paved surface runoff management Retention device size 95th Percentile detention device size Treatment Living 95^t Retention Gravel underdrain Permeable Permeable Pipe detention Rainwater roof Rainwater Percentile Raingarder Raingarden Raingarden Swale Volume Treatment Location Area storage Paving harvesting (area Paving harvesting storage detention (5mm volume available) volume runoff) ength Depth Width Area Depth Area Tank size Area Depth Area Tank size No. and ø Length Area Length Top width Grade (35mm (m²) (m³) (m³) (m³) (mm) (m³) (mm) (m²) (L) (m³) (m³) (mm) (m²) (L) (mm) (m) (m²) (m) (m) % (m) (m) PUDO 16.5 600 79 168.00 695 554 168 80 3.48 4 3300 116 0.009 80 0.98 695 3 No. 825 70 116.00 -Staff 4 55 37 1580 7.9 0.004 65 0.58 600 720 81.20 --720 256 81 -2 No.750 65 30 86.00 3.12 Carpark Maximum probable development of the site (70% impervious area) **Retention device size** 95th Percentile detention device size Treatment 95th Living Retentior Gravel underdrain Permeable Rainwater Permeable Rainwater Pipe detention Percentile roof Treatment Raingarden Raingarden Raingarden Swale Volume Location Area storage Paving harvesting Paving harvesting storage detention (area volume (5mm available volume runoff) Length Depth Width Area Depth Area Tank size Area Depth Area Tank size No. and ø Length Area Length Top width Grade (35mm (m²) (m³) (m³) (m³) (m) (m) (mm) (m³) (mm) (m²) (L) (m³) (m³) (mm) (m²) (L) (mm) (m) (m²) (m) (m) % 67.300 356 356 3 No.825 142 150.0 4 HCGA 7088 17.0 216 150 0.54 600 720 79 --720 1000 . 150 4.1 389 0.74 144 640 720 200 255 Other 12758 31.0 121.200 200 602 720 --1801 640 4 No.825 185.0 4.7 4

Stormwater management options summary

1016524

Concept WW Calculations

On site wastewater disposal site considerations

3.0 Land Application Method

1.0 Geotechnical Constraints

Ground water level:

Conservatively assumed

Has not been assessed it is recommended this is confirmed during preliminary design

Soil Category:

Category 4-6

Table 16: GD06 soil category description

Soil category	Soil texture [Note 1]	Soil structure [Note 2]	Typical clay content	Indicative permeability (K _{sat}) (m/d) [Note 3]
	Sandy clay loam, fine sandy	High/moderate structure	20 - 30%	0.5 - 1.5
4 clay, clay loam, silty clay loam	Weakly structured	20 - 30%	0.12 - 0.5	
	loam	Massive	25 - 35%	0.06 - 0.12
		Strongly structured	35 - 45%	0.12 - 0.5
5	Sandy clay, light clay, silty clay	Moderately structured	35 - 40%	0.06 - 0.12
Sinty Clay	Sity day	Weakly structured or massive	40 - 50%	< 0.06
		Strongly structured	40 - 55%	0.06 - 0.5
6	Clays (including swelling and grey) and hard pan	Moderately structured	>50%	< 0.06
	grogy and hard pair	Weakly structured or massive	>50%	< 0.06

Suitable disposal for category 5 Shallow irrigation systems Pressure compensating drip irrigaton (surface and subsurface) Needs secondary treatment Low pressure pipe subsurface irrigation Low pressure effluent distribution subsurface irrigation Low pressure effluent distibution surface trickle irrigation *Note shading denotes applicable use in soil type 5. However special design precautions are required in these soil conditions Concentional land application system **Conventional trenches** Shallow trenches

2.0 Land gradient

Table 18: Slope gradient limitations for various land application systems

Land application system	Slope gradient limitations*	Notes
Surface irrigation (spray, drip and low-pressure effluent distribution irrigation)	<5.7° (10%)	 Due to risks of effluent run-off during wet weather. Assumes little disturbance occurs during construction. This is limited by natural infiltration rate and even distribution.
Subsurface drip irrigation (i.e. pressure compensating drip irrigation)	<16.7° (30%)	 All irrigation lines should be installed along the land contours. If this is not possible, and if the lines have non-leak emitters, then lines may run through contour lines in accordance with the manufacturer's specifications. A copy of the specifications should be included with the system
Subsurface low-pressure effluent distribution or low-pressure pipe	<8.5° (15%)	 design for approval. Shallow and narrow trenches for low pressure effluent distribution or low-pressure pipe systems must be constructed along the contour.
Evapotranspiration beds	<5.7° (10%)	 High soil disturbance and erosion issues may arise during construction on steeper slopes.
Trenches and beds, including discharge control trenches and beds	<8.5° (15%)	 Construction becomes difficult and costly when slopes are high. High soil disturbance and erosion issues may arise during construction on steeper slopes.
Mounds	<8.5° (15%)	 High soil disturbance and erosion issues may arise during construction on steeper slopes.

All slope gradients on the proposed site appear to be less than 30%, with the majority of the site less than 10%



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PCDI

LPP
LPED
LPED

4.0 Set backs

Table 20: Minimum setback distance from edge of land application area to edge of site feature for different effluent treatment levels

Site feature	Soil category	Primary treated (septic tank + effluent filter)	Secondary treated (e.g. AWTS)	Advanced secondary (e.g. Packed bed reactor)	Tertiary (disinfection) [Note 6]	Advanced tertiary (nutrient reduction and disinfection) [Note 7]	Notes
3: Surface waters [Note 3] including streams (to top of streambank), downslope stormwater drains or downslope drainage channels, wetlands, estuaries, coastal marine area at high tide mark, dams or lakes and overland flow paths	Soil category 1 Soil category 2 Soil category 3-5 Soil category 6	[Note 5] 20 m 20 m [Note 5]	15 m 15 m 15 m 20 m	12.5 m 12.5 m 15 m 15 m	10-12.5 m 10-12.5 m 10-15 m 10-15 m	10 m 10 m 10 m [Note 9]	 Setbacks should be measured from the top edge of surface water. For steep sloping land (where only pressure compensating drip irrigation can used), additional minimum setbacks for surface waters may be needed: Add 1 m for every degree over 10° (17.6%) with no land steeper than 1 (33%) New subdivisions should have minimum setbacks of 15 m (with additional set based on gradient) [Note 4]. For coastal marine areas setback distances should be a minimum of 15 m about mean high water spring.
4a: High risk underground pipework (trenched, downslope of land application area, etc.)		10 m	5 m	3 m	2 m	1.5 m	Pipes in trenches in gravel, sand or scoria can act as a conduit for wastewater may require additional setback distances as applicable for surface water above
6: Groundwater	Soil category 1 Soil category 2 Soil category 3-5 Soil category 6	[Note 5] 1.5 m 1.2 m [Note 5]	1.5 m 1.2 m 0.9 m 0.6 m	1.2 m 0.9 m 0.6 m 0.6 m	1.0 m 0.6 m 0.6 m 0.6 m	0.9 m 0.6 m 0.6 m 0.6 m	Measured vertical distance from base of land application system (e.g. pipes or trench) to seasonal high-water table. Groundwater setbacks for subdivisions should be greater than 1 m
7: Floodplain (located outside of % AEP floodplain) [Note 8]		1%	5%	5%	5%	5%	AEP is Annual Exceedance Probability and is equivalent to: 1% AEP (one in 1 year), 5% (one in 20 year).

١	٤	3			
,	ç	2			

18°

back

ove

5.0 Maximum Occupancy

School roll information provided by the Ministry of Education

We understand the site is intended to be developed for educational purposes in two phases: Phase 1 – Overflow school to serve a shortfall in the school network capacity in Whenuapai North, Redhills and Hobsonville.

Phase 2 - School (Yrs 0-8) and Early Childhood Education (ECE) to serve the long term needs of the local adjacent school catchment as the adjacent area is live zoned and developed for urban purposes.

Based on discussions with the Ministry of Education (MOE), we understand Phase 1 of the development will include a primary school (Years 0 to 8) with a temporary master plan roll of 600 and is intended to be constructed during 2022. As there is currently no public stormwater and wastewater infrastructure in the vicinity of the site, on-site wastewater and stromwater will be required to service Phase 1. Once the public reticulation in the vicinity of the school has been confirmed and constructed, the MoE intends to construct Phase 2 of the development, expanding the master plan roll to 1000 students + ECE facility with capacity for 50 children.

The on-site wastewater calculations below are based solely on Phase 1 of the development (600 student

Phase	No. Primary Students
1	600

Assumed staff numbers (calculated based on the information provided on MoE website and tables below)

CHER

Whenuapai Campus	Staff (estimated)		
	Phase 1		
Primary	33		

The following table shows the ratios we use to calculate curriculum staffing for all schools.

TEACHER TO S	STUDENT RATIOS BY YEAR LEVELS	AND ROLL TYPE
YEAR OF SCHOOLING	MÃORI IMMERSION TEACHER TO STUDENT RATIO	NON-MÃORI IMMERSION TEA TO STUDENT RATIO
Year one	1:15	1:15
Year 2-3	1:18	1:23
Year 4-8	1:18	1:29

Year 9-10

Year 11

Year 12

above

Year 13 or

1:20

1:20

1:18

1:17

1:23.5

1:23

1:18

1:17

ROLL WEIGHTING BY YEAR LEVEL	LL WEIGHTING BY YEAR LEVEL		
YEAR LEVEL	ROLL WEIGHTING		
1-3	4.0		
4-8	3.5		
Technology education (7-8)	0.5		
9-10	7.0		
π	9.0		
12	15.0		
13+	16.0		

https://www.education.govt.nz/school/funding-and-financials/resourcing/school-staffing/entitlement-staffing/#Curr

Estimated total population of Phase 1 (students + staff)



A Design Devementers

Category	Source	Typical wastewater f	Typical wastewater flow allowance per capita		
		L/pe	rson/day		
		On-site roof water tank supply [Note 1]	Reticulated community or bore water supply		
Schools (pupils plus stat	f) [Note 10]	15 – 30	15 – 30		

10) Figures from the lower end of the range should be supported by actual water usage records. Additional allowances also need to be made in the design flows for schools that also have cafeterias (with on-site catering) and/or gyms with shower facilities.

Phase	1
Low use	9,495 L/day
High use	18,990 L/day

AUP 5.6.2.1 - Permitted activity

Ratio of site area to discharge volume must be greater than **1.5m²** per litre per day.

Proposed development si	40,469	m²	
Phase	1		
Low use	4.3 m²/L/day		
High use	2.1 m²/L/day		

Calculations indicate the AUP requirement is met.

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1016524 Concept WW Calculations



Figure 6: Conventional septic tank

Note:

Grease traps will reduce the storage required as the storage capacity should be two to three times the discharge from the kitchen. This has not been included in the concept calculation

Minimum combined total retention capacity (prior to secondary treatment) of at least 3-5days of average flow volume as per GD06 Section D1.4.2

Phase 1	m ³ /day
Daily flow (low value)	9.5
3 day volume	28.5
5 day volume	47.5
Daily flow (high value)	19.0
3 day volume	57.0
5 day volume	95.0
	-

	Phase 1 scenario N							
	Hynds concrete tank 7.6 m	l ³						
Deceden	Number of tanks (3 day design flow	v) 4						
daily flow	Number of tanks (5 day design flow	N) 7						
	Promax plastic tank 6 m	l ³						
	Number of tanks (3 day design flow	v) 5						
	Number of tanks (5 day design flow	v) 8						
	Hynds concrete tank 7.6 m	l ³						
Pacod on	Number of tanks (3 day design flow	N) 8						
daily flow	Number of tanks (5 day design flow	v) 13						
high value	Promax plastic tank 6 m	l ³						
	Number of tanks (3 day design flow	v) 10						
	Number of tanks (5 day design flow	v) 16						

TABLE 1 Septic Tanks North Island

Product Code	Description	Dim A (mm)	Dim B (mm)	Dim C (mm)	Dim D (mm)	Dim E (mm)	Mass (kg)	Load case
7600 HAMILTO	N & AUCKLAND						9.	
SEP7600T	Septic tank conc 7600L 1 chamber - no lid	2145	3240	1510	1330	1280	4260	1&2
SEP7600TFB	Septic tank conc 7600L 1 chamber, flange base - no lid	2425	3540	1510	1330	1280	5215	1&2
SEP7600L150	Septic tank lid conc 7600L 150mm thick (lid only)	2145	3240	160		-	2580	1&2



Created by: AFRE 12/02/2021 Checked: JAAH 25/02/2021

8.0 Design loading/irrigation rates

Table 42: Soil categories and recommended maximum design loading rate (DLR) or design irrigation rate (DIR) for treated wastewater land application

Soil	Soil texture	Soil texture	Soil structure		Recommended maximum design loading rate (DLR) or Design irrigation rate (DIR					Recommended maximum design loading r				ition rate (DIR) – mm/day		
category [Note 9]			permeability	Trenches [Note 7] Beds		Beds (s [Note 8] ETS b		TS beds Sub-surface and	LPED	Mounds	Bottomless				
	[Note 9]				rsar (nin uj	Primary treated effluent	Secondary treated effluent	Primary Seco treated trea effluent effl	Secondary treated effluent	and trenches	surface irrigation (e.g. PCDI)			sand filter		
	Sandy clay- loam, clay- loam and silty clay- loam	High/moderate structured	0.5 – 1.5	10	30	Not advised	Not advised	12	3.5 [Note 3]	3 Not advised 3 Note 2	Not advised	Notes:				
4		Weakly structured	0.12 - 0.5	6	20			8			 For Category 1 spile r 					
		Massive	0.06 - 0.12	4	10			5		3		If further	er groundwater protection ategory 2 soils (free to go			
	Sandy clay, non-swelling clay and silty clay	Strongly structured	0.12 - 0.5	5 [Note 2]	12 [Note 2]		dvised Not advised	8	3 [Note 3]	2.5 [Note 5]		depth of topsoil For Category 1, topsoil. PCDI (Assuming Note: AUP	psoil (minimur rry 1, 2 and 6			
5		Moderately structured	0.06 - 0.12		10 [Note 2]	Not advised		5		2.5 [Note 5]						
		Weakly structured or massive	< 0.06	Not advised	8 [Notes 2 & 6]			5 [Note 6]		2.5 [Note 5]			ng cate UP E5.6			
	Swelling clay, grey clay,	Strongly structured	0.06 - 0.5			Not advised	Not advised	Not advised	2 sed [Note 4]			(c) the la dripp but n	nd disp er irriga o greate			
6		Moderately structured	< .06	Not advised	Not advised					Not advised						
	hardpan	Weakly structured or massive	< .06	D		oodir			Annelles	dia a	Peopl leading					

9.0 Field Sizing Note field size has been calculated based on the expected waste water generated. Refer to calculation 6.0. AUP indicates PCDI is the preferred treated wastewater land application method. Based on this, only the PCDI method has been considered in the following calculations.

Areal Loading

Based on Phase 1 of the development

PCDI - Design land application area (m ²)	
Low flow	3,165 m²
High flow	6,330 m²

Areal loading typically applied for shallow irrigation systems.

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t a depth of 100-150 mm into good quality in-situ or imported topsoil of depth 250 mm

d PCDI design irrigation rate (DIR) is 5 mm/d, into 250 mm good quality topsoil. required, the DIR may be reduced to 4 mm/d or 3 mm/d, as a risk reduction measure. drainage characteristics), the drip irrigation system should be installed within an adequate of *in-situ* or imported topsoil) to slow the soakage and assist with nutrient reduction. irrigation systems should be installed at a depth of 100-150 mm, within good quality

3 mm/day

5 soil) requirements

ystem must comprise pressure compensating ith an area loading rate dependant on soil category, n 5mm/day; and
Auckland Council



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Figure 1 - Wastewater site constraints plan

S Da 2





Scale @ A3 = 1:2,500

Date Printed: 24/02/2021









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0.12km		0.15km
Legend	Pole.Location Inactive Power Underground Route.Route Active	W

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42-44 For	design purposes only, no excavation	on to take	place usi	ng these
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CARLAW WHENUAPAI NORTHCOTE FIBRE UPPER HARBOUR DRIVE ROUTE











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15 Trig Road - Overland flowpaths

0 10 20 30 Meters Scale @ A4 = 1:2,500 Date Printed: 22/01/2021





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15 Trig Road - Hydrant Plan

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15 Trig Road - Water supply

13 19.5 Meters Scale @ A4 = 1:1,000 **Date Printed:** 22/01/2021

6.5





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15 Trig Road - Wastewater

Cale @ A4 = 1:2,500 Date Printed: 22/01/2021





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15 Trig Road - Stormwater

Cale @ A4 = 1:2,500 Date Printed: 22/01/2021



Wastewater Manhole GIS ID Label (Local) Non Watercare Pipe

Wastewater Manhole GIS ID Label (Local)

Wastewater Manhole (Local)

Wastewater Manhole (Local)

Wastewater Pipe GIS ID Label (Local)

Wastewater Pipe GIS ID Label (Local)

Wastewater Pipe (Local)

- Operational
- - - Operational Not Vested
 - Abandoned / Not Operational

Wastewater Other Structure (Local)

Wastewater Other Structure (Local)

Wastewater Pump Station (Local)

Wastewater Pump Station (Local)

Wastewater Manhole (Transmission)

• Wastewater Manhole (Transmission)

Wastewater Pipe (Transmission)

- Operational
- Not Operational
- --- Proposed

DISCLAI MER:

Other Watercare Linear Assets

- Other Watercare Linear Assets

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Other Watercare Structures and Areas

Other Watercare Structures and Areas

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Rail Stations (8,000)
Rail Stations (8,000)
Railway (2,500)
≠≠≠ Railway (2.500)

Address

Auckland Council Boundary

Non Watercare Pipe

Non Watercare Structure

Non Watercare Structure

Auckland Council Boundary

Roads (2,500)

ROADCODE, STATUS

Motorway

Motorway Under Construction

Secondary Arterial Road

- Secondary Arterial Road Under Construction
 - Primary Arterial Road
- Primary Arterial Road Under Construction

Legend

- Collector Road
- Collector Road Under Construction
 - Local Road

Local Road Under Construction

Parcels

Parcels



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Natural Resources Unitary Plan Maps
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Auckland Council



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Zones and Rural Urban Boundary Unitary Plan Maps

0 10 20 30 Meters Scale @ A4 = 1:2,500 Date Printed: 13/05/2021

7



Map

Auckland Unitary Plan Operative in part 15th November 2016 - LEGEND





Precincts

· – – Rural Urban Boundary

----- Indicative Coastline [i]

	Ove	rlays	
Natural	Resources	Natural	Heritage
	Terrestrial [rp/dp]		Notable Trees Overlay
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	Quarry Buffer Area Overlay		
	National Grid Subdivision Corridor	Historic	Heritage & Special Character Historic Heritage Overlay Place [rcp/dp]
	National Grid Substation Corridor National Grid		Historic Heritage Overlay Extent of Place [rcp/dp]
	National Grid Yard Compromised Corridor Overlay		Special Character Areas Overlay Residential and Business
	National Grid Yard Uncompromised		Auckland War Memorial Museum Viewshaft Overlav [rcn/dn]
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	Sites & Places of Significance to Mana Whenua Overlay [rcp/dp]		Stockado Hill Viewshoft Overlay - 8m beight area
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	Identified Growth Corridor Overlay		Stockade Hill Viewshaft [I]
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•	General Commercial Frontage Control	\mathbf{X}	Hazardous Facilities Emergency Management
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\square	Centre Fringe Office Control	+++	Flow 2 [rp] Area Control
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Appendix H

Ground Contamination Assessment

REPORT

Tonkin+Taylor

Ground Contamination Assessment

13-15 Trig Road, Whenuapai, Auckland

Prepared for Ministry of Education Prepared by Tonkin & Taylor Ltd Date March 2021 Job Number 1016524





Exceptional thinking together www.tonkintaylor.co.nz

Document Control

Title: Ground Contamination Assessment						
Date	Version	Description	Prepared by:	Reviewed by:	Authorised by:	
March 2021	1	Final report	R. van der Krogt	N. O'Rourke	G. Nicholson	

Distribution:

Ministry of Education Tonkin & Taylor Ltd (FILE) 1 electronic copy 1 electronic copy

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- Appendix G : Regulatory framework

Executive summary

Tonkin & Taylor Ltd has been engaged by the Ministry of Education (MoE) to undertake 'high level' assessments of the civil infrastructure suitability (including on-site stormwater and sewerage treatment/discharge) and ground contamination at 13-15 Trig Road, Whenuapai. This report presents the findings of the contaminated land assessment with the civil infrastructure assessment presented in a separate report.

The approximately 4.05 hectare (ha) site is currently occupied for rural residential purposes, with a house, dilapidated shed, garden shed, and above ground pool are present at the site. We understand MoE purchased the site in 2001 and is seeking to designate the site for education purposes. The proposed development comprises facilities for a full primary school (Years 0 to 8) with a master plan roll of 600, expanding to 1,000 in the long term, and an Early Childhood Education (ECE) facility with 50 children.

Our overall conclusion is that the site is generally suitable for the proposed new development from a contaminated land perspective.

	lssue	Risk*	Summary and recommendations
Development considerations	HAIL activity	Medium	Buildings at the site were built and/or demolished during the period when asbestos and lead-based paints were in common use. It is therefore possible that these activities could be considered to be HAIL activities if contaminants are present at concentrations that pose a risk to human health or then environment.
	Ground (soil) contamination	Medium	As soil testing has not yet been undertaken a conservative approach has been taken to assess application of the NES Soil and AUP to the site and development proposal. It has been assumed for the purpose of this assessment that the use of asbestos and/or lead-based paints, and fill of an unknown origin, comprise a HAIL activity. This interpretation should be confirmed by soil testing.
	Buildings with asbestos- containing materials	Medium	As all buildings at the site were constructed pre 2000s, an asbestos demolition survey will be required to be undertaken on all buildings prior to their removal as per the Building Act 2004 and Asbestos Regulations. Given the condition of the dilapidated shed constructed with Hardiflex cladding (potentially asbestos-containing), and the broken fragments on the ground surface outside the shed, we recommend an asbestos survey is undertaken as soon as practicable to understand if there is a potential risk to the current tenants.
	Consent requirements	Medium	 In order to confirm if consent is required for future change in use or disturbance of the site: Soil testing is required to determine if contaminants (specifically asbestos and lead) are present at concentrations that pose a risk to human health or the environment; and/or The scale and duration of works should be evaluated against the permitted activity thresholds when the development details have been resolved.
	Soil re-use / disposal	Low to Medium	If topsoil is removed from site it will need to be disposed of to a facility appropriate to the contaminant content, most likely a managed fill facility that is also licensed to receive low levels of asbestos. Topsoil from parts of the site and shallow fill materials may be able to be reused on site, however, further testing would be

The table below summarises the potential contaminated land risks and should be read in conjunction with the relevant detail included in the main body of the report.

	Issue	Risk*	Summary and recommendations
			required to confirm this. Underlying natural soils are expected to comply with cleanfill criteria.
*Ratin	g is based on the prem	ise that materials	are not in poor condition and/or damaged during demolition/redevelopment works

which, should it happen, could result in increasing the potential for ground contamination. The risk assessment is indicative only and will be subject to confirmation during the design process. Items assessed as "low risk" should not be interpreted as meaning that there is "no risk".

1 Introduction

Tonkin & Taylor Ltd (T+T) has been commissioned by Ministry of Education to undertake a ground contamination desk study investigation for 13-15 Trig Road, Whenuapai referred to below as the site). The location of the site is presented below in Figure 1.1.

This report has been prepared in general accordance with the requirements for a PSI (Preliminary Site Investigation) referred to in the NES Soil regulations¹, and as outlined in the Ministry for the Environment's (MfE) Contaminated Land Management Guidelines².

The persons undertaking, managing, reviewing and certifying this investigation are suitably qualified and experienced practitioners (SQEP), as required by the NES Soil and defined in the NES Soil Users' Guide (April 2012).



This investigation was undertaken in accordance with our proposal of 25 January 2021.

Figure 1.1: Site location plan (source: LINZ)

¹ Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011.

² Ministry for the Environment, updated 2011, Contaminated land management guidelines No. 1: *Reporting on Contaminated Sites in New Zealand*.

The objective of this investigation was to assess the potential for current and past land uses at the site to have included activities that have the potential to cause ground contamination via a desktop review. The scope of work for this investigation comprised the following:

- Review of Auckland Council property files;
- Review of historical aerial photographs from Auckland Council GeoMaps and Retrolens;
- Review of certificates of title for the site;
- Review of a "Site Contamination Enquiry" from Auckland Council;
- Completion of a brief site walkover inspection;
- Preparation of a plan showing potential contaminated land constraints; and
- Preparation of this report.

This report documents our findings and comments on the potential for ground contamination at the site, in the context of the proposed development, including potential resource consent implications with regard to ground contamination.

2 Site description

2.1 Site identification

The site is located on the north eastern side of Trig Road in the suburb of Whenuapai. The site is rectangular in shape and has an overall site area of 4.05 ha. The site identification details are summarised in **Table 2.1**.

Table 2.1: Site identification

Street address	13-15 Trig Road
Legal description	Lot 5 DP 66045
Site owner	Her Majesty the Queen
Site area	4.05 ha
Zoning	Future Urban Zone

2.2 Site condition

A site walkover inspection was undertaken on 29 January 2021 by a contaminated land specialist. The purpose of the walkover was to gather general information on topography and land use (both on site and the surrounding area) as well as making observations for evidence of potential ground contamination. Relevant observations made at the time of the inspection are summarised below. Key site features are shown on **Figure 2.1** and selected photographs are included in **Appendix A**.

The property is currently used for rural residential living (currently containing a house, garden shed, dilapidated shed and aboveground pool) however a paddock also appears to have been occupied by stock at an earlier stage. The site contains the following site features:

- The topography of the site is generally undulating sloping to a low point along the southern site boundary **Photograph Appendix A.1**.
- The southwestern portion of the site (where the house and driveway access from Trig Road) is generally flat but at a higher elevation than the paddock area. The land slopes steeply to the east away from the vicinity of the house **Photograph Appendix A.2.**
- An area of bare soil was observed near the south eastern boundary no anthropogenic material or fill was observed **Photograph Appendix A.3**.
- Several buildings are present at the site and are summarised in **Table 2.2** below:

Table 2.2:	Summary of buildings present at 13-15 Trig Road
------------	---

Current building	Constructed	Building materials
House	1980	Brick and tile. Soffit boards appear to be plywood. Refer to Photograph Appendix A.4 to Photograph Appendix A.7.
Small garden shed	Not known	Galvanised iron. Refer to Photograph Appendix A.8.

Dilapidated shed	Update from aerial	Corrugated iron roof, mixture of corrugated iron, wood and potential ACM walls (Hardiflex). Wooden framing and floor. Broken cladding panels had been replaced with wooden panels. Potential ACM pieces visible on the ground. Refer to Photograph Appendix A.9 to Photograph Appendix A.16
Remnant building	1959	Inert building material (wood and steel). Refer to Photograph Appendix A.17 to Photograph Appendix A.19

- An aboveground pool was present near the house **Photograph Appendix A.9**.
- The dilapidated shed was used for storage of mattresses and other household items (gas cylinders, furniture and appliances) **Photograph Appendix A.10**.
- No chemical storage was observed during the site visit.



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Tonkin+Taylor	AERIAL PHOTO AND PROPERTY BOUNDARIES SOURCED FROM AUCKLAND	CHECKED	CYAX	Mar.21	TITLE 13 - 15 TRIG ROAD, WHENUAPAI	
www.tonkintaylor.co.nz	COUNCIL GEOMAPS, LICENSED FOR RE-USE UNDER THE CREATIVE COMMONS ATTRIBUTION 4.0 NEW ZEALAND LICENCE (CC BY 4.0). CAPTURE DATE 03/02/2021	NOR	R 09/03/2021		SITE FEATURES	
Exceptional thinking together		APPROVED	DA	TE	SCALE (A4) 1:2500 FIG No. FIGURE 2.1 REV	1

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2.3 Surrounding land use

The land uses surrounding the site are similar to the site – pastoral land with residential dwellings. During the site walkover it was noted that the site north of the site had horses and the property to the south had cattle.

2.4 Geology

The published geological map shows that the site is likely to be underlain by the Puketoka Formation. This could comprise of pumiceous deposits comprising pumiceous mud, sand and gravel with black muddy peat.



Figure 2.2: Published geology of the Whenuapai area (source: Edbrooke as per footnote³)

2.5 Hydrogeology and hydrology

There are no open watercourses on the property. Morphum Environmental⁴ has identified that a wetland extends onto the southern portion of the property from 9 Trig Road. The extent of the wetland on 13-15 Trig Road and a 10 m earthworks buffer, as applied by Morphum Environmental, are shown on **Figure 2.1**.

The Auckland GeoMaps website shows an open watercourse on 9 Trig Road, immediately south of the site. This watercourse was not observed during the site inspection as the neighbouring property was not accessed. Based on the topographical map, the watercourse appears to be a tributary to Trig Stream to the south-east of the site. Shallow groundwater is predicted to flow in a south easterly direction towards the watercourse and Trig Stream. Trig Stream flows into Waiarohia

³ Edbrooke, SW. 2001: Geology of the Auckland area. Scale 1:250,000. Institute of Geological & Nuclear Sciences Institute of Geological & Nuclear Sciences Ltd, Lower Hutt, New Zealand.

⁴ Morphum Environmental Ltd. Trig Rd ECIA. Figure dated 12 February 2021.
Stream which discharges to the Waiarohia Inlet in the Upper Waitemata Harbour approximately 2 km north-east of the site.

3 Site history

Historical information relating to the site has been collected from a variety of sources including the Auckland Council property file, contamination enquiry, certificates of title and historic aerial photographs. The history focuses on on-site activities, except for the aerial photograph review where comments are also provided on readily observable surrounding land use. The information reviewed is summarised in this section. A more detailed review of the available information is included in **Appendix B**.

In summary, the site history review identified that the site has been used for grazing land prior to the early 1930s.

Aerial photographs show that the site was not occupied by any buildings up until 1959 when a shed is visible near the northern corner of the site. This shed is visible up until the 1996 aerial. Aerial photographs also indicate the presence of horticultural activities in the adjacent (northern) property between 2000 and 2008.

Aerial photographs and building permits indicate the house at the property was built in 1980. The dilapidated shed present to the north of the house was not included within the property files, however, aerial photographs indicate it was likely present from 1980.

A review of the building plans contained within the property file did not indicate the use of asbestos containing materials (ACM) with the exception of "Fibrous plaster" which was proposed to be used in the house, refer to **Figure 2.1**.

An Auckland Council site contamination enquiry indicates that there is no information held within Auckland Council records to suggest that the site has been subject to HAIL activities.

4 Potential for ground contamination

With respect to potentially contaminating activities, the desktop review has found the following:

- The site was initially used for grazing land with an associated shed present near the northern corner from 1959 to 1996;
- The site was redeveloped for a house and shed to be built in 1980. Fill may have been used on the site during development;
- The property adjacent to the site on the northern side was used for horticultural purposes from 2000 to approximately 2008, it is possible that pesticides may have been used, however, the potential for spray drift to have contaminated the site is considered to be low;
- The house, and now dilapidated shed were built in 1980, likely during the period where lead paints and asbestos containing material (ACM) were used.

These activities all fall under potential HAIL activities. The inferred locations of these activities are presented on the site feature **Figure 2.1**. The activities, potential contaminants and an assessment of the likelihood, potential magnitude and possible extent of contamination are presented in **Table 4.1** below.

Potential contaminating activities		Potential contaminants of concern	Likelihood, magnitude and possible extent of contamination	HAIL reference
1	Horticultural activities at the adjacent northern property including the potential application of persistent pesticides;	Metals (As, Cu, Pb) and organochlorine pesticides (OCPs)	Aerial imagery indicates the property north of the site was utilised for horticultural purposes from 2000 until approximately 2008. It is unlikely that persistent pesticides were used during this time period. The potential for contamination from this source is therefore considered to be negligible.	Not a HAIL.
2	Placement of fill of unknown origin during site development	Metals, total petroleum hydrocarbons (TPH), polycyclic aromatic hydrocarbons (PAH) and asbestos.	No indication of filling was noted during the site walkover; however, filling may have occurred as part of construction of the house and surrounding landscaping in the 1980s to create a level ground surface.	Not a HAIL, unless contaminants are present at concentrations that pose a risk to human health or the environment. Then it becomes Activity I – Intentional or accidental release of contaminants.
3	Buildings constructed with ACM	Asbestos as fibres, fines or fragments.	The current buildings at the site (house and dilapidated shed) were built in 1980. This is during the time ACM were in common use. ACM were not noted to be present in the building plans for	Potentially a HAIL (Activity E1) if deteriorated asbestos products present.

Table 4.1: Potential for contamination

Pot con act	tential ntaminating :ivities	Potential contaminants of concern	Likelihood, magnitude and possible extent of contamination	HAIL reference
			the house with the exception of "Fibrous plaster". However, during the site walkover it was noted that the dilapidated shed could potentially be clad in ACM, fragments of this fibre board were also present on the ground. It is possible that asbestos was lost to ground during the construction of buildings, including burying offcuts/ waste materials, and/or by subsequent damage to or maintenance of exterior ACM cladding (e.g. sanding or water blasting for repainting). If ACM contamination occurs it is most likely to reside in the shallow soils immediately around (or beneath if buried wastes are presents) the buildings or where water runoff occurs from them.	Potentially a HAIL, Activity I – Intentional or accidental release of contaminants, If contaminants are present at concentrations that pose a risk to human health or the environment.
4	Use of lead- based paints	Lead	Structures have been present on the site when lead-based paints were in use. Damage to or maintenance of painted surfaces (e.g. sanding or water blasting for repainting) has the potential to release lead flakes or dust to ground. If lead contamination occurs it is most likely to reside in the shallow in 'halos' immediately around the buildings, unless mobilised by soil disturbance or water runoff.	Potentially a HAIL, Activity I – Intentional or accidental release of contaminants, if contaminants are present at concentrations that pose a risk to human health or the environment.
5	Former buildings constructed with lead paint or ACM	Lead, asbestos as fibres, fines or fragments.	A former shed was present near the northern corner of the site in historical aerials from 1959-1996. During the site inspection remnant inert building materials (wood and steel) were observed in the vicinity of this location. We recommend soil testing to confirm no contamination is present in this area.	Unlikely to be a HAIL. Potentially Activity I - Intentional or accidental release of contaminants, if contaminants are present at concentrations that pose a risk to human health or the environment.

5 Preliminary conceptual site model

A conceptual site model as defined by the MfE in the contaminated land management guidelines, sets out known and potential sources of contamination, potential exposure pathways, and potential receptors. For there to be an effect from the proposed activity there has to be a contamination source and a mechanism (pathway) for contamination to affect human health or the environment (receptor).

The source-pathway-receptor conceptual site model based on the findings of the desktop review is outlined below.

Sources:

- Placement of fill during site development;
- Buildings containing ACM; and
- Buildings constructed with other potentially contaminating materials (e.g. lead-based paints).

Receptors:

- People current residents and workers, adjacent site workers, disposal site operators (if soil is removed as part of any development works), the general public and future users of the site; and
- Environment ecological receptors at stormwater and groundwater discharge points (Trig Stream and the Waitemata Harbour), and those at disposal destinations if they are not appropriate for the type of material.

Exposure pathways by which the source material can affect the receptors are:

- Direct contact by current residents –The extent of the contamination and likely exposure of this receptor to the contamination would need to be evaluated to assess the potential risk. Given the condition of the dilapidated shed constructed with Hardiflex cladding (potentially asbestos-containing), and the broken fragments on the ground surface outside the shed, we recommend an asbestos survey is undertaken as soon as practicable to understand if there is a potential risk to the current tenants;
- Direct contact by future site users There is a potentially complete pathway if no mitigation is undertaken (e.g. soil removal or capping). The extent of the contamination and likely exposure of this receptor to the contamination would need to be evaluated to assess the potential risk and to inform the extent of mitigation required (if any);
- Direct contact by workers at the property and workers undertaking development or maintenance works The extent of the contamination and likely exposure of this receptor to the contamination would need to be evaluated to assess the potential risk;
- Direct contact by the public offsite during any offsite transport/ disposal of contaminated material Pathway incomplete as controls can be implemented to manage the material appropriately. The regulatory implications for soil disturbance are discussed in Section 6;
- Inhalation via dust of onsite workers, neighbours and future site users Pathway incomplete if appropriate controls are put in place during construction works; and
- Migration to the environment via sediment entrainment in stormwater onsite or at a disposal site – Pathway incomplete if appropriate controls are put in place during any future soil disturbance.

6 Development implications

6.1 Regulatory implications

The following section summarises the regulatory implications associated with the contamination conditions identified at the site. The regulatory framework and its application to the site is set out in detail in **Appendix G.**

A plan showing the major contamination constraints for the site is presented in **Figure 6.1**. This assessment has only identified sources of ground contamination that are typical in residential settings. As a result, except where asbestos controls are required to be implemented, only standard health and safety and environmental controls (i.e. typical earthworks control measures) are expected to be required during any future excavation/soil disturbance works. However, we recommend that this interpretation is confirmed by soil sampling.

As described in **Section 6.1.3**, asbestos in the existing buildings/structures and any associated soils will need to be managed and removed in accordance with the Asbestos Regulations.

If offsite disposal of surplus spoil is required it is likely that topsoil and fill materials (if not reused on site) derived from the vicinity of existing or former structures/buildings will need to be disposed to managed fill, material containing elevated concentrations of asbestos will need to be disposed of to landfill, incurring additional costs. Currently Ridge Road Quarries and EnviroFill South operate the only managed fill facilities in the region that can receive low level asbestos contaminated wastes. As future access to these facilities cannot be guaranteed it would be prudent to assume that surplus spoil containing asbestos may need to be disposed of to landfill.

If soils containing contamination are proposed to be reused on site controls such as encapsulation beneath buildings or pavement maybe required, depending on the level of contamination, but especially for asbestos.



Tonkin+Taylor AERIAL PHOTO AND PROPERTY BOUNDARIES SOURCED FROM AUCKLAND COUNCIL GEOMAPS, LICENSED FOR RE-USE UNDER THE CREATIVE COMMONS ATTRIBUTION 4.0 NEW ZEALAND LICENCE (CC BY www.tonkintaylor.co.nz 4.0). CAPTURE DATE 03/02/2021

DRAWN	RBS	Feb 21	TROOLOT	PRELIMINART SHE INVESTIGATION
CHECKED	CYAX	Mar.21	TITLE	13 - 15 TRIG ROAD, WHENUAPAI
NOR	00/00/0004			CONTAMINATION CONSTRAINTS
NOR	09/0	J3/2021	SCALE (AA)	
APPROVED	D	ATE	SUALE (A4)	1.2500 FIGURE 6.1

Exceptional thinking together

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6.1.1 NES Soil

As described in **Section 4**, buildings at the site were built and/or demolished during the period when asbestos and lead based paints were in common use, and filling may have occurred during site development. It is therefore possible that these activities could be considered to be HAIL activities if contaminants are present at concentrations that pose a risk to human health or the environment. As soil testing has not yet been undertaken a conservative approach has been taken to assess application of the NES Soil to the site and development proposal. It has been assumed for the purpose of this assessment that the use of asbestos and/or lead based paints, and the filling, comprise a HAIL activity. This interpretation should be confirmed by soil testing.

In summary, this assessment indicates that consent under the NES Soil:

• May be required for change in use or soil disturbance of the site.

In order to confirm if consent is required for future change in use or soil disturbance of the site:

- Soil testing is required to determine if contaminants (specifically asbestos, metals and PAHs) are present at concentrations that pose a risk to human health or the environment; and/or
- The scale and duration of works should be evaluated against the permitted activity thresholds when the development details have been resolved.

Council ordinarily requires that a Site Management Plan (SMP) be provided in support of any consent application.

6.1.2 AUP

The contaminated land rules are set out in Section E30 of the AUP. Council applies them to activities involving soil disturbance or site redevelopment. On this basis we expect that consent under Section E30 of the AUP will only be required on the same basis as under the NES Soil i.e.:

• May be required for change in use or soil disturbance of the site.

6.1.3 Asbestos Regulations

Due to the potential presence of asbestos in the buildings an asbestos demolition survey will be required to be undertaken prior to their removal. Removal of asbestos from the existing structures will likely need to occur under the supervision of an appropriately licensed removalist (since the asbestos cladding exceeds 10 m² in area). We recommend that the removalist also addresses any localised contamination around and beneath the buildings (if any), in accordance with Asbestos Regulations and Asbestos-in-Soil Guidelines, at the time of demolition. The removalist is likely to need to prepare an Asbestos Removal Control Plan and any localised soil removal requirements can also be addressed by this process.

We consider that the Asbestos Regulations provide the best regulatory vehicle for addressing localised soil contamination associated with removal of asbestos from buildings and this matter should therefore not be a trigger for consent under the NES Soil. Nevertheless, we note that Council may take a different view.

6.2 Construction implications

This assessment has only identified sources of ground contamination that are typical in residential settings. As a result, except where asbestos controls are required to be implemented, only standard health and safety and environmental controls (i.e. typical earthworks control measures) are expected to be required during any *f*uture excavation/soil disturbance works. However, we recommend that this interpretation is confirmed by soil sampling.

As described in **Section 6.1.3**, asbestos in the existing buildings/structures and any associated soils will need to be managed and removed in accordance with the Asbestos Regulations.

If offsite disposal of surplus spoil is required it is likely that topsoil and fill materials (if not reused on site) derived from the vicinity of existing or former structures/buildings will need to be disposed to managed fill, material containing elevated concentrations of asbestos will need to be disposed of to landfill, incurring additional costs. Currently there are two managed fill facilities in the region able to receive low level asbestos contaminated wastes. As future access to this facility cannot be guaranteed it would be prudent to assume that surplus spoil containing asbestos may need to be disposed of to landfill.

If soils containing contamination are proposed to be reused on site controls such as encapsulation beneath buildings or pavement maybe required, depending on the level of contamination, but especially for asbestos.

7 Summary and conclusions

Tonkin & Taylor Ltd has been commissioned by the Ministry of Education to undertake a ground contamination assessment for 13-15 Trig Road, Whenuapai. The objective of this investigation was to investigate the site history and assess whether any HAIL activities have occurred on the site, as well as the likely contamination potential as a result of such activities. The main findings of this study are:

- The site history review identified that the land has been predominantly used for grazing purposes since at least the 1930s.
- The property was developed for residential purposes in 1980.
- In summary, this assessment has identified that the site has only been used for rural residential purposes since its development. Buildings at the site were built and/or demolished during the period when asbestos and lead-based paints were in common use, and filling may have occurred during site development. It is therefore possible that these activities could be considered to be HAIL activities if contaminants are present at concentrations that pose a risk to human health or then environment. However, no evidence has been identified to suggest that contamination conditions should be materially different from those which would be encountered on any residential properties of similar age and building types.
- As soil testing has not yet been undertaken a conservative approach has been taken to assess application of the NES Soil and AUP to the site and development proposal. It has been assumed for the purpose of this assessment that the use of asbestos and/or lead-based paints comprises a HAIL activity. But this interpretation should be confirmed by soil testing. In summary, this assessment indicates that consent under the NES Soil and contaminated land rules of the AUP:
 - Should not be required for subdivision of the site; but
 - May be required for change in use or soil disturbance of the site.
- In order to confirm if consent is required for future change in use or soil disturbance of the site:
 - Soil testing is required to determine if contaminants (specifically asbestos, metals and PAHs) are present at concentrations that pose a risk to human health or the environment; and/or
 - The scale and duration of works should be evaluated against the permitted activity thresholds when the development details have been resolved.

Council ordinarily requires that a SMP is provided in in support of any consent application.

- Due to the potential presence of asbestos in the buildings an asbestos demolition survey will be required to be undertaken prior to their removal. Given the condition of the dilapidated shed constructed with Hardiflex cladding (potentially asbestos-containing), and the broken fragments on the ground surface outside the shed, we recommend an asbestos survey is undertaken as soon as practicable to understand if there is a potential risk to the current tenants.
- Removal of asbestos from the existing structures will likely need to occur under the supervision of an appropriately licensed removalist (since the asbestos cladding exceeds 10 m² in area). We recommend that the removalist also addresses any localised contamination around and beneath the buildings (if any), in accordance with Asbestos Regulations and Asbestos-in-Soil Guidelines, at the time of demolition. The removalist is likely to need to prepare an Asbestos Removal Control Plan and any localised soil removal requirements can also be addressed by this process.

We consider that the Asbestos Regulations provide the best regulatory vehicle for addressing localised soil contamination associated with removal of asbestos from buildings and this matter should therefore not be a trigger for consent under the NES Soil. Nevertheless, we note that Council may take a different view.

- Except where asbestos controls are required to be implemented, only standard health and safety and environmental controls (i.e. typical earthworks control measures) are expected to be required during any future excavation/soil disturbance works. However, we recommend that this interpretation is confirmed by soil sampling.
- If offsite disposal of surplus spoil is required it is likely that topsoil and fill materials (if not reused on site) derived from the vicinity of existing or former structures/buildings will need to be disposed to managed fill, material containing elevated concentrations of asbestos may need to be disposed of to landfill, incurring additional costs.
- If soils containing contamination are proposed to be reused on site controls such as encapsulation beneath buildings or pavement maybe required, depending on the level of contamination, but especially for asbestos.

8 Applicability

This report has been prepared for the exclusive use of our client the Ministry of Education, with respect to the particular brief given to us and it may not be relied upon in other contexts or for any other purpose, or by any person other than our client, without our prior written agreement.

Tonkin & Taylor Ltd

Environmental and Engineering Consultants

Report prepared by:

Authorised for Tonkin & Taylor Ltd by:

Rebecca van der Krogt Contaminated Land Consultant

Auch loor

Glen Nicholson Project Director

Report reviewed by:

Natalie O'Rourke Contaminated Land Consultant

8-Mar-21

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Appendix A: Site photographs



Photograph Appendix A.1: The topography of the site is generally undulating sloping towards the southern boundary.



Photograph Appendix A.2: The house is at a higher elevation than the paddock area. The land slopes steeply to the east away from the vicinity of the house.



Photograph Appendix A.3: Area of bare soil was observed near the south eastern boundary – no anthropogenic material or fill was observed.



Photograph Appendix A.4: Front of house off Trig Road.



Photograph Appendix A.5: Close up view of the front of the house.



Photograph Appendix A.6: View along the side of the house.



Photograph Appendix A.7: View along the back of the house.



Photograph Appendix A.8: Garden shed.



Photograph Appendix A.9: House to the left, above ground pool in centre, dilapidated shed in rear right and garden shed front right.



Photograph Appendix A.10: Inside view of dilapidated shed. Wooden framing and floor present.





Photograph Appendix A.13: Entrance way to dilapidated shed (left) garden shed located on the right. Broken pieces of potential ACM material visible on the ground.



Photograph Appendix A.14: Broken pieces of potential ACM.





Photograph Appendix A.17: Remnant building material (wood and steel) was present in the vicinity of the location of a shed visible in a 1959 aerial.



Photograph Appendix A.18: Remnant building material (wood and steel) was present in the vicinity of the location of a shed visible in a 1959 aerial.



Historical information relating to the site has been collected from a variety of sources. The information presented documents on-site activities, except for the aerial photograph review where comments are also provided on readily observable surrounding land use. The information that has been reviewed is summarised in this appendix.

B1 Certificates of title

Current and historical certificates of titles for the site have been reviewed. A summary of the information reviewed is presented below.

- 15 December 1934 The property was seized from Sager Owen Midgley, Hobsonville farmer. Following this several transfers of mortgages were made.
- 12 December 1966 The certificate of title was transferred to J.L Midgley Co Limited and mortgaged to Thomas Latimer Midgley
- 6 July 1992 The property was leased to Her Majesty the Queen for education purposes for a term of 20 years.
- 24 February 2005 The property 4.0469ha is acquired for a state school by the Crown.
- 09 March 2005 A new certificate of title is issued for the property with the registered owners listed as "Her Majesty the Queen".

A copy of the current certificate of title is provided in Appendix C.

B2 Historical aerial photographs

Historical aerial photographs were obtained from Retrolens and Auckland Council GeoMaps website and are presented in this Section. Relevant features of the site and surrounding land are summarised from each aerial photograph in Appendix B Table 1.

Appendix B Table 1:	Summary of aerial	photograph review
Appendix D Table 11	eannary er aena	piloto Bi apili i criett

Date, run number and source	Key site features	Surrounding land features
1940 - Retrolens	The property appears to be used for agricultural purposes such as grazing.	The surrounding land largely appears to be used for agricultural purposes such as grazing.
1950 - Retrolens	No significant changes observed.	No significant changes observed.
1958 - Retrolens	Two white structures/objects are visible at the site, both are located in the north western quarter of the site.	No significant changes observed.
1959 - Retrolens	A shed is visible near the western corner of the site, two other objects/ structures are visible to the south of this shed. The hedging running through the property appears to be sparser.	Increased development on the southern side of Trig Road south of the site.
1963 - Retrolens	The shed present in the previous aerial is still visible at the site.	Increase in residential development occurring south of the site near the corner of Trig Road and Hobsonville Road.
1969 - Retrolens	The shed present in the 1959 aerial is still visible at the site an object/structure	Increase in shelter belt hedging in the surrounding properties.

Date, run number and source	Key site features	Surrounding land features
	is visible to the south east of the shed. appears to have been removed.	
1972 - Retrolens	The shed first present in the 1959 aerial is still present. The hedging travelling across the property from the northwest side in a south east direction has been removed.	Increase in residential development along Fred Taylor Drive to the west.
1980 - Retrolens	The hedging travelling across the property from the north side in a southern direction has been removed. It appears as though earthworks have occurred in the vicinity of where the house is currently located in the present day. The aerial is of low quality thus it is difficult to determine if the house is present.	Increase in residential development along the southern side of Hobsonville Road south of the site.
1988 - Retrolens	No significant changes observed.	No significant changes observed.
1996 – Auckland Council	The shed first present in the 1959 aerial is no longer present. The house is confirmed to be present near the northwest corner of the property. North of the house there appears to be a grass driveway area. East of the house appears to be a large shed. A potential shed/ unknown white object is present approximately 70 meters north east of the house.	Appears to be horticultural activity present approximately 250 meters north east of the site. The neighbouring property at the northern corner of the site appears to be occupied.
2000 – Auckland Council	Hedging present north east of the house.	The property adjacent on the northern side appears to be occupied for horticultural purposes to large warehouse/ potential glasshouses are present, a sediment pond is also present.
2001 – Auckland Council	No significant changes observed.	No significant changes observed.
2003/04 – Auckland Council	It appears as though the front half of the property is used separate from the back half (visible difference in grass colours).	Horticultural use at the property to the north appears to have reduced.
2006 – Auckland Council	A bare patch of grass is visible along the southern boundary of the site. This bare patch of grass is present to this day. An increase in trees/ vegetation is visible south of the house.	Horticultural use at the property to the north appears to have reduced further.
2008 – Auckland Council	No significant changes observed.	No significant changes observed.
2010/11 – Auckland Council	No significant changes observed	SH18 is under construction approximately 170 meters north west of the site.
2012 – Auckland Council	No significant changes observed	SH18 appears to be almost complete.

Date, run number and source	Key site features	Surrounding land features
2015/16 – Auckland Council	No significant changes observed	SH18 is complete.
2017 – Auckland Council	No significant changes observed	No significant changes observed

B3 Council property file review

The Auckland Council property files for the site were reviewed on 15 February 2021. The key findings from the property file review are summarised below, and selected documents are included in Appendix E.

- Building plan for house dated 14 March 1980. The construction materials listed on the building plan include stone veneer, timber and concrete tiles. No mention of ACM.
- Letter dated 25 July 2001 from Waitakere City Council to Han-Yul Cho authorising building work detailed in the LIM report. Attached to the letter are several documents:
 - Building permit dated 27 March 1980 for dwelling at 13-15 Trig Road.
 - Building permit dated 27 March 1980 for dwelling at 11 Trig Road.
 - Building permit application dated 27 March 1980. The owner of the section is listed as "Crosby Properties Limited".
 - Memorandum dated 1 April 1980 from Waitemata City Council stating the vehicle crossing installed is not satisfactory.
 - Letter dated 14 December 1973 from City of Waitemata "TO THE RATEPAYER". The letter indicates a change of bags to be used for refuse collection.
 - Letter dated 26 March 1980 from the City Inspector regarding the requirement for a vehicle crossing at the site.
 - Memorandum dated 24 March 1980 from Waitemata City Council indicating the cost to an initial a sealed vehicle crossing.
 - Memorandum dated 19 March 1980 from Waitemata City Council querying the cost of providing a vehicle crossing at Lot 5 DP66045.
 - Engineers report dated 12 March 1980 for Lot 5 DP66045.
 - Letter dated 20 February 1980 indicating the building permit proposal fails to comply with the 9.1 meter front yard required under the sites Rural A zoning.
 - Building specifications undated for the erection of a residence at Hobsonville for Mr and Mrs P. Hawkins. No use of ACM were noted with the exception of "Fibrous plaster".
- Letter dated 15 November 1999 from Waitakere City Council to Dianne Gail Hawkins and Philip Victor Hawkins regarding consent application number RMA992188. Attached to the letter are several documents:
 - Non-complying activity report date 7 October 1999 issued by City of Waitakere District Plan.

B4 Council contamination enquiry

A contamination enquiry was placed with Auckland Council on 4 February 2021. The information provided is included in Appendix F and states that there is no information held within Auckland Council records to suggest that the site has been subject to HAIL activities.

Resource consents related to the site or properties immediately surrounding the site (including existing, superseded and surrendered consents) are summarised in Appendix B Table 2 below. The majority of consents identified are considered unlikely to have resulted in soil contamination at 13-15 Trig Road. This is because of their location, distance and/or nature.

One pollution incident was noted as part of the enquiry relating to rotting pig pasture run-off into a stream at 17 Trig Road.

Location	Type of consent	Activity description	Holder/ Consultant	Status
19 Trig Road, Hobsonville	Take	To take groundwater for irrigation.	-	Withdrawn
23-25 Trig Road, Whenuapai	Bore	To authorise the construction of 56 bores for a new motorway development.	NZ Transport Agency/ Maunsell Limited	Expired
Watercare Services (location not specified)	Bore	To authorise the construction of 15 bores for geological, geotechnical and groundwater purposes.	Tonkin & Taylor Limited	Assessment completed
Trig Road, Whenuapai	Bore	Authorize the construction of a bore for the extraction of groundwater for stock and domestic supply	Jyh Huang	Expired

Appendix B Table 2: Ground contamination related resource consents



RECORD OF TITLE UNDER LAND TRANSFER ACT 2017 GAZETTE NOTICE Search Copy



Identifier	192542	
Land Registration District	North Auckland	
Date Registered	09 March 2005 09:00 am	

Prior References NA21C/1295

Туре	Fee Simple	Instrument	GN 6339011.4	
Area	4.0469 hectares more or less			
Legal Description	Lot 5 Deposited Plan 66045			
Purpose	State School			
Registered Owners Her Majesty the Queen				

Interests

Extract from New Zealand Gazette, 24/2/2005, No. 41, p. 1064

Land Acquired for State School-Trig Road, Hobsonville

Pursuant to section 20 of the Public Works Act 1981, and to a delegation from the Minister for Land Information, Stephen Robert Gilbert, Land Information New Zealand, declares that, agreements to that effect having been entered into, the land described in the Schedule to this notice is hereby acquired for a state school and vests in the Crown on the date of publication of this notice in the New Zealand Gazette.

North Auckland Land Registry—Waitakere City Schedule

Area ha

4.0469 Lot 5, DP 66045, all Computer Freehold Register NA21C/1295.

Description

Dated at Christchurch this 22nd day of November 2004.

S. R. GILBERT, for the Minister for Land Information. (LINZ CPC/1999/3753)

ln1034





COMPUTER FREEHOLD REGISTER UNDER LAND TRANSFER ACT 1952 Historical Search Copy



Identifier Land Registration District North Auckland Date Issued

NA21C/1295 26 November 1971

Cancelled

NA578/66		
Estate	Fee Simple	
Area	4.0469 hectares more or less	
Legal Description	Lot 5 Deposited Plan 66045	

Original Proprietors

Prior References

Han-Yul Cho and Myung-Sook Cho

Interests

C391993.1 Lease of (part) being Lot 1 Plan 151674 to Her Majesty the Queen for education purposes Term for 20 years less 1 day commencing on 1st January 1992 - 6.7.1992 at 2.24 pm

Fencing Covenant in Transfer C877701.4 - 15.8.1995 at 11.51 am

Land Covenant in Transfer C877701.5 - 15.8.1995 at 11.51 am

D109380.1 Mortgage of Lease C391993.1 to The National Bank of New Zealand Limited - 18.2.1997 at 11.48 am

D561489.1 CAVEAT AGAINST PART LOT 1 DP 151674 BY PHILIP VICTOR HAWKINS AND DIANNE GAIL HAWKINS - 29.11.2000 AT 10.20 AM

6170100.1 Compensation Certificate pursuant to Section 19 Public Works Act 1981 - 5.10.2004 at 9:00 am

6339011.1 Discharge of Compensation Certificate 6170100.1 - 9.3.2005 at 9:00 am

6339011.2 Withdrawal of Caveat D561489.1 - 9.3.2005 at 9:00 am

6339011.3 Discharge of Mortgage D109380.1 - 9.3.2005 at 9:00 am

6339011.4 Gazette Notice (NZ Gazette, 24.2.2005, No.41, p. 1064) acquiring all of the land herein (4.0469ha) for a state school and vesting the same in the Crown on 24.2.2005 - 9.3.2005 at 9:00 am

6339011.4 CT 192542 issued - 9.3.2005 at 9:00 am

CANCELLED.

Land and Deeds 69 References Prior C/T 578/66 1299 Transfer No. REGISTER N/C. Order No. A603074 CERTIFICATE OF TITLE UNDER LAND TRANSFER ACT one thousand nine hundred and seventyone int of NORTH AUCKLAND This Certificate dated the 26th day of November under the seal of the District Land Registrar of the Land Registration District of MIDGLEY WITNESSETH that T.L. MINORIFY CO. LIMITED at Auckland is seised of an estate in fee-simple (subject to such reservations, restrictions, encumbrances, liens, and interests as are notified by memorial underwritten or endorsed hereon) in the land hereinafter described, delineated with bold black lines on the plan hereon, be the several admeasurements a little more or less, that is to say: All that parcel of land containing 10 acres more or less being Lot 5 on Deposited Plan 66045 part Allotment 45 Parish of Waipareira. CTFell 14:4.92 +66 District Land Registrar ORTH AU METRIC AREA IS 23807 Conversion Factors: A192450 Mortgage (10 Thomas Latimer Midgley $1 \, \text{Acre} = 4046 \, \text{m}^2$ 12112 1 Perch = 25.29m² (Midneleys 1955 at 1.31 oc. as varied. A 1 Link = .2012 metres 2.55 oc. and 22.1001 D.L.R. 23807 X Waitemata S.D. FAJ 232996.2 Transfer to Mara Investments Limited - 265 at 11.39 o'c. A.L.R. age oto T. o T. L. Midgley 1973 at 11.39 996. ar80 A.L.R. 073004.1 Transfer to Chatswood Estate Limited at Lower Hutt - 23.8.1974 at 2.04 o A. L. R. 5 908832.1 Transfer to Crosby's Properties 10-0-00 Limited at-Auckland - 14.1.1980 at 11.27 o'c è, G 600.0 Fencing covenant in Transfer 908832.1 1295 908832.2 Mortgage to Chatswood Estate Limited - 24.1,1980 ' c Scale: 1 inch = 6 chains.JM. Ho Plan 151674 Lodged 25.5.92 Register copy for L. & D. 69, 71, 72

21 4/1295 - D.109380.1 Mortgage of Lease C.391993:1 to The National Bank of New Zealand Limited -C.391993.1 Lease of (part) being Lot 1 18.2.1997 at 11.48 o'c Plan 151674 (computed plan) to Philip Victor Hawkins and Dianne Gail Hawkins for the term of 20 years less 1 day commencing on 1st January 1992 - 6.7.1992 at 2,24 oc 1 Merry A.L.R. D561489.1 CAVEAT AGAINST PART LOT I DP 151674 BY PHILIP VICTOR HAWKINS AND DIANNE DEVELOPMENTS C.637043 GAIL HAWKINS. 07 o'c LIMITED 29.11.2000 at 10.20 for RGL Mertificate under D636168.1 Compense ks Act 1981 by Her Section 19 Public Majesty The Quee C.646081 30.8.2001 at 3.2 DEVELOPMENTS LIMITED 00 D666609.2 Gazette Notice (NZ Gazette A.L.R. 13.12.2001 No. 170 p.4188) acquiring C.877701.3 Transfer to Wickham all Lease C391993.1 for education Developments Limited at Hamilton purposes and vesting in the Crown 15.8.1995 at 11.51 oc 17.12.2001 at 2.12 for RGL C.877701.4 Transfer to Robert Bryan Latham Wickham of Matiere farmer 15.8.1995 at 11.51 oc Fencing covenant in Transfer C.87 701.4 L. R Land covenant in Transfer C.877701.5 C.877701.5 Transfer to Wickham Developments Limited at Hamilton 15.8.1995 at 11.51 oc . R. C.877701.6 Mortgage to Knight Coldicutt Solicitors Nomines Rompany Limited -15.8.1995 6877701.6 olicitory. 15-2-1995 C.926175.1 CAVEAS HAN-YHE CHO AND MYUNG-SOOK CHO -11.17 o'c 28 at A.L.Ŕ D.020515.3 Transfer to Man-Yul <u>Cho</u> businessman and Myung-Sooy businessyoman both of Auckland - 16.7.1996 at 3.02 oc A.L.R.

REGISTER [Land and Deeds-104. NEW ZEALAND. Land Transfer (Compulsory Registration of Titles) Act, 1924. MADN C Reference Deeds Index. 21A. 30 Vol. 578 , folio .66 23165^C Application No. CERTIFICATE OF TITLE UNDER LAND TRANSFER ACT. LIMITED AS TO PARCELS This Certificate, dated the _____ fifteenth__ __ day of ___ December . one thousand nine hundred and thirty four under the hand and seal of the District Land Registrar of the Land Registration District of_ AUGHLACTD ____ Witnesseth that SAUER OWES VIDGLEY of Hobsonville farger C is seised of an estate in fee-simple (subject to such reservations, restrictions, encumbrances, liens, and interests as are notified by memorial under written or endorsed hereon, subject also to any existing right of the Crown to take and lay off roads under the provisions of any Act of the General Assembly of New Zealand) in the land hereinafter described, as the same is delineated by the plan bereon bordered _______, be the several admeasurements a little more or less, that is to say : All that parcel of land containing _____eighty sores more or less being allotment 45 of the__ Parian of Vaicareira. TEEDT D -7 EC adams С. his certificate of title has ceased to be limited as to title. Entered 28-8-1952 ABBIStant District Land Registrar. Outatanding Interest registered in the Deeds Relister METRIC AREA 15 32. 3748ha Office at Auckland: 0.202) Bager Oren Midgley to Encumbrance No. 371973 3148 1 aret lid ley, Celany 3 830 TO Plan 0.000 660 4-54 12 Encored 28/8/15 52 Transfer 513568 - Own Widgier 80-0-00-0 1-1-03.0.A 224669 78-2-37-0 373918 1 #GE Duren DISC! 23/8/1052 -al Wariation of Terms of Hortgage 3732 Produced 1/ 12 /133 at 12 0' cleak You alin 1 Variation of Terms of Mortgage 3732/P Broduced 29/4/25, at 125 o'clock Childantindg R. L. R.

X 578 REGISTER é Variation Froduced & 5 1956: -32-0' clock 7 aling L. Ba Variation of J ontjäge 373218 Produced 13 a! 10 3 ∂£ A . L. gago 373218 Variation of Terms of Yor Troduced 22/ 9/158 at Yort 5 Lo' clock ÷. Huin MP (F A192449 Transfer to J.L. Midgela Anck land. Preduc 31 12 12 1966 Listilly A192450 Mortgage to Thomas Latim Midgley . Preduced 12 12 1966 1. A.P. Togethe Notice pros A.224669 po 31.5.1967 21 9.0 <u>\$</u>L he Lu Indys Variation of Terms of Surviga A192450 70 0 5 in - 4 - 1939 at 2.5 150 14 A.L.R. THIS REPRODUCTION (ON A REDUCED SCALE) CERTIFIED TO BE A TRUE COPY OF THE ORIGINAL REGISTER FOR THE PURPOSES OF SECTION 215A LAND TRANSFER ACT 1952, L. Gtterman D.L.R. Variation of Terms of Mortgage A192450 - 22/10.1970 at 12.00 o'c. mm MisA.L.R. 1 2440 A603074 ancelled ar to 1015 -9,13, Plas66046 ١ sou. 0 C $\mathcal{T}_{\mathcal{C}}$ AUZ 26.11.19471 2380 21<u>c/1291</u> 1303 . Cancelle W Bert
THE REAL PROPERTY OF

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Waitakere City Council Te Taiao o Waitakere Waitakere City Council Civic Centre 6 Waipareira Ave Waitakere City Telephone 09 836 8000

Facsimile 09 836 8001 DX CX 10250 Auckland Mail Centre Email: info@waitakere.govt.nz

Refer:

Private Bag 93109 (Regulatory Services)^{enderson} Waitakere City Extension No. (Civic Centre): 8602

Han-Yul Cho C/- Tae Wok Kwon PO Box 5678 Wellesley Street Auckland

25TH July 2001

Dear Sir/Madam,

<u>RE: 15 TRIG ROAD WHENUAPAI</u> <u>LEGAL DESCRIPTION: LOT 1 DP 151674</u> <u>NO RECORDS OF INSPECTIONS: BP/CONSENT 80014042 DWELLING</u>

The building work detailed in the LIM report has been authorised. However inspection records/ kept by the previous local authority do not indicate sufficient or any progress inspections on this building work. As such, there being no basis or plans available on which to assess or undertake a final inspection, Council does not further inspect in these instances.

Yours faithfully

L. NACEY LAND INFORMATION CLERK

COPY TO:- Port Glen Consultancy Limited Att: Wendy Morrice PO Box 300-272 Albany

Roll No. / /	CITY OF	WAITEMATA	
32700/605	BUILDING PERA	AIT	Nº 14042
Owner of Section Address	CROSBY PROPERTIES Trig Rd, Whenuape	5 LIMITED, 31.	Date 27th March 1980
THIS PERMIT is granted t	to the undermentioned person aut	thorising the following buildi	ng work on Lot No.5 D.P.66045
on	13-15 Trig Road, WIL	INUAPAI. in	accordance with the plans lodged and
subject to the following co	^{nditions:} 1) To notations (in conjunction with	on plans. 2) Engineer the permit drawings.	s calculations to be read
Nature of proposed work			
JOHN ALDA R.D.2. KI	DWELLING MEU.	Value of work, \$60, D.&.P.\$2,000 Fee \$ 140 0:0 For the W	000 Rec. No. E002 18/2/1980 Vaitemata City Council
FOR FURTHER CONDIT	TIONS SEE OVER	ŗ	Duly Authorised Officer.

Unity Press 50659/79

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No and a transfer of a

主がい ちちつ ひょうし むしろい the second of the second second second Building Inspected. Date Insp. Intls. 4/50 Fritings on وه در هر ا Torrelation to be installed. The Final Inspection . Inspector Concernant and the second Register Noted. Date

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CITY	ŐÊ	WAITEMATA

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Roll No. / /			
32700/605	BUILDING PE	RMIT N	<u>9</u> 14042
Owner of Section Address	CROSBY PROPERT Trig Rd. Whenu	les linited, I	Date 27th March 1980
THIS PERMIT is grant	ed to the undermentioned person	authorising the following building work or	n Lot No.5 D.P.66045
on	1445 Trig Boed,	MENUAPAI. in accordance	with the plans lodged and
Nature of proposed wo	in conjunction wi rk DWELLING	th the permit drawings.	ations to be read
		Value of work, \$90,000 D.&.P.\$2,000	
JOIN A R.D.2.	laridce. Komsu.	Fee \$140: 0: 0 Rec. No. For the Waitemata Ci	E002 18/2/1980 ity Council Authorised Officer.

Unity Press 50659/79

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APPLICATION No.-PERMIT No.... HEAD OFFICE DATE STAMP FINAL CHECK Initials ... Date Authorised Officer ЧT JOHN HENRY CENTRE, 6-8 PIONEER STREET, HENDERSON 9 FED 1980 POSTAL ADDRESS: PRIVATE BAG, HENDERSON 8 - PHONE: HSN 61-195 and 61-119 Waitemata INSPECTORS DEPARTMENT ON GROUND FLOOR v Council BUILDING PERMIT APPLICATION 6 OWNER OF SECTION: NAME Crosby Properties Limited PHONE No..5487.42. (BLOCK CAPITALS) PRESENT POSTAL ADDRESS Trig Road Whenuapai BUILDER: NAMEJohn Arlidge P.P. Gins SIGNATURE OF APPLICANT. Sales NATURE OF PROPOSED VALUE OF WORK FLOOR AREA OF **BUILDING WORK PROPOSED WORK Building** (including the materials for Plumbing & Drainage) \$60.000. House / Basement *Drainage (excluding materials) \$...... Ground Floor.. 180.. sq. mtrs. First Floor s...140..... Others VALUATION ROLL NO. Garage...34...sq...mtrs. Building Permit Fee 2I4 sq.mtrs. *Separate permits to be obtained by Drainlayer and Total 1605 709 Plumber. •Fee to be assessed on value of work excluding amount upon which Drainage and Plumbing Fees payable and may be paid at time of lodging appli-FULL LEGAL DESCRIPTION OF THE PROPERTY (as per Rate **Building Research Act 1969** cation. LEVY ON TOTAL VALUE OF \$3,000 OR MORE INCLUDING DRAINAGE Demand or Title Deeds) **†A** further 25% is payable on the fee where struc-AND PLUMBING WORK 10 LOT 5 D.P.66045 part tural check is required. Fee: \$1.00 per \$1000 or part thereof of Waipareira Amount of Levy 45 Parish Allotment 62-D.P Receipt No. \sim C.T.Volumne I2C Folio I295 North Auckland Regis τry NAME OF PREVIOUS OWNER OF SECTION Chatswood Estate Ltd. AREA OF SECTION: 4.06 hectares ... square metres FRONTAGE: 120.66 (Show large sites in hectares) 3-15 Trig Road LOCALITY. Whenuapai ROAD NAME **IMPORTANT — SEE INSTRUCTIONS ON PAGE FIVE** FOR OFFICE USE ONLY REMARKS /ha 9.a. noncod ëci,H COLFINS. Permit issued subject to the following conditions... To ... notations.on fling. NS.COM PLANS TO NOTATIC Engineens calcs to be read in conjuntion with it drawings Approved byPlumbing/Drainage Inspector .28.7.2.78.0..........Date Approved by Health Inspector ...Date Town Planning Zoning..... ural Approved by .. Town Planning Officer .Date FEB 1980 **Building Permit Fee** 00.6 35 - 00 · Structural Checking Fee Receipt No.... \$ 100-00 Road Damage Deposit Fee Receipt No Road Damage Deposit Refund 7 Cost of Vehicular Crossing 60 203 Location of ARA Trunk WCC Sanitary and Stormwater **Electricity Transmission Lines:** Present/Not present over property Sewers checked - Release/Hold Sewers checked - Release/Hold La Date 26 - 2.80 NA Initials N/A, Date Initials Initials Date

PLEASE	REFER	то	INSTRUCTIONS	ON PAGI	E FIVE
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SPECIFICATION TO BE COMPLETED BELOW FOR MINOR BUILDINGS ONLY (Full specifications are required for all other work)

FOI	IND	ATI	ONS
100	JI 1 D		0110

If solid concrete.	Size of footings	Walls	.Reinforcing	
If concrete blocks.	Size	Spacing		
N.B. — All blocks must be at least 300mm into ground and set on a 300mm x 300mm x 100mm concrete pad.				

FRAMING					
	Size	Spacing	Span	Timber	
Jack Studs	•••••			••••••	
Bearer Plates	•••••			•••••	
Floor Joists	•••••			••••••	
Outer Studs		•••••		•••••	
Inner Studs				•••••	
Ceiling Joists	•••••			•••••	
Bottom Plates	Size	• • • • • • • • • • • • • • • • • • • •	Top Plates	Size	
Noggins	Size		Number of rows of noggins		
 N.B. (a) Minimum stud height for dwellings is 2.4m. (b) Top window trimmers must be checked 15mm or otherwise supported. 					

		ROOF		
Covering	•••••	Ridge	s Size	Purlins Size
		Sarkir	ng Size	Under Purlins
	Size	Spacing	Span	Timber
Rafters				
		MISCELLANE	OUS	
FlooringSiz	.e	Exterio	or Sheathing	
Inside Linir	1g			
Is any secor	nd-hand material to be used	in the proposed Constructio accompany this f	n? If YES, orm.	then a separate application must
	······			

SANITATION

Privy Type......e.g. water closet, chemical pan or other type?

LOCALITY SKETCH TO SHOW LOCATION OF BUILDING SITE (Must be completed)	
	DRAINAGE AND PLUMBING
Lot 5.	ALL DRAINAGE AND PLUMBING MUST BE CARRIED OUT BY REGISTERED TRADESMEN. IF IT IS INTENDED TO INSTALL A SEPTIC TANK, NOW OR IN THE FUTURE, THE SITE MUST BE INSPECTED BY THE INSPECTOR BEFORE BUILDING IS COM- MENCED.
	IT IS MOST IMPORTANT THAT BUILDINGS SHOULD NOT BE OCCUPIED BEFORE COMPLETE PLUMBING AND DRAINAGE SYSTEMS HAVE BEEN IN- STALLED AND OFFICIALLY APPROVED.
TRIG RD.,	PLUMBING AND DRAINAGE PERMITS MUST BE OBTAINED BEFORE ANY PLUMBING OR
RYAN (Co.)	DRAINAGE WORK IS COM- MENCED.

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JPB:AS

30 October 1981

Crosby Properties Limited Trig Road WHENUAPAI

Dear Sirs,

RE: BUILDING PERMIT APPLICACION 14042 DWELLING ON LOT 5 DP 66045 TRIG ROAD, WHENUAPAI

Please find enclosed a copy of the amended plans which have been duly approved by the Building Inspector. Please note that these plans are to be read in conjunction with the above Building Permit.

When the remedial work has been carried out a further inspection is to be requested prior to the fixing of the ceiling linings.

Yours faithfully,

J.P. Brabbs For CHIEF BUILDING INSPECTOR

Encl.

WAITEMATA CITY COUNCIL

____ Date..... 1.4 50 **C**.19 MEMORANDUM for:peel 2~0 46473 Nº. Subject: Td Pro 6 -10 d āl - ((

NOTE — These memos are for staff and inter-office use only and must not be used for general correspondence.

Xing bee TBO to have.



City of Waitemata

JOHN HENRY CENTRE 6 PIONEER ST. HENDERSON 8.

Telephone HSN 61-195, 61-119 PRIVATE BAG, HENDERSON ADDRESS ALL CORRESPONDENCE TO THE CITY SECRETARY

TO THE RATEPAYER

14th December, 1973

WEEKLY HOUSEHOLD REFUSE COLLECTION SERVICE-CHANGE TO USE OF MULTIWALL PAPER BAGS

As from 1st April, 1979, Council is to extend the abovementioned service into additional areas, and to coincide with this move, has decided to use throughout the whole of the City, the 'Kleensak' multiwall paper bag method of collection currently operating in the Te Atatu Ward.

This move towards the compulsory use of 'Kleensaks' is in line with modern day practice, is in the interests of public health, and has proved to be most successful in the Te Atatu Ward over a period of seven years.

An annual supply (52 bags) of 'Official' rubbish bags will be delivered to all teparately occupied premises during late February-March, 1979, and should householders require additional bags, these may be purchased from Council's Offices at a charge which will cover the cost of the bag, the collection of the refuse, and its final disposal. This charge on the basis of current costs would be 31 cents per bag, but we must emphasise again that this figure covers the cost of the bag, and the collection and disposal of the rubbish, and may vary according to any fluctuations in cost.

The number of official bags placed out for collection will therefore not be restricted, as only bags marked 'Waitemata-Official Bag' will be collected. These bags will only be available through the initially delivered annual supply (52), or from March 1979 from Council's Offices, on payment of a charge covering the cost of the additional bag, and collection and disposal of the excess refuse. No other type of Kleensak or container will be uplifted or emptied after the lst April, 1979.

Householders wishing to purchase a standard wall mounted holder for 'Kleensaks' may do so from Council's Offices from March 1979, and it is expected that holders, which will be made available at cost, plus a small service charge, will be sold for approximately \$6.00. Alternatively, a holder may be purchased through normal retail outlets.

To gauge the demand for holders it would be appreciated if you would kindly advise Council (a telephone call will do) if you wish to purchase one from this source. Such advice will not be recorded as a firm order but will serve as a guide in the ordering of supplies.

Householders residing in the areas changing from 'optional' rubbish containers to the compulsory use of Waitemata Official Kleensaks, as from 1st April 1979, will receive additional information early in 1979, covering the new method of collection, but at this time there is no indication that there will be any change to present collection days. Should this however be found to be necessary, adequate notice ~will be given.

Council looks forward to your co-operation in making the best possible use of the new method of service, but should you be in doubt on any points please telephone the Inspectors Department - Hsn.61110-61119, 61190-61195. Ext.756.

Yours faithfully, K. MACLACHLAN GENERAL MANAGER Per CITY INSPECTOR

OCA 15600

J75: YM

26 March 1980

The Hunsger, Grosby Properties Ltd, Trig Read, UNEURAPAL.

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Dear Sir,

HE: BUILDING PENGET APPLICATION 309/5 - Deelling oplot 5 BP 66045 Trig Bood.

s2 ----- *

In connection with the above building peopli application, you are advised that a vehicle encoding is bequired at a cost of \$430.00.

Please formers your remittance with the duplicate copy of this letter direct to the writer at the above address so that your application can be finalised.

Yours faithfully,

J.P. MANUS for CITY INSPECTS Advisedby f some.
WAITEMATA CITY COUNCIL

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fandisie Engire	iles .	Nº	38350
<u>В.Р.</u> А.		9/5 - c	Inig Road.
cost Croming	to for	instal abore	a sealed is \$430.00
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	Engine B.P.A.	Engineer B.P.A. 38 cost to croming for freetons Meetons	Engineer B.P.A. 389/5 - 0 cost to instal coomy for above heatons heatons

and must not be used for general correspondence.

WAITEMATA CITICOUNCIL

Date 19/3/80 . 19

MEMORANDUM for:-Mr. W. Handisides Nº 50311 Distarct Engineer Subject: Lots DP66045 Trig Rd. Whenuapai Please have the cost of providing a vehicle crossing to the above property assessed and advise. Thonks n fessof 20/3 NOTE --- These memos are for staff and inter-office use only

and must not be used for general correspondence.

REPORT	ON	COMMERCIAL	OR	INDUSTRIAL	BUILDING
KEFUKI	UN	CONTRICTOTAD	U.	TRUCOTRIAD	DOIDDING

STRUCTURAL ENGINEER'S REPORT REPORT C(1)

B.P. APPLICATION NO: 14042

APPLICANT'S NAME:	Cros	by Pro	pertres Ltd	
BUILDER'S NAME:	Jol	in Arl	doe	
PROPOSAL:	AI	tenation	to trusses	
LEGAL DESCRIPTION:	LOT:	5	D.P. 66045	
ROAD NAME & LOCALITY:	Trig	RJ.		

CALCULATIONS AND STRUCTURAL CHECK

1. THE FOLLOWING AMENDMENTS, ALTERATIONS OR ADDITIONAL INFORMATION MUST BE MADE (OR SUPPLIED), BEFORE APPROVAL CAN BE CONSIDERED: (Please list clearly, and date and sign requirements)

Alteration to trusses.

*(a) **RECOMMENDATION:**

> The matters listed in (1) above (when applicable), have been settled to my satisfaction and I recommend that the application be APPROVED subject to the following conditions:-

Turs, to be sharefled attacked dehl.

*(b) I recommend that the application be NOT APPROVED for the following reasons:

Delete not applicable

Dealt with by _

Date

John And

(STRUCTURAL ENGINEER)

	B.P. APPLICATION NO. 389/5
APPLICANT'S NAME:	CROSBY PROPERTIES LTD
BUILDER'S NAME:	JOHN ARLIDGE
PROPOSAL:	DWELLLNG
LEGAL DESCRIPTION:	LOT: 5 D.P. 6604 5
ROAD NAME & LOCALITY:	

balc

*(a)

RECOMMENDATION:

⁽⁷⁾THE FOLLOWING AMENDMENTS, ALTERATIONS OR ADDITIONAL INFORMATION MUST BE MADE (OR SUPPLIED), BEFORE APPROVAL CAN BE CONSIDERED: (Please list clearly, and date and sign requirements):-

The matters listed in (1) above (when applicable), have been settled to my satisfaction and I recommend that the application be APPROVED subject to the following conditions:aly 10 be. MA COMU *(b) I recommend that the application be NOT APPROVED for the following reasons: STRUGTURALLY SUBJECT, TO, ENDORSEME * Delete not applicable 8 DATE Dealth with by Date (STRUCTURAL ENGINEER

JPD: YARI

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20 February 1980

The Manager, Crosby Properties Ltd, Trig Road, MHENUAPAI.

Dear Sir,

RE: BUILDING PERMIT APPLICATION 389/5 - Dwelling on Lot 5 DP 66045 Trig Road.

In connection with the above building permit application, Council's Town Planning Department have advised that the proposal fails to comply with the 9.1 metre front yard required under the sites Rural A zoning.

In view of the above, they have requested that you re-design your proposal in order to comply with their requirements.

Should you have any queries regarding the above, please contact Mr.Mossong of the Planning Department who will be pleased to assist you.

Yours faithfully,

J.P.BRABBS for CITY INSPECTOR

R12414timber Jona h. 1.1 ical house design 45 F_ ... R.J. Wom & Pavilien 703-721 19/2/80 BPA 389/5 Les MBills. Crosty Properties: Dwelling 1012 Oct 1575 Please ask adurse applicant 1 house that proposal fails to comply - 25° Mar. with the 9.1 in front yard required under the sites Rural, A zouring Ask to redesign to Cong Thanks lingth of Room TERM.

(2tony Goodwins. from timber durigns. wird leading. V5=5,52V 10×06×35 = 21 M/200. $P_{U} = 270 \text{ m/m}^2$. : force on house @ paves. P= 270×1.2 = 324 N/M. ×(7+.8) = 486N/4 for boom 5.000 M long P to end wall = 486×2.5 = 1215 N.

for portal trame on erd wall 400 2.000 had @ lose - RISN Shear at base = 607 N. Sheav Stren = $\frac{b07}{0.5}$ = 1215 N/M for gring figurood with TSmin hail Spacing to fermater. Menable stean · 2500 m/M.

fou toh member 400 mm deen. farce in perimeter member. $\frac{M}{La} = \left(\frac{1215}{3}\times1\right)\times\frac{1}{350}$ = 3471 N. (750 lbs). Stren to 100 × 50 framing $= \frac{3471}{30\times45} = 0.85 \text{ N/mm}^2$ for 100 mm nails Alowalle laad / nail Soo N/ nail J- 100 mm vails leg.





R 2599 () Rohozed lesidence for Crosby's poperties at 15t Frig road. Up hoperties whenuafai Eng. K.J. Warn & Buthers flore 793-721 Calos miBilles 18/2/80 linkel over garage doors. Shan = 4800 loading vool 750 × 4 = 3.0 KN/M Jent $2rq = \frac{3.0 \times 10^3 \times 4.8^2 \times 10^2}{8 \times 7 \times 1.25}$ = 987×103 $I_{x} = \frac{3.0 \times 10^{3} \times 9.8^{3} \times 10^{6} \times 200}{77 \times 7.875 \times 10^{3} \times 1.25} = 100 \times 10^{6} \text{ m}$ Use 2/300 × 50 to fam beam douglas Fin.

fer fixing of turn to tobe place & top place to studo use Z nail fixings - at location of eave overlang greater law 750mm Nole: The designer las only calculated lose elements Mat require Specific designs all remainder itemis to comply NZS3604. • \sim

CALCULATION SHEET ONE

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Providers

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						SHEET B			
•			, Total B H L	2	3. U Lune	4 .	₩ Wall Bra	e cum filemente	· 7 ·
	CIRCLE Which	EET A hever is applicable)	Required	Label	Minimum B U 's Required	Labai No	Type	R∡tina ∎.U`s/m	Length (m)
	NAME:	ADDRESS: LOT 5 TEKS ED. WHENUAPAI	ALONG	•	7.5 x 10	Al	10	83	1200
	STOREY: Single of Uppermost	ROOF TYPE: Light Heavy			75				1
	Lower of two or middle of three	BOOF PITCH (0" - 25)/ 28" - 45"		8	835	BI	1	42	240
	WIND AREA: Hish (Marding (Law)	w - 183 autom			x 10				
		· · · · · · · · · · · · · · · · · · ·			83.5			5.	d-total
	EARTHQUAKE ZONE: A / BC	E - 🍣 B.U.'s/m²		c		CI	12	42	200
	ROOF OR BUILDING LENGTH	81. 43 Bm				CZ	10	83	1100
	ROOF OR BUILDING WIDTH	8W 9.9m		!	70	J			do-total
	GROSS ROOF DR BUILDING PLAN AREA	GPA 33 GPA 33 GPA 399		D	635	DI	1	42	2400
		3,122, 200		-	x10				
	EARTHQUAKE: B.U.'s ALONG AND ACROSS			1	63.5				<u> </u>
	WIND: B.U.'s ALONG	W×BW 18×9.9. 179 B.U.'s				L			
	WIND: B.U.'s ACROSS	WXBL 18x 14.8 267 BU'S		TOTAL	1202			T	JTAL

SKETCH PLAN (external and internal walls) :

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CALCULATION SHEET TNO

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SKETCH PLAN (external and internal walls) :

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268 284 7.65 100 U 2400 42 1 ACROSS ι XIO 1001 76.5 Sub-total 42 2400 100 7.65 MI 1 м 117 MZ 10 83 1400 10 ZIT 765 N Sub-total ο Sub-total Ρ Sub-101al 311 153 317 TOTAL TOTAL

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6-		•				SHEET B				
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	CIRCLE which	ET A ever is applicable)	Required	Label	Minimum B U 's Required	Label No	Τγρο	Ratine 1 B.U.'s/m	i,ength (m)	N U y Provided
			ALONG	•	5.6	Al	10,	83	1200	100
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STOR		ROOF TYPE: Light Heavy			56		L	l	1 ib-tatal	100
	Lower of two or middle of three Lower of three	ROOF PITCH: 0" - 25" 28" - 45"		8	-	BI	12	42	2000	42
						82	12	42	200	469
WIND	ANEA: High / Medium (Low)				70		h	5.	do-total	24
EARTH	HOUAKE ZONE: A / B C	$E = 3 B.U.' u/m^2$		с	6.4	21		42	2400	1∞
ROOF	OR BUILDING LENGTH	8L -11 m~		_	XIO				ł	
ROOF	OR BUILDING WIDTH	8w -78m			64		J	\$) do-total	100
GROSS	ROOF OR BUILDING PLAN AREA	GPA 85%		D						
EARTH	HQUAKE: B.U.'S ALONG AND ACROSS	Ex GPA 3x858 258 B.U.S								
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	U.U. + ALONG	19.11 188	258	TOTAL	190	[Ť	OTAL	284
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			ACRUSS			h	+			*****

SKETCH PLAN (external and internal walls) :

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50 2 2 1 2 1 2 1 2 4Z 42 84**∓** 94 ∞ ∞ **B**4 00 X(O 100 96.5 Sub-total 2000 42 42 12 42 M м MZ 70 84 1 Sub-total 2400 100 NI 42 935 ١ N *10 100 93.5 Sub-total ο Sub-total ۶ ----. ... ------258 TOTAL 260 284 TOTAL

CALCULATION



SPECIFICATION

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SPECIFICATION for the erection of a residence at Hobsonville for Mr and Mrs P. Hawkins.

Liquidated damages for delayed completion shall be \$______ per week. Extensions to the contract period for extra work or for contingencies beyond the control of the contractor to be as agreed between the parties at the time and added to the time for completion.

PAYMENTS AND RETENTIONS

Payment in the form of progress payments at not less than one month intervals will be made on value of work carried out less 10% retention as required by the Wages Protection and Contractors Liens Act 1939. Retentions to be held until 31 days after completion of the contract after which a sum of 5% is to be held if maintenance has not been carried out as under clause P. & G. No. 9, Maintenance.

ARBITRATION

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> If dispute or difference should arise between the Owner and Contractor the contract shall be subject to arbitration under the Arbitration Act 1908.

PRELIMINARY AND GENERAL

1. <u>Contract</u>

This contract includes the supply and delivery of all materials, labour, fittings, tools, plant, toolshed, temporary water supply, temporary builders' power supply, etc., necessary for the due and proper completion of the building as shown on the drawings and herein specified, in a thorough workmanlike manner, in strict accordance with the Local By-laws, manufacturers' specifications and to whatever regulations made by those loaning monies to complete this contract.

2. Permits

Contractor to comply with the Labour and Building By-laws of the district, to apply for and obtain all the necessary permits and to pay all fees for same, unless otherwise mentioned.

3. Provide and Fix

The words "provide" and "fix" shall be construed to mean "provide" and "fix" where mentioned separately unless otherwise mentioned.

4. <u>Insurance</u>

The Contractor to have all of his employees covered against accident by an Employers' Liability Policy and to take out insurance against fire and theft of materials off-site for a sum sufficient to cover the full amount of the Contract Sum, both policies to remain in force until the building is taken over by the Owner; the fire insurance to be in the joint names of the Owner and Contractor.

5. Interpretation

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Work or materials shown on the drawings or specified and not shown, must be supplied as though both shown and specified. Materials shown but not specified must be of the kinds commonly employed for the service they are intended to perform. All figured dimensions shall be taken in preference to scale and all detail drawings shall supersede those to a smaller scale. The Contractor shall be held responsible for the setting out of all work and he shall make good at his own expense any errors that occur through his lack of checking or faulty workmanship.

6. <u>Stability</u>

The Contractor shall carefully brace and support all parts of his work against damage by wind and also protect same from the elements.

7. Protection of Property

The Contractor shall protect adjoining properties during the currency of the contract and shall make good all damage at his own expense.

8. Damage

The Contractor shall make good at his own expense and to the satisfaction of controlling authorities, any damage done to footpaths, kerbs, drainage, etc., or other property under control of such authorities.

Each trade shall take care to prevent damage or disfigurement of the work of other trades and will be responsible for cost of restoring same.

9. Maintenance

Period to be a minimum of thirty days or to a time agreed on by both parties and entered into the agreement after the Owner has taken possession. Any defects in materials, workmanship or any part or parts that require replacing or adjusting, which have been included in this Contract, shall be adjusted or replaced at the Contractor's expense.

10. Materials

Any materials herein specified that are not procurable at the time they are required, thus tending to retard the progress of the contract, may be substituted with other similar materials, providing that the substituted materials conform to the Local By-laws and with permission of the Owner. The Contractor is first to notify the Owner of any change proposed and at the completion of the contract will adjust any difference in cost.

11. Contingencies

Provision is to be made by the Builder and Owner to meet any contingencies that may arise due to the fluctuations in the price of various materials or labour. Should there be either a rise or fall in the price of labour or materials, from the date that the tender is submitted until final payment, an adjustment to the Contract Price, is to be made accordingly provided that the Contract Price has been affected by such rise or fall in prices.

The Owner will expect the Builder to submit proof of any increases claimed for by way of invoices or labour costs.

12. Visit Site

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Tenderers shall visit the site and ascertain the nature and extent of the work and the rights and interests that may be interfered with and any other matter that may influence the making up of a tender or the carrying out of the contract in its entirety. The levels shown on the drawings are approximately correct but tenderers shall verify these as no claims for extra will be allowed on the basis of incorrect levels shown.

13. Workmanship

All work shall be carried out in accordance with the best trade practice, in strict conformity with the drawings and specification and to the satisfaction of the Owner. All defective or damaged work shall be removed and made good to the satisfaction of the Owner.

14. Cleaning

The Contractor, at the conclusion of the Contract, shall have all ceilings, walls and woodwork carefully dusted and wiped down, windows washed and glass free from scratches, floors brushed and wiped down and the entire building left in a perfectly clean condition for occupation.

EXCAVATOR

2.

1. <u>Preliminary and General</u> Read and note all clauses under Preliminary and General of this specification where they apply to this trade.

Levels Levels shown are approximately correct, but in all cases the foundation shall be taken to a solid bottom to the satisfaction of the Local Building Authority. Check all levels and make allowances accordingly.

3. Clearing Building Area and Bulk Excavation

Clean off all vegetation and 150 mm top soil over building area and deposit on site as directed. Excavated material to be deposited as directed on site or if directed off site an extra will be allowed to the Contractor.

4. Building Excavation

Excavate for all foundations to the minimum depth shown as required to NZSS 1900 or the Local Body Engineer or his agent, or where directed due to the nature of the country. Excavate for basement field tile drains to required depths and falls. Fill and well ram on completion.

5. <u>Hardfill</u>

Under all concrete floors provide a minimum thickness of 100 mm of 50 mm graded down clean scoria well compacted and binded with fine scoria to a corrected level. d5 nm 5 nwp BLWDING REQUIRED UNDER POLYTHENE

6. <u>Field Tile Trenches</u> Provide for 100 mm diameter tile trench bedded in scoria to correct level.

7. <u>Revet and Maintain</u> Secure and maintain the sides of all excavations and keep them clear of water and fallen materials.

CONCRETE AND REINFORCING

- 1. <u>Preliminary and General</u> Note all clauses under Preliminary and General of this specification which shall apply to this section of the work.
- 2. Extent of Work

Comprises the setting out, boxing and placing of concrete in the foundations, floor slabs, walls, beams and bands, and any other concrete work shown on the drawings.

3. <u>Materials</u>

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Concrete which shall be ordinary grade and reinforcing shall comply with requirements of NZSS 1900 chapter 9.3A 1970 and amendments. Builders mix may be used if agreed by Owner, providing the minimum crushing strength of 17.24 MPA is unaffected.

4. Formwork

Formwork generally shall be of plywood or 25 mm thickness non-staining timber and shall be so constructed that it can be removed without damaging concrete. Times of removal of formwork, methods of construction and pouring of concrete shall be as set down in NZSS 1900, chapter 9.3A.

5. Foundations

Foundation footings, walls and reinforcing shall be to sizes shown on drawings and in accordance with NZSS 1900 chapter If not shown elsewhere footings shall be not less than 9.3A. 300 mm wide x 150 mm high where required reinforced with two 12 mm longitudinal bars and foundation walls shall be not less than 130 mm thick reinforced with 12 mm dia. rods at 300 mm centres horizontally and 10 mm dia. rods at 600 mm centres vertically where height of wall is under 1.8m. Reinforcing steel shall be lapped at least 40-rod diameters for plain rods and not less than 30-bar diameters for deformed bars conforming to the requirements prescribed. Concrete foundation blocks shall be precast 200 x 200 x 600 mm high set on 300 x 300 x 100 mm concrete pads.

6. Concrete Slabs

Where required concrete slabs for floors and porches shall not be less than 100 mm thick poured on well compacted hard fill and reinforced with a layer of $150 \times 150 \times 5.30$ mm mesh. Where floor slabs occur in rooms for habitation they shall have an approved vapour and moisture proof barrier incorporated, such as polythene sheet not less than 0.15-mm to the requirements of NZSS 1900 Ch.4 and shall be welded into one continuous sheet or shall have joints lapped not less than 150 50 mm and sealed with a self adhesive plastic tape to manufacturers' specification.

7. Build-in Bolts etc

Provide in concrete for openings for vents or as required by other trades and for holding down bolts in accordance with NZSS 1900 Ch. 6.1. Timber grounds where required for fixing door frames etc., shall be heart totara dovetailed and where required water bars shall be of brass or galvanised iron. Power powered tool fixings can be used where appropriate.

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8. Paths

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Where shown on drawings paths shall be laid not less than 75 mm thick reinforced with a layer of $150 \times 150 \times 4$ mm mesh. Surface to be trowelled even with suitable drainage grade and left off with a wooden float.

9.

<u>Completion</u> Leave all clean and tidy at finish and make good any defective work.

CONCRETE BLOCKLAYER

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- 1. <u>Preliminary and General</u> Read and note all clauses under Preliminary and General of this specification where they apply to this trade.
- 2. Extent of Work

Refer to drawings for layout and extent of work. Build the whole of the reinforced and unreinforced 200 mm concrete blockwork, building in as the work proceeds reinforcing steel, bolts and all other lugs, conduits, sleeves, etc., required for the work of other trades. Keep surface clean and free from mortar, perpends true and faces true to line, laying all blocks dry. All blockwork and blocks to comply with the requirements of NZSS 1900 Ch. 6.2 for Masonry Construction.

3. Bond

Blocks shall be laid in stretcher or stack bond as shown with blocks evenly spaced, faces true and vertical. 200 mm blocks shall be free from all defects which would prevent a first class fair faced finish to both faces. Reject all defective blocks which do not comply with NZS 3102P. All joints shall be full and a complete bond shall be secured between the blocks and mortar. Great care shall be exercised to ensure that bond is not broken by making adjustments to blocks after mortar has taken a set.

- 4. <u>Mortar</u> The mortar for all blockwork shall be composed and mixed according to the relevant NZSS clauses.
- 5. Water

Water shall be free from salt, vegetable or organic matter in solution or suspension. Water from Local Authority mains is acceptable.

6. Sand

Sand shall comply to NZSS 1900 Ch. 6.2 filling of masonry cavities and NZSS 2129 "Sands for Mortar, Plaster & External Renderings".

7. Cement

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All cement shall comply with NZSS 3122 and shall be properly stored at the site and adequately protected from dampness.

8. <u>Minimum Reinforcing Steel Requirements</u>

In all reinforced masonry there shall be at least one vertical rod or bar not less than 12 mm diameter or two 10 mm rods or bars placed at all corners and wall ends except that where openings are carried around corners, the reinforcing steel shall be placed in any masonry used below or above the opening. In all reinforced masonry walls there shall be not less than one 12 mm rod or bar or two 10 mm rods or bars on all sides of, and adjacent to, every opening exceeding 600 mm in either direction.

- b) Such vertical reinforcing steel shall extend from the foundation or lower wall beam to the upper wall beam. Horizontal reinforcing steel shall extend not less than 600 mm beyond the corners of the openings.
- c) Reinforcing masonry shall be reinforced both horizontally and vertically. The vertical reinforcing steel shall be placed at not more than 1000 mm centre to centre and shall be not less than 10 mm in diameter.
- d) Any space containing reinforcing steel shall have a clear distance of not less than 6.35 mm between the steel and masonry at all points and shall be filled solid.
- e) Reinforcing steel shall be lapped at least 40-rod diameters for plain rods and not less than 30-bar diameters for deformed bars conforming to the requirements prescribed.
- 9. Joints to Blockwork

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All blockwork joints shall be neatly stuck with a 10 mm rod jointer to form a neat concave recess to a good line, level and of consistent depth of approximately 6 mm. See NZSS 1900, Ch. 6.2.10.2.4.

10. <u>Waterproofing</u>

Apply an approved waterproofer to the exterior of the concrete blockwork below ground level as shown.

BRICKLAYER

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- 1. <u>Preliminary and General</u> Read and note all clauses under Preliminary and General of this specification where they apply to this trade.
- 2. <u>Relevant Specifications</u> All work shall be in accordance with the requirements of NZSS 1900, Ch. 6.2 and NZSS 1900, Ch. 6.1.
- 3. <u>Materials</u>
- a) Bricks: Bricks for external veneers and foundation walls shall be of the colour and type selected and shall comply with NZSS 366 Clay Building Bricks grade A or B. All fair face brickwork shall be laid with their best face outwards.
- b) Cement: Cement shall be ordinary Portland Cement and at the time of use shall comply with NZSS 3122 Portland Cement.
- c) Plasticizers: Plasticizers shall be used in accordance with the manufacturer's instructions and no other additives are to be used in conjunction with these materials. On no account will further additions be made at the time of retempering mortars.
- d) Water: Water shall be drinking quality and shall at the time of use be free from acids, alkalis and organic impurities.
- e) Sand for Mortars: Sand used shall be Mercer No.l sand and/or shall comply with the relevant clauses of NZSS 2129, 1967, "Sands for Mortar, Plasters and External Renderings".

4. <u>Preparation of Mortar</u>

Mortar shall be prepared by mixing in an approved batch mixer. Measurement of materials shall be by volume in a suitably calibrated device. Mortar shall be mixed until a homogenous mass is obtained but for not less than 5 minutes. All mortar whether on the boards or left in the mixer shall be used within 90 minutes. Mortar not used in this time shall be discarded.

5. Bricklaying

Bricks shall be laid in stretcher bond true to line level and plumb, and in accordance with the best trade practice. All work shall be laid from the lowest corner and no corner shall be raised more than 900 mm above wall line. Corners shall be racked back. On no account will toothing be permitted. All joints will be completely filled with mortar and the bricks shall be shoved into place at least 12 mm and shall be disturbed as little as possible after initial positioning. Head joints shall be buttered on three edges, deeply furrowed joints will not be permitted and mortar shall be spread on the bed joint not more than three bricks ahead of laying the next course. Joints shall, unless otherwise specified, be not more than 9.5mm thick and shall be tooled as directed as work proceeds.

6. Brick Veneer

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Construct brick veneer as shown on the drawings and in accordance with NZSS 1900 Ch. 6.2. Mortar and workmanship as previously specified. Veneer ties, and their anchorages, shall be designed and fixed so as to resist a lateral load in tension or compression of twice the weight of veneer which each tie supports, without alongation or shortening of the assembly by more than 1.6 mm. Ties shall be non-corrodible metal or shall be galvanised after forming, with a zinc coating of not less than 505 g/m^2 . If of round bar they shall be of a minimum of 5 mm diameter; if of sheet metal they shall be of a minimum thickness of 1.5 mm and a minimum width of 25 mm. The latter shall be used whenever a breather type building paper is fixed to the face of external studs so that puncturing of the paper within the cavity space does not occur.

Approved ties shall be spaced at not more than 500 mm horizontally and not more than 345 mm vertically. An air space of at least 38 mm shall be maintained between timber frame and veneer and where necessary weep holes shall be left every third joint for the discharge of water. Care shall be taken to maintain the air space and upstand free of any mortar droppings, protruding joints, or pipes or electrical wire, junction boxes, etc. Incorporate galvanised vermin proofing. Where shown build in brick-size concrete vents as required. All facing work shall be kept clean as the work proceeds. On completion all brick work shall be left in a clean state.

7. Sills

Sills to be brick on edge, brought to underside of sills, junction between to be filled with 'Hydroseal' and overpointed with cement mortar.

8. <u>Building Paper</u>

Building paper where used on outside face of studs shall be of a bituminous or fire resistant breather type complying to NZSS 2295 and metal ties shall be of a sheetmetal type fixed to face of studs.

9. Vermin Proofing

Build in 100 mm wide strips of approved galvanised wire mesh secured to bottom of wall plates with 20 mm galvanised wire staples carried across cavity and taken 25 mm into work. Vermin proof dividing wall and wherever necessary to prevent entrance of vermin.

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CARPENTER AND JOINER

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- 1. <u>Preliminary and General</u> Read and note all clauses of the Preliminary and General which apply to all works of this section.
- 2. Extent of Work

The work of this section shall include all labour, materials, equipment necessary to carry out and complete the carpentry as shown, or as further required by this specification, together with any other items of work reasonably inferred as part of this section.

- 3. <u>Attendance and Protection</u> Attend upon all other trades providing all blockings, fixings, trims, nogging as necessary for the full completion of their respective works and make good after all trades.
- 4. Materials and Workmanship

All materials used shall be the best of their respective class and type specified. Any materials which in the opinion of the Owner, Loan Body or Local Authority are not up to standard, to be removed immediately from the site. All work shall be carried out in a workmanlike manner in accordance with best trade practice and as or where especially specified. Any work that is intended or implied but not specifically shown, mentioned or specified as necessary for the proper completion of the building shall be included. All work shall comply with the relevant NZSS requirements, particularly NZSS 1900, Ch. 6.1.

5. Timber

All timber used shall be the best of its kind, conforming to NZSS requirements (Building Timbers). All Pinus radiata to be No. 1, Framing Grade pressure treated or treated to requirements of the Timber Preservation Authority specifications.

6. Damp Proofing

All timber to be protected from dampness with 3-ply bituminous felt or other approved damp proofing material when in contact with concrete or brickwork.

7. Priming

All exterior finishing timber, all timbers in contact with concrete blockwork and all external faces, rebate, etc., of all doors, windows, frames and all woodwork of sashes, shall be primed before fixing unless otherwise specified in Painter.

8. <u>Cleaning</u>

The Contractor at the conclusion of the contract shall have all ceilings, walls and woodwork carefully dusted and wiped down. Windows washed and glass free from scratches and paint. Floors brushed and the entire building and site left in a clean condition for occupation. 9. Nails and Screws

All nails used in framing to be diamond head of sufficient length to penetrate the holding or second timber to at least half length. Flat head nails may be used if timber suitable. All bolts, screws, etc., to be adequate for their respective purpose.

10. Building Paper

Breather type paper shall be fixed under all external wall coverings except wall veneer of framed buildings. If, however, foil insulation is installed the omission of building paper in wall veneer of framed building shall be over-ruled and fixed as required for foil insulation.

11. <u>Insulation</u> No material shall be used that does not comply with NZS 1340 or NZSS 1900 Ch. 5. as insulants in this contract.

- a) Building Paper: Shall be as specified under clause 19(e) of this trade.
- **b**) External Walls: Except where Gib foil is used all foil is to (foil) be of the reinforced, double sided type and shall be fixed only on the (warm side) inside of the external stud, extending from the top plate to the bottom plate. Any joints which do not overlap on either studs or nogging shall be taped to manufacturer's specification. Any punctures to this barrier within the sealed air cavity shall be made good. 'Fixing to studs shall be either by galvanised clout nails or cadmium coated Foil insulation on external walls staples. shall only be used when a breather type building paper is used as a coverage to the (cold side) outside of the external stud. Foil shall not be used as a substitute for building paper.
- c) Ceilings: Where foil is used to insulate ceilings the foil must be fixed to manufacturer's specifications or Building Research Association of New Zealand recommendations.
- d) Polythene film: Fix polythene film on the (warm side) inside of the external stud (minimum thickness 0.05mm). Coverage shall be from top plate to bottom Joins will only be allowed on studs plate. or noggings. If film is punctured or torn within a sealed cavity area and unless the affected part can be heatsealed the whole area within the sealed cavity area shall be recovered or the whole sheet replaced. No pressure sensitive tapes will be allowed to be used for a repair. Fixing shall be either by galvanised clout nails with felt washers or

Where polythene film is used to insulate ceilings, film must be fixed to manufacturer's specifications.

e) Loose Infill Insulants:

Loose infill when used as a thermal insulant for ceilings shall comply with NZS 1340 and NZSS 1900, Ch.5. Loose fill insulants that compact with settlement shall not be used in external walls.

- f) Fibreglass To be installed to manufacturer's Insulation: recommendations and specifications.
- 12. <u>Timber Groupings</u> All timber shall be the best of their respective kinds and shall conform to NZSS 3631, "Classification and Grading of New Zealand Timbers".

13. <u>Treated Timbers</u> Timbers shown in the Schedule of Timbers to be treated shall be treated with an approved preservative process in plants licensed by the Timber Preservation Authority.

14. Schedule of Timbers

Location	Sizes	Grade		Remarks	
General Framing					· · · · · · · · · · · · · · · · · · ·
Studs and Plates	100 x 50 mm or 100 x 75 mm or 75 x 50 mm	Trea No.	ted Ra 1.	adiata	600 mm c.c.
Trimmers	Equal width to built-up framing				
Openings from	Solid or Laminated				
1 m to 1.35 m	75 mm 150 mm	**	11	11	
1.35 m to 1.8 m	100 mm 150 mm	n	11	11	•
1.8 m to 2.25 m	125 mm 200 mm	11	11	11	
2.25 m to 2.7 m	150 mm 200 mm	11	81	**	
Ceiling joists (over 1.8 m)	100 x 50 mm	11	*1	н	450 mm c.c.
Exposed beams	As shown	. 11	11	11	See plan

Location	Sizes	Grade	Remarks
Rafters (max. span 2.4 m) (max. span 3 m) (max. span 3.6 m)	100 x 50 mm 125 x 50 mm 150 x 50 mm	Treated Radiata No. l.	450 mm c.c. for tile (concrete)
Rafters	100 x 50 mm	11 11 11	900 mm c.c. for iron or bituminous
Roof trusses	To approved design		
Under purlins and struts	100 x 50 mm 100 x 75 mm	11 11 ⁽ 11	As required
Purlins	75 x 50 mm	11 , 11 11	750 mm c.c.
Tile battens	50 x 25 mm	11 11 13	As required
Ridges	200 x 25 mm	tt 1f T3	See plan
Hips	200 x 25 mm	11 11 11	See plan
Valley board	150 x 25 mm	11 11 11	See plan
Dragon ties	100 x 50 mm or 150 x 25 mm	81 11 11	As required
Wall noggings	75 x 50 mm or ' 100 x 50 mm	17 11 11	As required
Collar ties	150 x 25 mm	11 11 I	See C1.16
Ceiling noggings	75 x 50 mm	11 11 11	As required
<u>Timber terraces</u>	See plan	Pressure treated Pine or Hardwood	
<u>Finishing timbers</u> Flooring	100 x 25 mm or 18 mm particle board	T & G D.A.H. Rimu or Matai High Density	Not required
Fascia board	150 x 25 mm to 225 x 25 mm	D.A.H.R.	
Frieze	150 x 25 mm	D.A.H.R.	Not required
Weatherboard	D.A.H. Rimu or P.T or imported Cedar Vertical finishing Weatherside or Fib that not applicabl	.D.A. Rimu or Matai - Horizontal or grade. roplanks (delete e).	Not required

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Location	Size	Grade		Remarks
Internal door jambs	25 mm	0.B.R.	· ,	
Architraves Skirtings	75 x 12 mm 75 x 12 mm	O.B.R.) O.B.R.)	or by agreement	
Sill boards	2 <u>5</u> mm	O.B.R.		
Aprons		0.B.R.	Scotia of $\frac{1}{2}$ round	c ·
ALL OTHER INTERNAL O.B.R.	FINISHING TIMBERS NO	OT SPECI	FICALLY M	ENTIONED TO BE
Window jambs	150 x 40 mm	D.A.H.	Rimu	
Window sills	150 x 65 mm	D.A.H.	Rimu, Mata or Cedar	<u>ai</u>
Mullions	75 x 65 m²n	11 21	31	11 .
Facings (ext)	75 x 25 mm	11 11	11	11
Cornices	40 mm	11 11	11	11
Door sills	150 or 200 x 65 mm with 12 mm , steel weather bar			
Scribers	50 x 12 mm	Totara Rimu	or Heart	

15. General Framing

All framing to be $100 \ge 50 \text{ mm}$ stud or $75 \ge 50 \text{ mm}$ stud with $100 \ge 75 \text{ mm}$ to all openings. Top and bottom plates to be same sizes as studs in long lengths. Halve at angles and joints over bearings. All studs at 600 mm c.c. Provide three (3) rows of nogs to full height each wall and to suit plan.

16. Roof Framing

Construct roof as shown on drawings and detailed. Bird-mouth over plates and fix securely. Fix valley boards, ridge, etc. Allow for collar ties to every third set of rafters where rafters exceed 3 m in length, struts, under-purlins, etc. Fix purlins as required. Fix fascia, barge, frieze, etc., as required for iron roof if purpose made metal sections are not shown on plan. Cover whole of roof with building felt or a breather type on wire netting. <u>Trussed roofs</u> shall comply to the requirements of NZSS 1900, Ch. 9.1 and Ch. 8, to the satisfaction of the Local Building Authority.

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17. Post and Beams

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Where shown on plan fix all to detail, with all bolts, plates, holding down plates, etc. All nail fixing with galvanised nails. All bolt fixing with galvanised bolts.

18. <u>Timber Terraces</u>

Where shown on plan construct to detail or best trade practice. All nail fixing with galvanised nails. All bolt fixing with galvanised bolts and all timber to be treated to the correct preservative retention as specified by The Timber Preservation Authority.

19. <u>Aluminium Joinery</u>

Where shown on plan allow for supply and fixing to manufacturers' specification. Sizes and type to be as shown on plan.

20. Exterior Joinery

All exterior joinery shall be as detailed on plan to sizes shown and shall be constructed to best trade practice, all primed before leaving manufacturers' premises.

21. <u>Plates</u>

All to be straight and true and in long lengths, scarfed at all joints, halved at corners and dovetailed at intersections. See manufacturers' instructions where nail plates are used in lieu of.

22. Studs

Stud height generally to 2400 mm (refer to plans) at approximately 600 mm c.c. Double stud to all openings over 1000 mm and check trimmers to studs.

23. Bracing

Brace all interior bearing walls with 100 x 25 mm cut flush with studs. Brace interior corners where possible with 150 x 25 mm diagonal bracing checked flush with outside face and 150 x 25 mm dragon ties to ceiling joists. Refer to manufacturers' specifications when using metal strap bracing.

24. <u>Ceiling Joists</u>

To be generally $100 \ge 50 \text{ mm}$ spaced as required (refer to plan) and to be well spiked to all plates. Provide adequate ceiling runners to spans of 2400 mm and over.

25. Roof

Roof to be framed up to pitch indicated on plans and to detail, properly checked, birds-mouthed and well spiked. Strut rafters off bearing partitions at 1800 mm c.c. with 100 x 50 mm supporting 100 x 75 mm under purlins. Fix 150 x 25 mm collar ties to rafters as specified in Cl. 16.

- 26. <u>Purlins</u> Refer to plan.
- 27. <u>Eaves</u> Allow to overhang as shown on plan and line as directed.

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28. Nogging

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To be 50 mm at approximately 600 mm c.c. or 3 rows to each wall. Provide 75 x 50 mm nogging to ceiling where required for fixing of ceiling sheathing.

- 29. <u>Fibrous Plaster Ceilings</u> Fix 9.5 mm fibrous plaster ceiling and stop all joints to form smooth finish.
 - <u>Wall Linings</u> Generally, shall be 9.5 mm gibraltar board or gib. foil fixed by expert fixers. All nailed with galvanised flat head nails on joints at approximately 150 mm c.c. All stopping to be done with best quality plaster of paris, filled to an even surface and sanded off.
- 31. Doors and Frames

External door frames shall be of 40 mm full width material rebated, and internal shall be 40 mm rebated or 25 mm material with 12 mm planted stops. Doors shall comply with NZSS 1158, where external shall be framed, ledged and braced or timber or glass panel as shown on drawings, all properly constructed with stiles and rails out of 50 mm material. Internal doors shall not be under 40 mm hollow-core faced with plywood or hardboard with clashing strips fixed to lock stiles. All timber core material shall be treated and doors shall be of approved manufacture. Doors over 1400 mm in height shall be hung on one and one half pairs of 100 x 70 mm antique butt hinges.

32. Wardrobes

To be lined full height. Provide inside each with $300 \ge 25$ mm full width shelf at 1700 mm from floor and 20 mm galvanised pipe coat rail at 75 mm below shelf. Provide cupboards over wardrobe where required.

- 33. <u>Linen and Coat Cupboards</u> Lined full height inside and to have 25 mm shelving. Full depth for linen at approximately 400 mm c.c. Coat cupboard to have hat shelf at 1800 mm from floor and coat hooks to side and rear, or as required.
- 34. <u>Kitchen Units</u> Fittings to be constructed and fitted by Owner.
- 35. <u>Hot Water Cupboard</u> To be constructed where shown and fitted with slat shelving above cylinder spaced at 500 mm c.c. Provide two flush doors with thermostat boxed in.
- 36. <u>Architraves, Skirtings, etc</u> Finish all windows internally, door openings and wherever required with 50 x 12 mm rounded or splayed architraves. Finish at junction of floor and wall with 75 x 12 mm skirtings neatly mitred at angles and scribed to floor. Supply and fix beads, half rounds and where required scotia mould at ceiling junction and all trim as required to complete the work.
37. <u>Bathroom Fitting</u> By Owner.

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38. <u>Meter Recess</u> Provide recess for Electric meter board where directed to the satisfaction of the Local Electric Supply Authority.

39. <u>Manhole</u> Provide manhole in ceiling 500 x 500 mm where directed.

TILE ROOFER

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- 1. <u>Preliminary and General</u> Read and note all clauses under Preliminary and General of this specification where they apply to this trade.
- 2. <u>Tile Roof</u> Tile roof as shown on drawings with tiles. Colour to be selected by Owner.
- 3. Setting Out
- a) All spoutings, flashings, valleys, vent pipes, etc., to be completed before tiling contractor commences.
- b) Wherever possible set out tiles on the main slope so that when laid there is a complete course of tiles both at the eaves and ridge. No end lap shall be less than 65 mm. Keep tiles in straight vertical and horizontal lines.
- c) Battens shall be of the specific size required, proof loaded and fixed to hip rafter.
- d) Interlocking tiles shall lock and no cut tiles shall be less than half tile and shall be laid at verges only. All cutting to be neatly performed and all cut tiles shall be of adequate size and shape for their purpose.
- e) In all cases the manufacture, supply, colouring, battening, laying, setting out and fixing of concrete roof tiles, hipcaps, ridge caps, apex caps shall comply with all requirements as specified in NZS 4206 - 1973, "Specification for Concrete Interlocking Roofing Tiles".
- 4. <u>Ridging</u> All ridging to be adequate and neat. All concrete tiles to be pointed with matching mortar.
- 5. <u>Securing Tiles</u> Concrete tiles - each alternate tile in every second course shall be wired. Tiles to be staggered.
- 6. Guarantee

In all cases tiles selected shall be fixed by approved fixers and a guarantee furnished for one year as to the water tightness and security of the roof.

PLUMBER

- 1. <u>Preliminary and General</u> Read and note all clauses in the Preliminary and General of this specification which shall apply to all work in this section.
- 2. General

The whole of the work shall be carried out and completed and tested in the best trade manner by licensed plumbers only, in accordance with the requirements of the Local Authority and Drainage and Plumbing Regulations 1959.

The Plumber shall arrange all permit fees.

Materials shall be the best of their respective kinds; lead, wrought iron and tin shall be the best commercial quality; copper shall conform to NZS 3501, and brass shall be approved composition and manufacture. All copper pipes shall be smooth full bore free from defects, seamless and suitable gauge for high pressure fittings. Joints in copper and other pipes shall be made in accordance with the specified regulations and shall be air and water tight.

3. Sheet Metal

Except where otherwise specified sheets shall be of the following gauge.-

Galvanised spouting	0.60 mm
Galvanised rainwater pipes	0.60 mm
Galvanised pipes and overflows	0.60 mm
Copper flashings, gutters and	
sumps	0.50 mm
Lead flashings	2 kg

4. Flashings

Flash wherever needed to keep watertight and weathertight, extreme care being taken to keep dissimilar metals from making contact. Also, as much as possible, use flashings of same metal in adjacent areas.

5. Spouting

Provide and fix 125 mm galvanised spouting. All joints to be soldered. Finish ends with topped end. Provide fall to downpipes. Support spouting on brackets at 750 mm maximum and 300 mm from end. Secure bracket to fascia with 50 mm galvanised screws to each bracket.

6. Cold Water Supply

Tap off from main in 19 mm copper or P.V.C. tube with stopcocks at point of entry to building. From 19 mm pipe run in 12.5 mm copper to all fittings including hot water cylinders and washing machine. Allow for providing a standpipe with hose connection front and rear of building. All pipes are to be secure and concealed behind linings when run in walls. 7. Hot Water Supply

Supply and install 136 litres hot water cylinder in cupboard in laundry and 40 litre cylinder in garage as shown. Allow to install and provide and fix 7.5 mm copper expansion pipe taken out through roof and flashed by roofer. If of mains pressure type provide a 19 mm diameter gate valve in an accessible position adjacent to the cylinder. From expansion pipes take off 7.5 mm copper branches to all fittings including washing machine. Hot water piping shall be well lagged with hair felt wire on and concealed. A pressure reduction valve system can be installed in lieu of expansion pipe.

8. Waste Pipe and Traps

Provide and fix drawn copper trap with cleaning eye to all fittings. Provide back vents as required. Waste pipe shall be drawn copper with proper fittings and shall discharge into gully traps. Provide cleaning eyes to all waste pipes at junctions and bends and provide all fittings and fixings complete. All exposed pipes and traps shall be chromium plated. If of a P.V.C. type install to manufacturers' specification and to the size and satisfaction to Local Authority requirements.

9. Terminal Vents

Provide Y junction in soil and fit 75 mm diameter drawn copper terminal vent carried up in duct with screws fixed in front. Continue through roof to required height and terminate with copper wire balloon. Roof penetration flashed by roofer. Position vents as shown on drawings.

- 10. Fittings
 - (2) W.C. pan complete with double flap plastic seat.
 - (2) W.C. cistern complete with C.P. or white P.V.C. flush pipe.
 - (1) 1655 mm bath. Type to be as selected.
 - (2) Basin wall or vanity. Type to be as selected.
 - (1) Sink top Formica or Stainless Steel as selected.
 - (2) Stainless steel shower tray 900 x 900 mm or 900 x 750 mm.
 - (2) 1 x Hot water cylinder 136 litres standard complete with electric element, thermostat, all taps, stopcocks, etc.

l x Hot water cylinder 40 litres standard complete with electric element, thermostat, all taps, stopcocks, etc.

- (1) Stainless steel single or twin tub combination on stand with cupboard below.
- (1) Sink faucet and taps.

(1) Bath faucet and taps.

And all other taps, etc., as required, which are to be chromium plated marked Hot and Cold with the exception of stand pipes. Consult with Owner on choice of brands of all taps and fittings. The Plumber shall provide and fix all other fittings and fixings necessary to complete the contract. Make complete connections, providing traps, vents, etc., in accordance with regulations.

11. Roof

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> Cover roof with Brownbuilt brand 0.60 mm galvanised trough type sheathing in long runs where shown, all fixed in accordance with manufacturers' specification and leave complete.

DRAINLAYER

- 1. <u>Preliminary and General</u> Read and note all clauses under Preliminary and General of this contract where they apply to this trade.
- 2. Extent of Work

STATE OF THE OWNER

Work in this section of the contract comprises all surface and foul water drainage up to above ground level to connect to Plumber's work. Include all pipes and specials, fittings, construction of manholes, all gully traps and connections for terminal vents, soil and waste pipes. The Drainlayer shall confer with the Plumber and shall arrange with the Contractor before the foundations are laid to fix the exact position of all connections of wastes and drains.

3. Standard of Work

The whole of this work shall be carried out by experienced tradesmen to the satisfaction of the Owner and the Local Council's Drainage Inspector. It shall conform to requirements of the Drainage and Plumbing Regulations of 1959, and the Local Council specification, the Contractor shall allow accordingly should conflict exist. Obtain all permits, service all notices and pay all fees required and arrange for all tests.

4. Materials

All materials shall be the best of their respective kinds. All cast iron pipes shall be free from rust and be of first quality and of even wall thickness and shall be hot dipped. Those for the use in foul drains shall have a wall thickness of not less than 4.7 mm. Cast iron fittings shall be of similar quality and have inspection plates as required. General drains shall be 100 mm diameter first class glazed earthenware with rubber ring joints.

5. Drain Trenches

The excavation of trenches for drains shall be accurately made with base clean and true to grade so that no unnecessary filling is required. Adequate width shall be allowed in accordance with depth of drain to enable laying and jointing to be properly carried out. Trenches shall be kept firm and dry and shall be opened up only in lengths that can be protected, utilised and refilled within a reasonable time.

6. Laying of Drains

All drains are to be laid on and surrounded to mid-point with 100 mm concrete composed of 6 part shingle to 1 part Portland Cement. Any cast iron drains that have been laid on any type of filling are to be set on a continuous bed of concrete 225 mm wide x 150 mm deep reinforced with three continuous 10 mm rods. The pipes are to be laid to straight lines and even grades with socket against fall in all cases.

7. Fittings

The plan shows the layout of the system. Additional fittings that are normally required such as inspection points and

inspection bends, etc., that may be required but are not specifically shown must be allowed for by the Drainlayer to comply with normal practice under the regulations or special requirements of Local Council.

8. <u>Jointing and Bedding of Pipes</u> The pipes are to be jointed or caulked with lead in a proper manner and each and every junction or change of direction is to have removable cover plates for inspection.

9. <u>Fall in Drains</u> The whole of the soil and stormwater drains are to be laid to a regular and even fall.

10. <u>Gully Traps</u>

Supply all gully traps and securely bed and build up with 5:1 concrete surround, 150 mm above finished ground levels. Form large and deep dishings and finish the surface with blue metal, dust and cement, one to one and steel trowel smooth. All gully traps are to be fitted with large cast iron gratings and also a grating or perforated plate above the wastes discharging into it.

11. Septic Tank

Provide and lay one only 2000 litre standard precast concrete septic tank in the position shown on drawings. Connect up to outflow pipe from house. Discharge into effluent drains as shown.

Effluent drains shall be laid to fall and shall be 100 mm diameter field tile drain backfilled with selected scoria. Cover with polythene and backfill with soil to finished ground level.

12. Soak Pits

Form soak pits where shown 1200 mm deep x 1200 mm diameter, filled with graded scoria.

13. Completion

Properly backfill all trenches, consolidate as filling proceeds and leave area in a tidy state.

SOLID PLASTERER

- 1. <u>Preliminary and General</u> Read and note all clauses under Preliminary and General of this specification where they apply to this trade.
- 2. <u>Work Included</u> The solid plastering of all interior floors, and the front and back porches, slabs and steps and terrace.
- 3. Materials

Cement:	Shall be as specified under Concretor.
Sand:	Shall be river sand sharp and course grained and
	free of any foreign matter.
Hydrated	Shall be mill hydrated of an approved brand.
Adhesion	If used, shall be in accordance with maker's
agents:	instructions.

4. Workmanship

All to be best trade practice and genrally where plastering is required by drawings it shall mean finishing to 12 mmthickness with a mix of one part cement to three parts sand with 10% of hydrated lime added and finished to a straight and even surface with a wood float.

5. Foundations

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Concrete foundation walls shall be prepared by removing projectors, making good any defects and finishing with a dash coat of 1 to 3 cement and sand applied to give a regular and satisfactory coverage.

6. Concrete Floors

Co-operate with Concretor and allow for plastering of main floor. Float up to true level and steel float finish to remove pattern. Do not over-trowel. A hard dense finish is required.

- 7. <u>Porch and Steps and Terrace</u> Plaster up in one operation. One coat 12 mm thick to terraces and porch slabs, 12 mm thick to verticals and sides, etc. Wood float up then given light sweeps with steel float to remove blemishes.
 - <u>Completion and Curing</u> Leave all work complete and clear away all plaster droppings. Keep work damp and maintain all finished to completion.

FIBROUS PLASTERER

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- 1. <u>Preliminary and General</u> Read and note all clauses under Preliminary and General of this specification where they apply to this trade.
- 2. Work Included

The manufacture and application of fibrous plaster or plasterglass sheet to wall or ceiling surfaces as specified. The manufacture and application of cornices or other decorative fibrous plaster items as specified.

- 3. <u>Materials</u>
- a) Gypsum casting plaster shall comply with AS A43.
- b) Water shall be clean and free from impurities which may affect the properties of the plaster. Water from mains controlled by a water supply authority shall be deemed to meet this requirement.
- c) Reinforcing fibre shall be sisal, hemp, flax, glass or other synthetic or natural fibre having similar properties, including absence of staining and capacity for even dispersion throughout the sheet. Sisal, hemp and flax fibre shall be well teased before use.
- d) Admixtures and release agents shall not be of a deleterious nature nor used in quantities sufficient to impair the properties of the sheet when used with or without decoration.
- 4. Workmanship

All fibrous plaster or plasterglass sheets and other products shall be manufactured and fixed, strictly in accordance with the Code of Practice of the New Zealand Fibrous Plaster Manufacturers' Association. The whole of the labour required for the erection, fixing, wadding and stopping shall be that of competent fibrous plaster tradesmen.

5. Framing

All noggings, trimmings, straightening and packing of studs or joists, necessary for the fixing of fibrous plaster products shall be provided and completed by the Builder before the commencement of such work. Timber framing shall comply with NZSS 3631 (framing grades) and shall be pre-dried to an equilibrium moisture content not exceeding 15-16%. The surface to which fibrous plaster is fixed must be clean, straight and dry.

6. Painting

All fibrous plaster or plasterglass sheets and other products shall be painted strictly in accordance with the specifications outlined below:

System	First Coat	·	Second Coat	Third Cost
No. 1	Pigmented	sealer	Primer undercoat	Full gloss
No.2	. 11	11	Semi gloss	Semi gloss
No. 3	. 11	11	Alkyd flat	Alkyd flat
No. 4	tt	11	P.V.A. plastic	P.V.A. plastic

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Allow overnight drying between coats except for system No. 4 where one or two hours drying time, according to manufacturers' instructions may be allowed between second and third coats.

N.B.

The fibrous plasterer will not accept responsibility for the effect of glancing light on fibrous plaster with a gloss paint finish.

ELECTRICIAN

- 1. <u>Preliminary and General</u> Read and note all clauses under Preliminary and General of this specification where they apply to this trade.
- Fees Pay all fees and charges and obtain all necessary permits for this trade.
- 3. <u>Scope of Work</u> Carry out the whole of the electrical installations in strict accordance with the latest Electrical Wiring Regulations and Local Authority's by-laws, and meter wiring diagrams.

4. <u>Materials and Workmanship</u>

All materials used under this contract shall be of approved British or New Zealand Standard Specification. Allow for all materials necessary to complete the contract whether specified or not. All work shall be carried out by a Registered Electrician in accordance with regulations and best trade practice and in a manner which will cause minimum inconvenience to other workmen and the work as a whole. Do all cutting away, drilling, etc., and with timber cut the minimum away only for the entry of cables.

5. <u>Co-operation</u>

Co-operate with the Building Contractor and other sub-contractors in all phases of work. Give ample notice to enable the Contractor to arrange the necessary void, chase data, etc.

6. Completion and Connection of Power

Leave work complete, pay all charges and arrange for all inspections and tests and for the connection of power to the works. It is the responsibility of the Electrical Contractor to ensure that no delay is occasioned to the job once the contract is complete.

7. Power Board Supply

Arrange with the Power Board, allow for and pay all fees for the connection of an underground, or overhead, supply to the residence.

- 8. <u>Meter Box</u> Provide and install recessed meter box where shown on plan. Confer with Carpenter for trimming same.
- 9. <u>Main Switchboard</u> Provide and install in recess main switchboard complete with all necessary control and auxiliary equipment.

10. <u>Electric Stove</u>

Owner will supply oven and stove top. Provide and fix a 30-amp flush switch for stove and 30-amp switch for oven, sufficient cable for connections and allow for installation.

11. Water Heater

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Allow for the permanent connection of the water heaters to the electrical system. Provide and install 3 K/W element and thermostat to 136 litres hot water cylinder provided by the Plumber. Refer Cl. 3 of this section. Provide and install suitable element to heater in en-suite.

12. Power Points

All wall plugs shall be 230 v. 10-amp 3-pin flush type. Generally install plugs 300 mm above floor or 225 mm above bench top. Points to washer/dryer space and refrigerator 1200 mm from floor. The exact position of all power points shall be determined on the job by the Owner.

13. Lights

All lights to be first quality, plastic batten holder shall be reinforced. All roses andholders not covered by fittings shall be white.

14. Light Switches

Light switches generally shall be 10-amp, all insulated P.D.L. micro-gap type or equivalent. Where indicated fit flush type with plain bakelite flush plate. Fix switches generally 1200 mm above floor.

- 15. <u>Light Points</u> Refer to drawings for positions.
- 16. <u>Power Points</u> Refer to drawings for positions (see above).

PAINTER AND GLAZIER

Preliminary and General Note all clauses under Preliminary and General of this specification which shall apply to this section of the work.

<u>Materials</u> Generally all materials shall be of N.Z. manufacture of approved brands and of the paint selected respective coats shall be of the same brand.

3. Workmanship

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All work shall be carried out in accordance with good trade practice. Surfaces shall be clean and properly prepared before coating and work shall be in accordance with Code of Practice NZS 2239, "Painting of Buildings".

4. Colour Scheme

The Owner will select from standard colour charts, colours he will require and Contractor is to allow for picking out sashes, doors, porches or any other reasonable colour change required.

5. Stopping

After priming all nail holes or joints are to be stopped and cleaned off before undercoating for painted work and for varnished work holes, etc., are to be stopped with matching putty after first coat of sealer.

6. Painting of External Woodwork

After priming all external woodwork and adjacent metalwork such as flashings, spouting and downpipes, is to be given one good coat of undercoat followed by finishing coat of high gloss paint. Priming coat before painting shall be well brushed in and all faces shall be covered, ends of laps and tops and sides of sashes, door, etc.

7. Painting of Interior Surfaces

Refer to plan or separate instructions to accompany this specification. Wallboard and ceilings as required to be given one coat of sealer and finished with two coats of approved paint finishing flat or semi-gloss as required. Where full gloss is required such as kitchen and bathroom, finishing coat shall be full gloss enamel.

8. Varnishing

Where varnishing is required such as doors, architraves and skirtings, give one coat of approved P.V.A. sealer followed by two coats of clear varnish finishing egg-shell gloss and lightly sanding between coats.

9. <u>Paperhanging</u> By Owner.

10. Glazier

Glaze all sashes, glass doors or screens with appropriate weight glass properly fixed and puttied or beaded into rebates. Where required glazing shall be selected obscure patterned glass.

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- 11. <u>Mirror</u> Provide 6 mm plate glass mirrors mounted with clips above vanity in bathroom and en-suite as directed by Owner.
- 12. Completion

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The Painter and Glazier are to do all that is required of their respective trades to leave the work complete and all must be left clean including all glass at completion.



15 November 1999

DIANNE GAIL HAWKINS & PHILIP VICTOR HAWKINS 13 TRIG RD WHENUAPAI WAITAKERE CITY 1008

Dear Sir/Madam

Resource Consent Application Number-RMA992188 Location 15 TRIG RD, WHENUAPAI, WAITAKERE CITY 1008?

Civic Centre

Henderson Waitakere City

6 Waipareira Ave

Private Bag 93109

Waitakere City

I am pleased to advise that your Resource Consent (Planning) application has been considered and consent has been granted pursuant to sections 94, 104, 105, and 108 of the Resource Management Act 1991.

The report considering your application and the decision which has been made is attached. The conditions must be met for your consent to be valid.

Please note also that you must establish the activity within two years. If that does not happen the consent lapses and you may need to apply for an extension or a new consent.

If you are dissatisfied with the decision or conditions of consent you have an opportunity to object to the Council. If you want to do this you will need to write a letter outlining your concerns. In this letter you should refer to section 357 of the Resource Management Act 1991 which covers objections to decisions (see the guideline attached). Any objections must be made in writing within 15 working days of your receipt of this letter. There is a lodgement fee of \$195.00 (including GST) which is to accompany this objection letter.

Please contact PETER REABURN of the Resource Consents Section (extn) if you have any general queries about the enclosed report or decision.

Yours faithfully

Hugh Briggs MANAGER : RESOURCE CONSENTS

Waitakere City Council Telephone 09 836 8000 Facsimile 09 836 8001 DX CX 10250 Auckland Mail Centre

Email: info@waitakere.govt.nz



TTY OF WAITAKERE DISTRICT PLAN

NON-COMPLYING ACTIVITY REPORT

SUMMARY OF PROPOSAL

To formalise a current long-standing rural lease arrangement to a full (freehold) subdivision.

REPORT PREPARED BY: Peter Reaburn DATE RECEIVED: 7/10/99 APPLICANT: P.V. Hawkins & D.G. Hawkins **BUILDING CONSENT NO.:N/A** FILE ADDRESS: 13-15 Trig Road, WARD: Massev Whenuapai **LEGAL DESCRIPTION:** Lot 5 DP 66045 2905m² SITE AREA: **TRANSITIONAL PLAN ZONING:** Rural 1 SECTION: Waitemata PROPOSED PLAN: HUMAN ENVIRONMENT: Countryside NATURAL AREA: General (Special Soils) ADDRESS FOR SERVICE: P.V. & D.G. Hawkins 13 Trig Road Whenuapai FURTHER INFORMATION REQUIRED: No

PROPOSAL

The applicant seeks consent to formalise an existing lease into a full freehold subdivision. The original lease has been in existence since 1981 and the applicants have lived on the site since that time. The balance of the site (3.7ha) is in separate ownership.

SITE AND NEIGHBOURHOOD DESCRIPTION

The subject site is on rural land in an area generally comprising of life-style sized blocks. There are a number of smaller sites in Trig Road, closer to the Hobsonville Road end. The site contains a substantial dwelling with gardens, etc and has the appearance of a separate site. The balance of the property does not contain a dwelling. It should be noted that the proposed SH18 motorway runs to the north of, but does not affect, the subject site.

DISTRICT PLAN REQUIREMENTS

The proposal is a **non-complying activity** under the Transitional District Plan. The minimum site size is 5ha in the relevant Rural 1 zone.

Under the Proposed District Plan, the proposal also falls to be considered as a **non-complying activity**. The Proposed Plan has a minimum site size of 4ha. The Plan permits the establishment of subdivision at a lower site size (averaging 2ha), but only with an approved structure plan in place. There is no structure plan in place for this area.

The Transitional Plan subdivision processes have effectively been replaced by the new Plan provisions. In any case the Transitional Plan policies are not regarded as being appropriate to a Resource Management Act analysis. In these circumstances, it is considered that only limited regard should be had to the provisions of the Transitional Plan. In support of this assertion, it is noted that the Environment Court has previously held, in relation to a different matter, that relatively little weight should be given to a rule that is not integral with a coherent plan of inter-related objectives, policies and rules (refer *Noel Leeming Appliances v North Shore City Council* A006/93).

The Proposed Plan contains a number of policies that are relevant to the consideration of an application for subdivision. These are referred to later in this report.

STATUTORY REQUIREMENTS

The proposal requires consideration as a non-complying activity under the provisions of the Resource Management Act 1991. Section 105(2A) of the Act sets a threshold test which all resource consent applications for non-complying activities must first pass before a consent authority has jurisdiction to grant consent, having regard to the matters specified in Section 104. In short, the proposal must be able to establish and operate without generating more than minor adverse effects on the environment, <u>or</u> must not be contrary to the objectives and policies of at least one of the relevant District Plans that apply in the district (i.e., either the Transitional or Proposed Plan).

The assessment contained later in this report demonstrates that the proposal would generate no more than minor adverse effects on the environment. Jurisdiction to grant consent has therefore been established. However, for a consent authority to grant consent to a non-complying activity application, there should be some exceptional element to the proposal. If such unique circumstances do not exist, then the proposal would effectively compromise the integrity of the District Plan, and public confidence in the consistent administration of the Plan may be undermined. In this particular case the proposal is considered unique. It involves a long-standing lease and occupation of the subject site. The subject site and the balance land have effectively been in different occupation/activity for almost 20 years.

In this instance, the application has been processed on a non-notified basis in accordance with the provisions of Section 94(2) of the Act. Specifically, the proposal would generate no more than minor adverse effects on the environment, and it is not considered that any body or person would be adversely affected by the granting of consent. Note in this respect however that there has been a wide range of support for this proposal from local residents.

ENVIRONMENTAL ASSESSMENT

The Proposed District Plan has been formulated with an "effects-based" emphasis. As a result, any consideration of effects arising from a proposal is likely to consider largely the same matters as an analysis of the degree to which a particular proposal is consistent with the relevant assessment criteria of the Plan. For this reason, this assessment focuses only on the relevant assessment criteria from the Proposed Plan, and does not include any separate assessment of environmental effects.

District Plan Assessment Criteria

It will be noted that this is the second application made for the same subdivision proposal. Consent was declined in April 1996. A major reason for refusal was "the potential to result in the loss of high quality soils which is a precious finite resource".

Assessment criterion 6(a) of the Countryside Environment subdivision rules refers specifically to the need to recognise natural resources. This area is identified as having "special soils" (generally, Class II soils), and the issue identified in 1996 still has some relevance. However, there have been significant developments since 1996 which warrant reassessment of the conclusion which was reached at that stage.

First, it has been recognised that, while soils in this area are good – the quality is very "patchy". This affects the integrity of the soil resource on a wider scale.

Second, there has now been a decision made by the Council to open up the opportunity for a "structure plan" approach to subdivision in this area which would lead inevitably to rural-residential type development. Indeed, a structure plan is already being developed for the Waiarohia Catchment, not far east of the subject property. Introduction of a structure plan approach recognises the acceptable potential of this area for development for other than purely "rural" purposes.

Third, and probably most significant, the Regional Growth Strategy has been finalised. The Regional Growth Strategy identifies this area (lying south of the proposed motorway and between that motorway and Hobsonville Road) as an urban growth area. The Waitakere City Council has very recently initiated a planning study which will inevitably lead to the urban development of this area.

The significance of this subdivision needs to be considered in light of the above changed circumstances. Those changed circumstances add to the circumstances which have already existed on this site – i.e. the fact that the property has effectively been in two parts since 1981, and the applicants portion of the subdivision has been developed with a dwellinghouse and surrounds since that time.

Other relevant assessment criteria relate to roading, drainage and amenity impacts.

With regard to road access, the existing dwellinghouse obviously already has road access, and there is quite suitable access to the balance site as well.

With regard to stormwater disposal, the subject site and the existing development on it has an adequate disposal regime, and any future development of the balance site will need to satisfy appropriate building consent procedures.

With regard to wastewater disposal, the existing septic tank is situated outside the current lease area and would need to be relocated within the new subdivided lot. A preliminary investigation carried out in 1996 indicated that this could be done without difficulty. However, a suitable condition of consent should be imposed to ensure this.

In recognition of the fact that a dwellinghouse could be erected on the balance 3.7ha site, a suitable reserves contribution should be imposed as a condition of consent.

There will be no direct amenity impact arising from the subdivision itself. There could well be a dwellinghouse erected on the 3.7ha balance land, but that development would not alter the general character and appearance of the area to any significant degree.

There are no matters appearing in the relevant policies relating to this proposal which are seen to be either relevant or compromised by the application. Similarly, there are no Part II RMA matters, or any matters under the Regional Policy Statement which are of concern. In the latter respect it will be noted that the Auckland Regional Council did not make any submission to the original application in 1996, and the situation in a regional context has been made much more flexible since that time with the indications given in the Regional Growth Strategy.

CONCLUSION

There is no doubt this area will be developed for urban purposes in the future. That should not be an indication that development may now proceed - generally speaking further development needs to await the conclusion of proper planning processes. However, that future state is relevant when considering this particular application, which has its own unique circumstances. The proposal seeks to confirm, by way of subdivision, an arrangement which has been in existence for many years. While there has never been an application for a dwelling on the balance land, that land has been under separate control for many years, and there would be a quite compelling argument- even if a subdivision was not proposed - for a dwellinghouse to be erected on that larger block. Effectively, that extra dwellinghouse is the only extra development that would be made possible through this subdivision. The applicant's own house will remain as-is - subject to alterations to satisfy infrastructure (and particularly septic tank) arrangements. These unique circumstances are regarded as being a sufficient argument to justify approval of this application now, rather than awaiting the more intensive development which will inevitably occur in the area. The fact that there will be more intense development is relevant in considering, ultimately, the impact on special soils and on amenity. This will be a built-up area with a quite changed character. In that context, this proposal has quite minor effect.

NON-NOTIFICATION

This application is considered to have minor impact only. In light of the future developments in this area, as described above, it is not considered that there would be any party affected by the granting of consent. The future redevelopment of this area for urban purposes is now well-known and expected. There are also no special circumstances which it is considered require notification of the application.

MONITORING

Conditions of subdivision consent will need to be monitored in accordance with normal practice.

RECOMMENDATION

That, pursuant to Sections 88, 94, 104, 105 and 108 of the Resource Management Act 1991, being satisfied that no body or person is adversely affected, consent be granted to the application by P.V. & D.G. Hawkins to subdivide two sites (2905m² and 3.7ha) at 13-15 Trig Road, Whenupai, being Lot 5 DP 66045, for the following reasons:



Subject to conditions, the proposal will have no more than minor adverse environmental effect.

- (2) The proposal is based on unique circumstances, involving a lease situation which has existed since 1981, and a confirmation of that lease arrangement through the applicant's occupation of the site.
- (3) In view of the intended substantial redevelopment of this general area, the amenity impacts created through subdivision approval are no more than minor in effect.

Consent is subject to the following conditions:

- (1) The application should be subject to the preparation, submission and approval of a scheme plan of subdivision. That scheme plan shall be in general accordance with the application, subject to any alterations required to accommodate necessary infrastructure such as wastewater disposal. The Council reserves the right to impose further conditions relating to that scheme plan of subdivision, in particular relating to water supply, stormwater disposal, wastewater disposal and road upgrading.
- (2) A reserves contribution is to be paid equal to 6% (plus GST at 12.5%) of Quotable Value New Zealand's market value (exclusive of GST) to be obtained for the smaller of the two lots proposed (pursuant to Section 407 of the Act).
- (3) The applicant shall undertake all works and pay all fees necessary for completion of the above.

Report prepared by:

Peter Reaburn

SERVICE MANAGER: RESOURCE MANAGEMENT/BUILDING

Consent granted as recommended

Philip Brown PRINCIPAL PLANNER

Date: 12/11/00

Date: 11/11/55

Please contact Peter Reaburn (Ph 836 8014) if you have any queries about this report.



APPLICATION FOR RESOURCE CONSENT UNDER SECTION 88 OF THE RESOURCE MANAGEMENT ACT 1991

OFFICE USE ONLY	
Receipt Date:	
Initials:	,
Register No: 272/88	•
Planner:	
Date By:	

TO: The Chief Executive Waitakere City Council Private Bag 93109 Henderson WAITAKERE CITY 1231

ATTN: Consents Manager

Please read the information sheet accompanying this form first
APPLICANT: P.V. HAWKINS, D.C. HAWKINS agent/owner ADDRESS OF PROPERTY: 13-15 TRIG Rd When wapai
LEGAL DESCRIPTION: LOT 5 DP 66045
TOTAL SITE AREA: 2905 M ²
UNIT SITE AREAS: (if applicable to residential developments only)
BUILDING CONSENT APPLICATION NO: (if applicable) 9 /
DESCRIPTION OF PROPOSAL: (outline this on the attached sheet)
THE TYPE OF RESOURCE CONSENT SOUGHT IS: (✓ box)
SPECIFY THE PARTICULAR RULES(S) OF THE DISTRICT PLAN UNDER WHICH A RESOURCE CONSENT IS REQUIRED: (i.e. what aspect of your proposal needs a resource consent)

ASSESSMENT OF EFFECTS - DESCRIBE THE EFFECT OF THE PROPOSAL ON THE ENVIRONMENT (including neighbouring properties) AND MEASURES INCORPORATED INTO THE PROPOSED ACTIVITY TO REDUCE EFFECTS TO AN ACCEPTABLE LEVEL. The attached sheets provide examples of categories under which potential environmental effects may be described and provides space to describe measures to reduce effects (attach further written statements as necessary).

Please note that particular information requirements and assessment criteria applicable to various resource consent categories are available from the Council on request.

PLEA REQI	SE INDICATE WHICH	t (IF ANY) OF TH POSAL:	E FOLLOWING	ADDITIONAL	RESOURC	E CONSENTS ARE
		ISENT/WATER PE	RMIT/DISCHAR	GE PERMIT.		
- V.	HAVE THESE BEE	N APPLIED FOR:	YES	: NO : N/A		
			DATE OF AP	PLICATION: _	····	
				COUNCIL:	<u> </u>	
NAM	ES AND ADDRESSES	OF OWNERS AND	OCCUPIERS (OF THE PROP	ERTY (if othe	er than applicant):
OWN	ER(S):			UPIER(S):		
<u></u>						
ADDF	RESS FOR CORRESP					
PHO	NE NO: BUSINESS	:		НС	DME: 4/16	8082
	FAX:	416	8002			
					SPECTING	
					OF LOTING (
SIGN	ATURE: AU	shi		DATE:	4.9.	99
MATI	ERIAL REQUIRED TO	ACCOMPANY TH		N (N.B. see a	so attached	information sheet)
1.	Attach a further ass accordance with th Controlled Activity s	essment of any eff Fourth Scheduk uch an assessmen	fects that the pro to the Act (av t is not necessar	pposed activity vailable from t y unless specif	may have o he Council o fically require	n the environment in on request). (For a d in the District Plan).
2.	Attach a set of accustil be necessary to	urate to-scale plans supply an addition	. Note: if a bui al set of plans for	Iding consent this application	application ha	as been lodged it will
3.	Attach written conse is in joint ownership be signed also).	ent of affected partie , such as husband	es (eg neighbour and wife, all lan	rs) where this i downers must	s required. (l sign. A cop	NB: where a property y of the plans should
4.	Attach other inform Regulations.	ation (if any), req	uired to be incl	uded in the a	pplication by	the District Plan or
5.	For subdivision con	sent application only	y - attach informa	ation in accord	ance with Se	ction 219 of the Act.
PAY	MENT OF THE CORRI	ECT PROCESSING	FEE/DEPOSIT		WITH THIS	APPLICATION.
FUR	THER INFORMATION	WILL BE REQUES			SSARY.	
PLE# WEE	ASE ALLOW ADEQUA KS) PRIOR TO MAKIN	ATE TIME FOR IN NG ENQUIRIES CO	ITIAL REVIEW	AND SITE INS OGRESS OF	SPECTION (A APPLICATION	APPROXIMATELY 2 ON PROCESSING.
PL	EASE RING THE PLA	NNING SECTION	DN 836-8013 WI	TH ANY QUE	RIES REGAR	DING THIS FORM

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Waitakere City Council	Waitakere City Council Civic Centre	Telephone 09 836 8000	DX CX 1025	0 Auckland Mail Centre
Ţe Taiao o Waitakere	6 Waipareira Ave Waitakere City	Facsimile 09 836 8001	GST	Registration No
	Private Bag 93109 Henderson Waitakere City		·	
HAWKINS, DIANNE GAIL	· ·	. C	Date:	07/10/1999
WHENUAPAI WAITAKEBE CITY 1008		· C	Customer No:	601201
		h	nvoice No:	830127

Owners Name: Project Address: 15 TRIG RD WHENUAPAI

Invoiced to Date: 0.00

Application No: RMA 992188

Fee Code	Description	Amount
SM2	SM - Non Notified	400.00

This account includes a total GST content of 44.44



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DESCRIPTION OF PROPOSAL (Please describe your proposal as fully as possible)

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WAITAKERE CITY COUNCIL

RESOURCE CONSENTS SUMMARY SHEET (N.B. for major applications separate reports should be produced)

Possible Effect*	Measures Proposed to Mitigate Effects to an Acceptable Level
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For guidance on possible effects see Assessment Criteria for Resource Consents applicable to your proposal. Examples of effects may include location, size and design of buildings, removal or alteration of landform and vegetation, traffic and parking impacts, noise, odour, health and safety.

INFORMATION REQUIREMENTS FOR LAND USE CONSENTS ee Rule 1.1 Information Requirements Proposed District Plan)

Where relevant to the circumstances of the application, the following information should be provided:

- (a) A site plan(s) to the scale of 1:100, 1:200 or (for large sites) 1:500, showing:
 - the location of any existing or proposed buildings.
 - the location of existing or proposed driveways and carparking areas.
 - details of landscape features (including any natural landscape elements), vegetation, natural water systems and soils.
 - existing or proposed planting and screening.
 - existing or proposed signs.
 - existing or proposed locations for hazardous facilities, and associated protection structures.
 - any heritage item or waahi tapu.
 - details of any earthworks proposed.
 - contours and/or spot levels.
 - the nature and location of any reflective surfaces and, where relevant, colour.
 - the location, nature and power of lighting on the site and the means of directing light spill.
 - the present or proposed future use to which all parts of the site are to be put.
- (b) For any building proposed as part of a resource consent:
 - elevations to a scale of 1:100.
 - details of materials and colour to be used.
 - the distance between buildings and site boundaries or unit area boundaries (where applicable).
 - the height and outline of buildings and the relevant recession plane.
 - floor plans showing the room layout of each and every floor of buildings, whether existing or proposed.
 - the present or proposed future use to which all or any part of buildings are to be put.
- (c) A report assessing the effects the proposed activity will have on natural features and any identified heritage item or waahi tapu.
- (d) An assessment of the effects of the proposal carried out by an appropriately qualified person including a covering statement in respect of each of the assessment criteria relevant to the application.

FURTHER INFORMATION

As provided for by section 92 of the Act, the Council will require further information from an applicant where it is necessary to obtain a better understanding of the nature of the activity, the effect it may have on the environment, or the ways in which any adverse effect may be mitigated. A report may also be commissioned at the applicant's expense, on any matter raised in relation to the application or on any environmental assessment of effects.

INFORMATION REQUIREMENTS FOR SUBDIVISION CONSENTS (see Rule 1.2 Information Requirements Proposed District Plan)

Where relevant to the circumstances of the application, the following information may be required by the Council:

- (a) All of the information required by section 219 of the Act.
- (b) A plan drawn to scale clearly showing the proposal.
- (c) The position of all proposed site boundaries.
- (d) The site area and net site area of all new sites.
- (e) Indicative building positions and indicative driveway access points from roads and the driveway within sites.
- (f) The location of all natural features.
- (g) The location and extent and volume of proposed earthworks.
- (h) New roads, with their widths and areas (and grades if on sloping ground), service lanes, pedestrian accessways, driveways and access lots.
- (i) Proposed easements and covenant areas.
- (j) The location and areas of new reserves to be created.
- (k) Locations of any areas considered unsuitable for building purposes because of natural hazards.
- (I) All topographical information including contours.
- (m) Any heritage item or waahi tapu.
- (n) A report assessing the effects the subdivision will have on natural features and any identified heritage item or waahi tapu.
- (o) An assessment of the effects of the subdivision carried out by an appropriately qualified person including a statement covering each of the assessment criteria relevant to the application.

FURTHER INFORMATION

As provided for by section 92 of the Act, the Council will require further information from an applicant where it is necessary to obtain a better understanding of the nature of the activity, the effect it may have on the environment, or the ways in which any adverse effect may be mitigated. A report may also be commissioned at the applicant's expense, on any matter raised in relation to the application or on any environmental assessment of effects.



RESOURCE MANAGEMENT ACT 1991

HOW TO MAKE A NON-NOTIFIED APPLICATION FOR RESOURCE CONSENT

(For controlled activities, limited discretionary activities and 'minor' discretionary and non-complying activities).

INFORMATION TO BE PROVIDED

To avoid delay in the processing of your application the following information **must** be provided:

1. <u>PLANS</u> fully outlining the proposal. A site plan, elevation plans, and floor plans are required for most proposals. If a building consent application has been lodged it will still be necessary to supply an additional copy of the plans for this application. Ground levels at the boundary and floor levels of buildings must be shown. <u>Plan accuracy is the responsibility of the applicant</u>

Note: The plans may need to show the following further information:

- (a) Landscaping, fencing, and site layout including living courts, and
- (b) Location and design of vehicle access, parking and manoeuvring, and
- (c) The design and external appearance of buildings, and
- (d) Any areas of existing or proposed native bush clearance.
- (e) The location and extent (in m³) of any earthworks.
- 2. <u>WRITTEN CONSENT</u> of bodies or persons the Council considers may be affected by your proposal. Affected bodies or persons must provide their written consent to the proposal. They should also sign a copy of the plans to show that they have actually seen the proposal. Note: If there are multiple owners of the affected property, eg husband and wife, <u>all</u> owners of the property must sign.
- 3. <u>YOUR ASSESSMENT</u> of what 'effect', if any, your proposal will have, for example on neighbouring properties. Examples of categories under which effects may be described are listed on Attachment A to the application form. Measures that you are willing to take to reduce effects to an acceptable level should be described on Attachment A and incorporated, where appropriate, on building and site plans. See also the district plan "assessment criteria" which are relevant to your application these are available free from the Council.

4. **REASONS** justifying the proposal.

REPORT AND DECISION

A report explaining the proposal in terms of the requirements of the Resource Management Act and the District Plan is prepared for Council to assist it in its decision. You are notified of Council's decision within 20 working days of receipt of full information, and have a right of appeal to the Environment Court if you are dissatisfied with the decision.

- 5. <u>Deposits Non-notified Resource Consent</u> (GST inclusive)
 - \$112.50 quick (no site visit) consent application

\$400.00 other non-notified consent applications

Note: Additional fees may be charged for more complex applications. Charge Account: 35-5310-22800-534

6. Building Consent Applications

Where a building consent application has already been lodged please indicate on the application form the building consent application number.

IF YOU REQUIRE ANY FURTHER INFORMATION CONTACT A RESOURCE PLANNER AT THE COUNCIL, PHONE 836-8013



9 February 2021

Tonkin & Taylor 105 Carlton Gore Road AUCKLAND 1023 Attention: Rebecca van der Krogt

Dear Rebecca

Site Contamination Enquiry – 15 Trig Road, Whenuapai

This letter is in response to your enquiry requesting available site contamination information within Auckland Council records for the above site. Please note this report does not constitute a site investigation report; such reports are required to be prepared by a (third-party) Suitably Qualified and Experienced Practitioner.

The following details are based on information available to the Contamination, Air & Noise Team in the Resource Consent Department. The details provided may be from former regional council information, as well as property information held by the former district/city councils. For completeness the relevant property file should also be requested to obtain all historical records and reports via 09 3010101 or online at:

https://www.aucklandcouncil.govt.nz/buying-property/order-property-report/Pages/order-property-file.aspx.

1. Hazardous Activities and Industries List (HAIL) Information

This list published by the Ministry for the Environment (MfE) comprises activities and industries that are considered likely to cause land contamination as a result of hazardous substance use, storage, and/or disposal.

There is no information held within our records to suggest this site has been subject to HAIL activities.

Please note:

- If you are demolishing any building that may have asbestos containing materials (ACM) in it, you have obligations under the Health and Safety at Work (Abestos) Regulations 2016 for the management and removal of asbestos, including the need to engage a Competent Asbestos Surveyor to confirm the presence or absence of any ACM.
- Paints used on external parts of properties up until the mid-1970's routinely contained lead, a poison and a persistent environmental pollutant. You are advised to ensure that soils affected by old, peeling or flaking paint are assessed in relation to the proposed use of the property, including high risk use by young children.

2. Consents and Incidents Information (200m radius of the selected site)

The Council database was searched for records of the following activities within approximately 200 metres of the site:

- Pollution Incidents (including air discharges, oil or diesel spills)
- Bores
- Contaminated site and air discharges, and industrial trade process consents
- Closed Landfills
- Air quality permitted activities



All Permitted Activities 🜟

All Bores ★

Relevant details of any pollution incidents and consents are appended to this letter (Attachment A). Please refer to the column titled 'Property Address' on the spreadsheet to aid in identifying corresponding data on the map.

While the Auckland Council has carried out the above search using its best practical endeavours, it does not warrant its completeness or accuracy and disclaims any responsibility or liability in respect of the information. If you or any other person wishes to act or to rely on this information, or make any financial commitment based upon it, it is recommended that you seek appropriate technical and/or professional advice.

If you wish to clarify anything in this letter that relates to this site, please contact <u>contaminatedsites@aucklandcouncil.govt.nz</u>. Any follow up requests for information on other sites must go through the online order process.

Should you wish to request any of the files referenced above and/or listed in the attached spreadsheet for viewing, please contact the Auckland Council Call Centre on 301 0101 and note you are requesting former Auckland Regional Council records (the records department requires three working days' notice to ensure the files will be available).

Please note Auckland Council cost recovers officer's time for all site enquiries. As such an invoice for \$128 for the time involved in this enquiry will follow shortly.

Yours Sincerely,

Contamination, Air and Noise Team Specialist Unit | Resource Consents Auckland Council The rules and associated assessment criteria relating to the control of contaminated sites in the Auckland region are specified in the following documents:

- The National Environmental Standards for Assessing and Managing Contaminants in Soil to Protect Human Health (NES Soil);
- The Auckland Unitary Plan Operative in part (AUP)
- Health and Safety at Work (Asbestos) Regulation 2016 (Asbestos Regulations).

The NES Soil considers issues relating to land use and the protection of human health while the AUP has regard to issues relating to the protection of the general environment. The management of asbestos in soils is regulated under Asbestos Regulations. As asbestos is principally considered to be a human health contaminant the Asbestos Regulations (like the NES Soil) currently only considers issues relating to the protection of human health.

In order to help achieve compliance with the Asbestos Regulations, WorkSafe New Zealand has prepared an Approved Code of Practice (ACoP): Management and Removal of Asbestos (September 2016). The ACoP refers readers to the "New Zealand Guidelines for Assessing and Managing Asbestos in Soil" (herein referred to as the Asbestos-in-Soil Guidelines) which were published in November 2017 by BRANZ Ltd.

The requirement under each regulatory system (the NES Soil, AUP and Asbestos Regulations) for contaminated sites are described in this appendix.

G1 NES Soil

The NES Soil came into effect on 1 January 2012. This legislation sets out nationally consistent planning controls appropriate to district and city councils for assessing contaminants in soil with regard to human health.

The NES Soil applies to specific activities on land where a HAIL activity has, or is more likely than not to have occurred. Activities covered under the NES Soil include soil disturbance, soil sampling, fuel systems removal, subdivision and land use change.

As buildings at the site were built and/or demolished during the period when asbestos and lead based paints were in common use, and filling may have occurred during site development. It is therefore possible that these activities could be considered to be HAIL activities if contaminants are present at concentrations that pose a risk to human health or the environment.

In order to confirm if consent is required for future change in use or soil disturbance of the site:

- Soil testing is required to determine if contaminants (specifically asbestos, metals and PAHs) are present at concentrations that pose a risk to human health or the environment; and/or
- The scale and duration of works should be evaluated against the permitted activity thresholds when the development details have been resolved.

Council ordinarily requires that a Site Management Plan (SMP) is provided in support of any consent application.

If all of the conditions of a Permitted Activity can be met then resource consent is not required. If the permitted activity provisions cannot be met then consent will be required either as a controlled activity or restricted discretionary activity, determinant on the degree of ground contamination present. If investigations to quantify contamination are not carried out then a discretionary consent is required. The conditions for the soil disturbance as a permitted activity are presented in **Tables F.2** and **F.3**. The permitted activity volumes may depend on the extent the HAIL activity area of the site and would require further consideration during the design process.

NES	NES Soil – Soil disturbance permitted activity conditions (Regulation 8(3))				
а	Implementation of controls to minimise exposure of humans to mobilised contaminants.				
b	The soil must be reinstated to an erosion free state within one month of completing the land disturbance.				
с	The volume of the disturbance of the piece of land must be no more than 25 m ³ per 500 m ² .				
d	Soil must not be taken away unless it is for laboratory testing or, for all other purposes combined, a maximum of 5 m ³ per 500 m ² of soil may be taken away per year.				
е	Soil taken away must be disposed of at an appropriately licensed facility.				
f	The duration of land disturbance must be no longer than two months.				
g	The integrity of a structure designed to contain contaminated soil or other contaminated materials must not be compromised.				

Appendix G Table 1: NES Soil permitted activity conditions for soil disturbance

The key thresholds which the proposed development would need to comply with in order to be considered a permitted activity are summarised in **Table F.3**.

Appendix G Table 2: Soil disturbance permitted activity thresholds for the site

HAIL activity area of the site	2,322 m ² based on the area surrounding the residential dwelling and associated shed.
Maximum permitted volume of disturbance	Approximately 116.1 m ³
Maximum permitted volume of soil removed from site	Approximately 46.4 m ³ per year
Maximum permitted duration of earthworks	Two months

For a change in land use, the requirement for a permitted activity is that is "highly unlikely that there will be a risk to a human health if the activity is done to the piece of land". Soil testing is required to confirm that the change of land use can be undertaken as a permitted activity.

G2 AUP

The Auckland Unitary Plan – Operative in part (AUP) was released on 15 November 2016. This version supersedes the Decisions Version, the Independent Hearings Panel Recommended Version and the original proposed version.

The contaminated land rules, set out in Chapter E Environmental Risk Section E30, are not subject to any appeal, hence, the rules can now be 'treated as operative' under <u>section 86F of the Resource</u> <u>Management Act 1991</u>. Additionally, the provisions in the Auckland Council Regional Plan: Air Land and Water no longer need to be considered.

The contaminated land rules are set out in Chapter E Environmental Risk Section E30.

Rule E30.6.1.4 states that if soil concentrations or the 95% upper confidence limit (UCL) of soil concentrations are below the specified permitted activity criteria detailed in Table E30.6.1.4.1, then a resource consent is not required for the site. If soil contaminant concentrations exceed these
relevant guidelines or separate phase is present, then a controlled activity consent for the ongoing discharge of contaminants is required.

As described in **Section 6.1.2** of this report we expect consent under Section E30 of the AUP will only be required on the same basis as under the NES Soil.

F4 Health and Safety at Work (Asbestos) Regulations 2016

The management of asbestos in soils is regulated under the Health and Safety at Work (Asbestos) Regulations 2016 (Asbestos Regulations). In order to help achieve compliance with the Asbestos Regulations, WorkSafe New Zealand has prepared an Approved Code of Practice (ACoP): Management and Removal of Asbestos (September 2016). The ACoP refers readers to the *"New Zealand Guidelines for Assessing and Managing Asbestos in Soil"* (herein referred to as the Asbestosin-Soil Guidelines) which were published in November 2017 by BRANZ Ltd.

The Asbestos-in-Soil guidelines define the level of oversight and controls (including personal protective equipment, decontamination, etc.) that is required to be implemented dependent on the concentration of asbestos fibres/fines or fragments that are present in the soils.

As all buildings at the site were constructed pre 2000s, an asbestos demolition survey will be required to be undertaken on all buildings prior to their removal as per the Building Act 2004 and Asbestos Regulations.

Removal of asbestos from the buildings will likely need to occur under the supervision of an appropriately licensed removalist (since the asbestos cladding exceeds 10 m² in area). We recommend that the removalist also addresses any localised contamination beneath the buildings (if any), in accordance with Asbestos Regulations and Asbestos-in-Soil Guidelines, at the time of demolition. Depending on the extent and nature of asbestos the removalist may need to prepare an Asbestos Removal Control Plan.

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