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 0-6) and Early Childhood Education (ECE) at 3094-3096 Great North Road, New Lynn, Auckland

3 June 2020

INCITE

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 0-6) and Early Childhood Education (ECE) at 3094-3096 Great North Road, New Lynn, Auckland.
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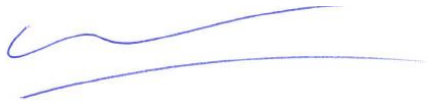
Signature	
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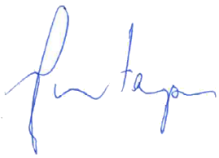
Signature	

Limitations:

The report has been prepared for the Ministry of Education on behalf of the Minister of Education, according to their instructions, to support a Notice of Requirement application under the Resource Management Act 1991. This report has been prepared on the basis of information provided by the Ministry of Education and technical reports provided by various specialist consultants. Incite has not independently verified the provided information and has relied upon it being accurate and sufficient for use by Incite in preparing the report. Incite accepts no responsibility for errors or omissions in the provided information.

Contents

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 age children from Year 0 to Year 6, as well as a new Early Childhood Education Centre (ECE) catering for preschool children.

Refer to attached Designation Plan in Appendix A.

Site address: 3064-3066 Great North Road, New Lynn, Auckland.

Legal description: Lot 12-14 Deposited Plan 42203 and Part Lot 15-17 Deposited Plan 42203 and Section 7, 20-22 Survey Office Plan 429885 and Section 1 Survey Office Plan 501351 and Lot 2 Deposited Plan 507702 (CT identifier 772290).

Landowner: Her Majesty the Queen (the Crown)

Auckland Unitary Plan - Operative in Part:

Zones:

- Business – Metropolitan Urban Centre
- Strategic Transport Corridor (Lot 2 DP 507702 - land acquired from KiwiRail)

Precincts:

- New Lynn Precinct

Overlays:

- Natural Resources: Significant Ecological Areas Overlay – SEA_4711, Terrestrial

Controls:

- Building Frontage Control – Key Retail Frontage
- Building Frontage Control – General Commercial Frontage
- Coastal Inundation 1 per cent AEP plus 1m control – 1m sea level rise
- Macroinvertebrate Community Index - Urban

Designations:

- ID 6300 North Auckland Railway Line from Portage Road Otahuhu to Ross Road, Topuri, Kiwi Rail ***(KiwiRail is in the process of uplifting this from Lot 2 DP 507702)***
- ID 1102 Protection of aeronautical functions – obstacle limitation surfaces, Auckland International Airport Limited

Flood Plains and Overland Flow Paths

- Flood prone areas, flood plain and overland flow paths apply to parts of the site

Additional consents:

No other consents are being sought as part of this notice of requirement.

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 in the future when a school is developed on the site, as well as regional consents for bulk earthworks and discharge of stormwater to the Manawa Stream including any related outfall structure.

1.0 Introduction

The following document is 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 primary school catering for school age children from Year 0 to Year 6, as well as a new Early Childhood Education Centre (ECE) catering for preschool children. The new educational facilities are required to meet expected population growth and related school demand projections in the New Lynn-Kelston area. Depending on the speed of this growth, the Ministry predicts a deficit of primary school spaces in this area by 2025 and a deficit of up to 1000 spaces by 2043. Accordingly, a new school is required with a potential opening date of 2024-2026.

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

2.0 Site Description

The site is located at 3094-3096 Great North Road, New Lynn and owned by the Crown having been acquired for educational purposes. It is legally described as Lot 12-14 Deposited Plan 42203 and Part Lot 15-17 Deposited Plan 42203 and Section 7, 20-22 Survey Office Plan 429885 and Section 1 Survey Office Plan 501351 and Lot 2 Deposited Plan 507702 (CT identifier 772290). Lot 2 DP 507702 was former rail land now included in the Crown land holding held for educational purposes. KiwiRail is still in the process of uplifting the designation from this parcel. In addition, this parcel has a different underlying zoning to the balance of the site of Strategic Transport Corridor, reflecting its previous rail purpose.

Figure 1: Site Location

The total site area is approximately 1.87ha. The western part of the site includes a steep gully around the Manawa Stream which is densely vegetated and identified in the Auckland Unitary Plan (AUP) as a Significant Ecological Area (SEA). The Minster does not intend to develop the school within the SEA and accordingly is not seeking to designate that part of the land for educational purposes. It may be necessary to construct a stormwater outfall structure through this area which will be subject to the usual rules and consent requirements of the AUP.

The developable area of the site over which the designation is proposed is in the order of 1.5ha in area and has gently sloping topography. Current activities on the site include an outlet store, Mega Zone West entertainment centre and One Motor Group (motor vehicles parts, sale and certification). These activities are operating under temporary leases until such time as school development proceeds. Built development on the site includes former light industrial buildings and decommissioned boilers previously used by the Cambridge Clothing Company now occupied by the outlet store and One Motor Group, and a two-level commercial building occupied by the Mega Zone. An underground fuel storage tank assisted with the boilers was also historically located on the site. The balance of the site is used for car parking and storage of car bodies on asphalt, and landscaping. Vector gas infrastructure is located within an easement adjacent to the Great North Road frontage.

Figure 2: Photo of Existing Buildings

Vehicular access to the site is via Cambridge Lane which links the school site to Clark Street via a signalised intersection which was constructed as part of the Clark Street extension project. Planting easements in favour of Auckland Transport are located along some of the road frontages.

The site is generally located within the Business – Metropolitan Urban Centre Zone except for a small portion of former KiwRail land (Lot 2 DP 507702) which still has a Strategic Transport Corridor zoning.

Land to the west of the site across the Manawa Steam and associated vegetated gully comprises commercial land uses including a Bunnings Warehouse. Commercial properties are located on the opposite side of Great North Road to the north which typically comprise 1-2 level retail and commercial premises, with offices and a Lone Star restaurant located immediately across Clark Street to the east. The core commercial centre of New Lynn is located to the east of the site across Clark Street including the transport hub (train and bus station) which is located approximately 400m from the site boundary using safe crossing facilities.

The southern boundary of the site adjoins the KiwiRail rail corridor with a terrace housing development located within the Residential – Terrace Housing and Apartment Buildings Zone located on the opposite side to the rail corridor.

Watercare infrastructure including a 375mm wastewater main runs through the western portion of the site located generally within the SEA, and public stormwater infrastructure is located within the northern part of the site adjacent to Great North 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 Act 1989 empowers 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 Act 1989. Accordingly, the establishment of a contributing primary school catering for school age children from years 0-6, as well as the provision for ECE facilities catering for preschool 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 schools 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 proposed Designation Plan is shown in Figure 3 below and is included in Appendix A.

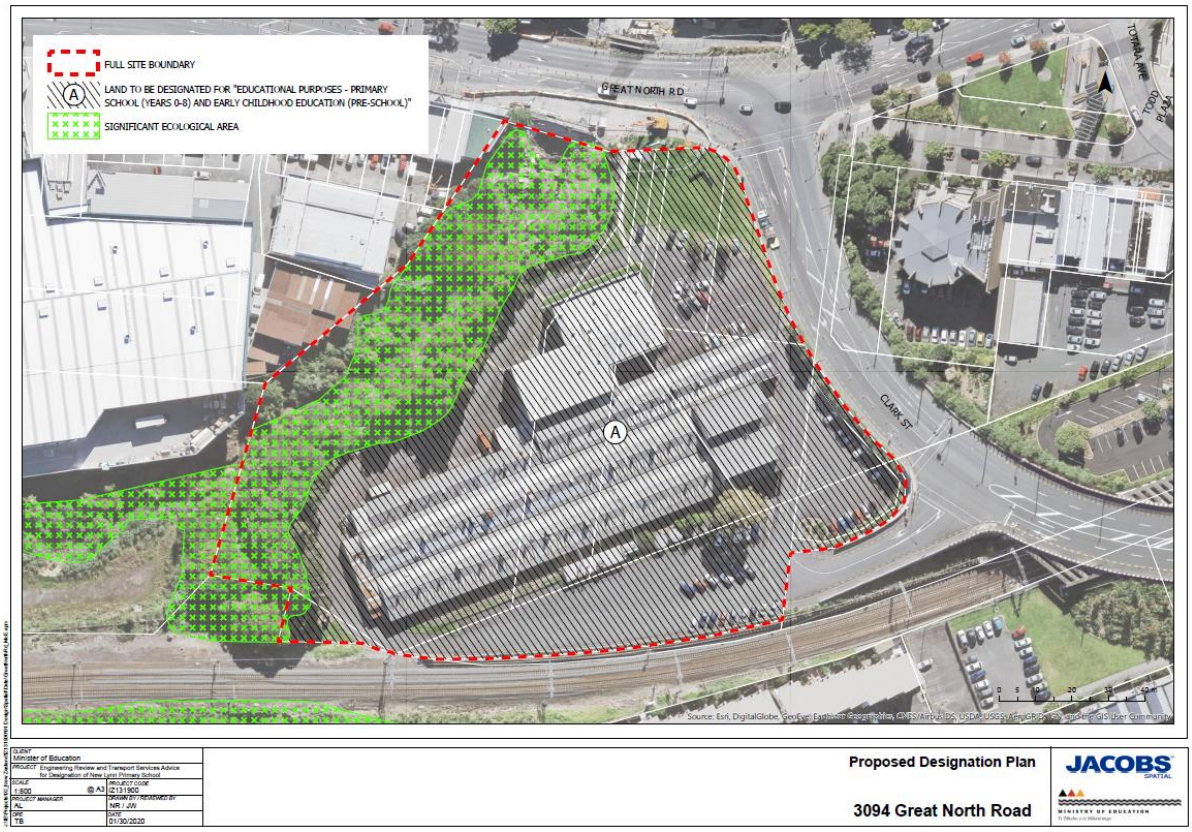


Figure 3: Proposed Designation Plan

The area identified as "A" and further defined by hatching on the Proposed Designation Plan will be designed for *"Educational Purposes – Primary School (Years 0-6) and Early Childhood Education (preschool)"*.

These educational facilities may be constructed in staged manner. The current master plan design roll of student and staff numbers for this Notice are:

Facility	Students/Children	Associated Staff (FTE)
Primary School	**800**	**54**
Pre school	**50**	**8**

Table 1: Estimated Student, Child and Staff Numbers: Source: Ministry of Education

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 community education (night classes), school sporting or cultural events or training, supervised care of school students after school hours, school fairs etc.

The ECE would operate independently from the school with its own 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 outline plan of works stage. A feasibility study has been undertaken by ASC Architects purely for the purposes of confirming the feasibility of accommodating the school and ECE on this site (see Figure 4 below and Appendix C). The Minster would not support any condition linking the designation to this plan as it is a feasibility assessment of the site only to confirm it is fit for purpose and may not reflect the actual design.

Figure 4: Feasibility Plan

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, IT units, administration office space, staff workspace, caretaker's facilities, dental clinic, sick bay, etc.;
- Outdoor play area, 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.

The proposed amendments to the AUP 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 0-6) 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 noise condition to ensure this applies to the ECEs, whilst the height in relation to boundary control condition is amended to take account of the controls in the underlying Metropolitan Urban Centre Zone. The standard school parking conditions that generally apply to schools have been modified to recognise the location of this school within a metropolitan centre near to the transport hub.

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 of works stage 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 development. There is a condition requiring operational vehicle access to be from Cambridge Lane which will not be able to be modified at the outline plan stage. 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.

Purpose Explanation

The *"educational purposes"* purpose for the new designation applying to the new schools and pre-schools is intended to outline the general nature and scope of activities that can be considered as being within the scope of the designation. The meaning *"educational purposes"* is set out with the standard conditions for all school designations in Chapter K of the AUP, which is also attached in Appendix D to this Notice.

The purpose is further defined and clarified by the reference to the Primary School (Years 0-6), and ECE.

5.0 Statutory Assessment

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

- RMA;
- National Policy Statement on Urban Development Capacity 2016;
- The Auckland Plan 2050;
- Auckland Unitary Plan (operative in part);
- The *Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011* ('the NESCS'); and

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 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 social 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 in later this report and demonstrate that any actual and potential adverse effects on the environment will be able to avoided, remedied or mitigated.

Section 6 – Matters of National Importance

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

- *The relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga*.

Consultation undertaken with mana whenua has not identified and specific adverse cultural effects that cannot be appropriately addressed as part of detailed design and project implementation.

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;
(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 identified and specific adverse cultural effects that cannot be appropriately addressed as part of detailed design and project implementation.

An assessment of the potential effects in respect of natural/physical resources, 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.

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 as listed above. The AUP is the key statutory planning document under the RMA requiring consideration under s171(1)(a). An assessment of the AUP is provided below.

The requiring authority has an interest in the land which has been acquired 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 Notice.

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.

Section 176A – Outline Plan

An outline plan of works 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 study to show at a high level the site is capable of accommodating the school and ECE.

5.2 National Policy Statement on Urban Development Capacity 2016

The proposal is consistent with the National Policy Statement on Urban Development Capacity 2016 (NPS-UDC) the proposal will provide critical social infrastructure to support urban development to occur in accordance with the AUP, which supports the outcomes envisaged by NPS-UDC.

5.3 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 AUP 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 in the New Lynn-Kelston area which has been enabled by the AUP.

Key Challenge 3 is reducing environmental degradation. The school will be developed to avoid the SEA which ensures the riparian planting in this area is retained. Any stormwater discharge to the Manawa Stream will be designed and treated to meet required standards.

The Plan identifies development areas expected to undergo a significant amount of housing and business growth in the next 30 years with acknowledgement that these development areas may require further investment and planning in community facilities. The proposed educational facilities are an investment in community facilities to serve this projected growth. New Lynn and Kelston are included in these development areas. Location within a walkable distance of the New Lynn transport

hub will also encourage travel demand management which aligns with the directions for Transport and Access in the Plan.

The Plan sets out how Auckland will take a quality compact approach to growth. In regard to building strong urban centres and neighbourhoods, the Plan notes in regard to centres that maximising investment can be achieved by creating higher-density clusters of employment and housing, supported by public transport and other services such as schools and hospitals. The school proposal, located in the New Lynn metropolitan urban centre, is intended to support the growth in an around this centre.

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.

5.4 Auckland Unitary Plan – Operative in Part (AUP)

The AUP 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 – Tahuhu whakaruruhau a-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***
>
> 1) *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; and*
    b) *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 high growth area Auckland in a manner highly accessible for several modes of transport. 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 and appropriate design.

The site is primarily zoned Business – Metropolitan Centre with only a very small proportion of the site being located within the Strategic Transport Zone as a legacy zone resulting from a previous land exchange with KiwiRail and is located within the New Lynn Precinct. Educational Facilities are a permitted activity in the Business - Metropolitan Centre Zone and these activities are not subject to any further control in New Lynn Precinct (located outside of sub-precincts). Therefore, the activities are anticipated in this location and are not envisaged to result in any reverse sensitivity effects.

The following objectives and policies under Chapter H9 are relevant:

Business -Metropolitan Centre Zone

Business – Metropolitan Centre Zone objectives

(6) *Metropolitan centres are reinforced and developed for commercial, community and civic activities and provide for residential intensification.*

(7) *Metropolitan centres are an attractive place to live, work and visit with vibrant and*

vital commercial, entertainment and retail areas.

(8) Key Retail Frontage streets are a focus for pedestrian activity, with identified General Commercial Frontage streets supporting this role.

Business – Metropolitan Centre Zone policies

(15) Enable significant growth and intensification in metropolitan centres.

(16) Manage development in metropolitan centres so that it contributes to the function and amenity of the centre.

(17) Encourage a wide range, and a high concentration, of commercial, leisure, tourist, cultural and community activities and civic services in metropolitan centres.

(18) Require those parts of buildings with frontages subject to the Key Retail Frontage Control to maximise street activation, building continuity along the frontage, pedestrian amenity and safety and visual quality.

(19) Require those parts of buildings with frontages subject to the General Commercial Frontage Control to achieve a reasonable level of street activation, building continuity along the frontage, pedestrian amenity and safety and visual quality.

(20) Encourage developments to support a range of transport modes serving metropolitan centres and the ability to change transport modes.

(21) Encourage the location of supermarkets and department stores within metropolitan centres by recognising:

(a) the positive contribution these activities make to centre viability and function;

(b) the functional and operational requirements of these activities; and

(c) where preferred built form outcomes are not achieved, the development needs to achieve a quality built environment by positively contributing to public open space, including the activation of streets.

(22) Require activities adjacent to residential zones to avoid, remedy or mitigate adverse effects on amenity values of those areas.

(23) Restrict maximum impervious area within a riparian yard in order to ensure that adverse effects on water quality, water quantity and amenity values are avoided or mitigated.

The proposal will support the intensification of the metropolitan centre and surrounds by delivering educational facilities (enabled in the zone and precinct plan) to support population growth and intensification.

Whilst there is not currently any detailed design, the proposed condition in regard to the establishment outline plan will ensure a quality development reflecting good urban design, environmental principles and integration with multiple modes of transport.

The surrounding zoning and buffering to the Terrace Housing and Apartment Buildings Zone by the KiwiRail corridor will ensure any effects of the educational facilities are appropriately avoided, remediated or mitigated in regard to adjacent residential development.

As shown on the Feasibility Plan, it is not currently proposed to build up to Great North Road which is subject to both a Key Retail Frontage Control and General Commercial Frontage Control. Therefore, on the face of it appears to be contrary to Policies 18 and 19 if the site is not developed up to Great North Road. However, there are site specific reasons why this is not an appropriate outcome along Great North Road in this particular instance.

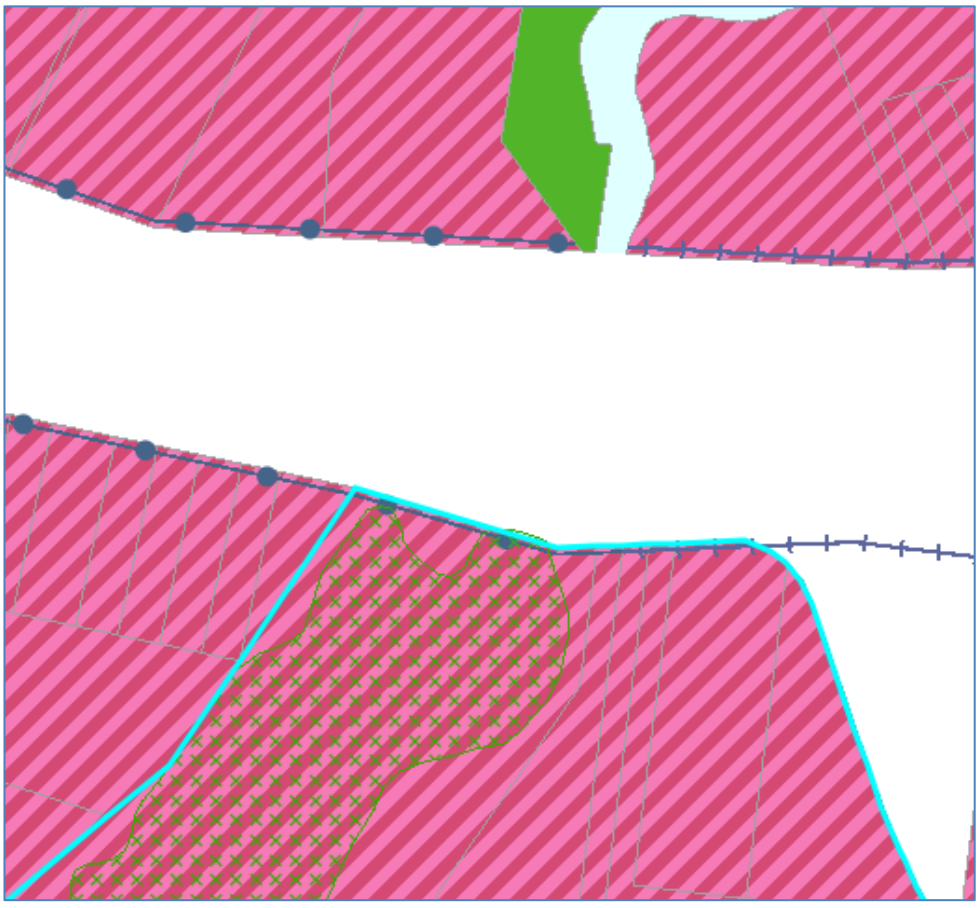


Figure 5: Retail Frontage Controls AUP

The frontage area subject to the General Commercial Frontage control is in the SEA area around the Manawa Stream and vegetated gully that will not be developed for a school, and accordingly it is not appropriate for built development to address the street along this part of the frontage. The balance of the frontage is identified as a Key Retail frontage control. However, this area is isolated from other commercial parts of the south side of Great North Road with the SEA to the west and the new Clark

Street extension to the east, which leaves a short isolated length of frontage that does not contribute to a coherent main street in New Lynn. Further, Vector gas infrastructure within an easement is located within this area adjacent to Great North Road, and public stormwater infrastructure is also located underground within the site in this area. Therefore, built development in this area would be incompatible with existing infrastructure services installed within this area. Accordingly, notwithstanding the frontage controls in place in the AUP, these are considered to be out of date or incompatible with the particular frontages concerned and a development not addressing this particular street frontage will not undermine the overall direction of the objectives and policies for this zone or New Lynn Precinct. This issue was specifically discussed with Plans and Places during a pre-application meeting and is understood to not be of concern in regard to the overall strategy for the New Lynn Metropolitan Centre.

New Lynn Precinct

The purpose of the New Lynn Precinct is to enable the growth and development of the metropolitan centre, while providing for existing activities. The site is not located within any of the sub-precincts.

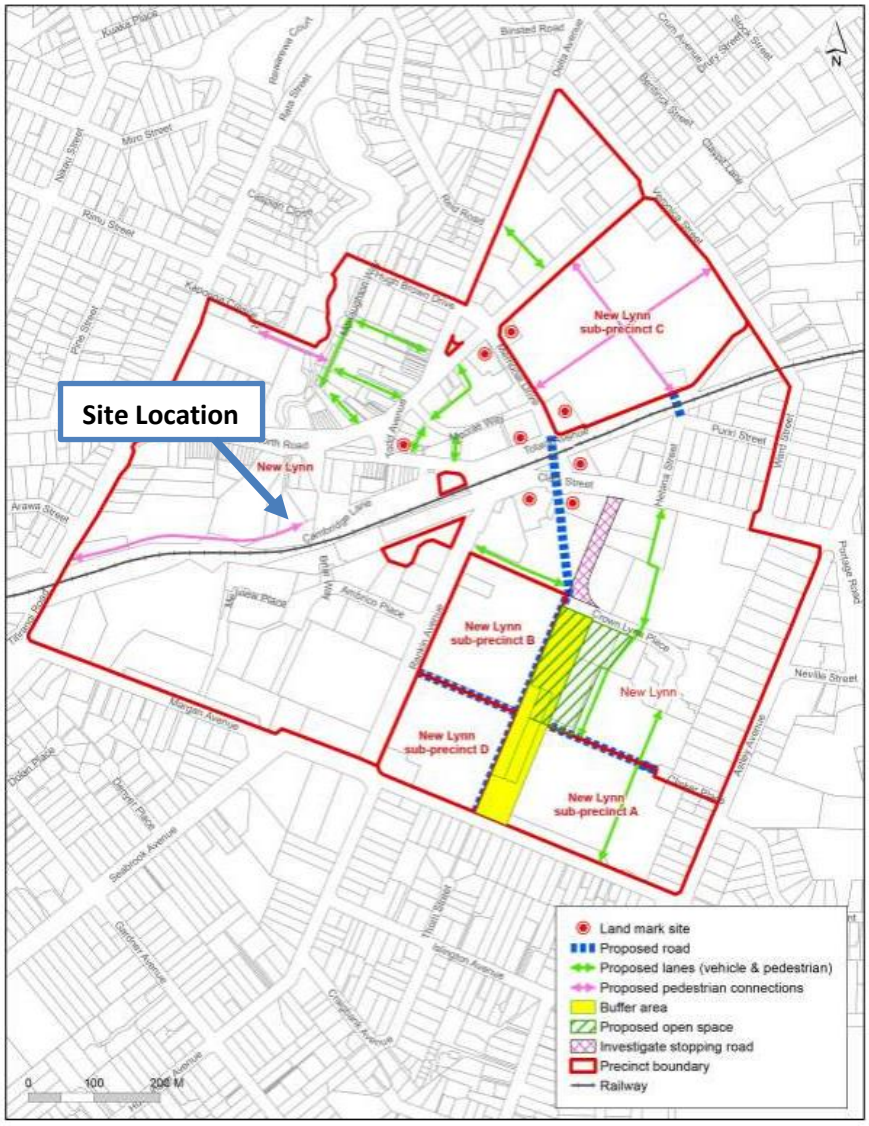


Figure 6: New Lynn Precinct Plan, AUP

I607.2. Objectives

(1) Intensive, high amenity retail, commercial and residential development occurs to support the public transport facilities in the developing metropolitan centre.

(2) The development of new roads and open space infrastructure in accordance with New Lynn: Precinct plan 1.

I607.3. Policies

(1) Require the development of new roads, lanes, connections and open space in accordance with New Lynn: Precinct plan 1.

2) *Require that new buildings and development do not compromise the provision of new roads, connections and open space as shown on New Lynn: Precinct plan 1.*

The proposed school is intended to support growth and intensification in and around New Lynn metropolitan centre and can be achieved without compromising new roads, lanes, connections and open space in accordance with the Precinct Plan. The Precinct Plan shows an indicative future pedestrian connection running along the southern boundary of the site adjacent to the rail corridor linking to the end of Cambridge Lane from the west. The Feasibility Plan takes account of this future connection demonstrating that a future school development can occur without precluding this connection.

Accordingly, the proposal is assessed as being consistent with the relevant objectives and policies for the New Lynn Precinct Plan.

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

As outlined in the engineering peer review report in Appendix F, given the previous location of underground storage tanks on the site, potential presence of non-engineered fill and legacy buildings which may contain asbestos, there is potential for contaminated soil to be located on the site. As such, it is likely that future resource consents will be required under the NES Soils and potentially under the AUP regional rules for disturbing contaminated soils when enabling earthworks to develop the site are required.

6.0 Assessment of Environmental Effects

6.1 Overview of Approach

A number of technical due diligence reports addressing infrastructure services, geotechnical conditions and contamination were commissioned by the previous site owner as part of the background information made available for marketing of the property for sale. The Ministry commissioned Jacobs to undertake a peer review of these documents and comment on whether these reports raised any fundamental concerns for development of the site for a school as proposed. The peer review report, referred to as the Engineering Review Report, is attached in Appendix F, but does not include the original reports reviewed due to their size. These can be provided on request if required.

Other technical reports included to support the Notice are an integrated Transport Assessment (ITA) prepared by Jacobs, and an Ecological Assessment of the SEA prepared by Morphum Environmental Limited.

A feasibility study has also been prepared by ASC Architects to confirm the feasibility of including the necessary project components on the site (see Appendix C). 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, consistent with other recent school designations, 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) has not been undertaken at this stage with reliance on existing preliminary site investigation information. This can occur at a later date and any site management/remediation addressed as part of future outline plans and contaminated soil resource consent processes.

6.2 Visual and Amenity Effects

The site is located in a Business – Metropolitan Centre Zone which allows for educational facilities as permitted activities (the activity is not further controlled in the New Lynn Precinct Plan) and anticipates built form to a larger scale than is likely to occur with the proposed school and ECE. The Feasibility Plan indicates buildings in the order of three stories high whilst the underlying zoning envisages buildings up to 72.5m. Further, the only relevant height in relation to boundary control in the underlying zone is taken from the Terrace Housing Apartment and Building Zone (8m and 60 degrees) on the far side of the rail corridor which does not impact on the likely scale of buildings expected to be constructed on this site.

It is anticipated that the site will provide for a high level of soft and hard landscaping and space around buildings as generally indicated on the Feasibility Plan.

The adjacent environment includes office buildings, two-level commercial/retail premises, a large Bunning's Warehouse and town house development across the rail corridor. The proposed school can be well integrated into this visual environment at an appropriate scale. Landscaping and urban design treatments for the site layout and buildings will be addressed at the detailed design stage following designation, and the proposed establishment outline plan condition is designed to ensure urban design principles are appropriately taken into account at the project design and implementation phase. The proposed condition requires consideration how the school design concept responds to the public realm and incorporates CEPTD principles such as passive surveillance of the streetscape.

The rail corridor ensures there is a generous buffer to the nearest residential development within the Terrace Housing Apartment and Building Zone, whilst the educational facilities themselves can be designed and outdoor recreation spaces positioned to ensure any potential noise nuisance from the rail corridor is appropriately managed.

As such, it is considered that the visual and amenity effects of any future school and ECE developed on the site can be appropriately managed without detailed controls (other than the conditions proposed) being included in the designation conditions.

6.3 Transport and Traffic Effects

An Integrated Transport Assessment (ITA) prepared by Jacobs is attached as Appendix E.

Overview of findings from Jacobs

The proposed site is considered to be appropriate for redevelopment as a primary school and ECE given the existing and proposed high-quality walking and cycling connections to the site from the surrounding student catchment. There is significant potential for students to walk to school as the boundary of the catchment is expected to be no more than a 1.5km walking distance from the school. The site is highly accessible by public transport due to the proximity of the school site to the New Lynn public transport interchange. These factors have a large potential to offset the number of vehicle trips generated by the school and ECE.

As a conservative estimate, the number of vehicle trips generated by the school and ECE is around 442 vehicles for the masterplan scenario in the AM peak and 386 vehicles in the PM peak. Traffic modelling was undertaken to understand the likely traffic impacts of the proposed school and ECE on the performance of the main access to the site and three surrounding intersections.

The traffic impacts on the Great North Road / Rata Street / Titirangi Road, Great North Road / Clark Street and the Clark Street / Rankin Avenue / Totara Avenue intersections are considered to be no more than minor in terms of Level of Service (LOS), delay and queue lengths. However, additional traffic is expected to have a significant impact on the performance of the Clark Street / Cambridge Lane (site accessway) intersection. Modelling results indicate that under the future masterplan

modelling scenario, queue lengths exceeding 100m may develop at the Clark Street / Cambridge Lane intersection, which may in turn impact on the performance and operation of nearby intersections.

Transport recommendations summary from Jacobs

The following transport recommendations are identified for the subsequent Outline Plan of Works stage of the project:

- The Ministry of Education to engage with Auckland Council over opportunities to widen Clark Street footpath adjacent to the school site into the existing planting easement to improve pedestrian safety;

- The Ministry of Education to engage with Auckland Transport over implementing a 40km/hr variable speed limit along the road frontage to the site during school start and finish times;

- Two dedicated pedestrian / cyclist accessways to the site are provided, which are completely separated from the main vehicle access; one from Great North Road at the northern site boundary and one from Clark Street at the eastern site boundary;

- All operational vehicle access to the site is via Cambridge Lane from Clark Street (no additional vehicle accessways are proposed);

- The levels of vehicle, bicycle and scooter parking proposed to serve the primary school and ECE will be further investigated at the Outline Plan stage:
  - Given the site's high level of accessibility by public transport, walking and cycling; reduced vehicle parking rates (relative to the Ministry's standard designation conditions for educational purposes) are considered appropriate and should be explored.
  - it is anticipated that appropriate levels of parking can be accommodated within the site.
  - on-site pick-up and drop-off spaces are provided for the primary school.

- Further development of the Feasibility Study concept design plan for the carpark to comply with Auckland Transport's Transport Design Manual - Parking Design Engineering Code guidelines and the AUP(OP) Chapter E27 – Transport; and

- It is recommended that a CTMP is prepared by the contractors, as required by the NZ Transport Agency and Auckland Transport.

Transport mitigation measures recommended by Jacobs

It is recommended that the following mitigation measures are considered by the Ministry of Education, Auckland Transport and the school/ECE at the outline plan of works stage:

- Modification of the traffic signal phasing at the intersection/s adjacent to the school (subject to the approval of the road controlling authority), to allow for increased pedestrian crossing times, improved circulation within the carpark, and to reduce queue lengths and impacts on adjacent intersections. Shorter cycle times for the Cambridge Lane / Clark Street intersection

should be investigated and it is recommended that extending the length of the right-turn pocket on the Clark Street north approach is also considered; and

- Development of a School Travel Plan (STP) to manage travel demand to and from the school and encourage measures such as implementing a Kea Crossing, Walking School Buses, walking and cycling as viable modes of travel, carpooling and public transport usage. The STP is to be developed with Auckland Transport prior to the opening of the school and should align with the Travelwise Programme.

- Engagement with Auckland Transport to consider the implementation of a 40km/h variable speed limit along the road frontage to the site during school start and finish times.

The implementation of any of these recommendations should involve consultation with Auckland Transport and Auckland Council.

Measures to Address Jacobs Recommendations

The ITA confirms that the site is appropriate for a school development but makes a number of recommendations. Some of these can be addressed directly in designation conditions whilst other matters relate more to the detailed design of the school and/or works to be agreed with Auckland Transport in the road network that are more appropriately left to the outline plan stage of work.

Conditions proposed to directly address the Jacobs recommendations include:

- Conditions on parking and on-site pickup and drop off;
- Specific consideration of traffic light phasing (subject to Auckland Transport approval) and footpath widths as part of the establishment outlined plan
- A requirement to develop a school travel plan in consultation with Auckland Transport;
- Operational vehicle access limited to Cambridge Lane; and
- An obligation to prepare a construction management plan, within which construction traffic can also be addressed.

An establishment outline plan condition is also proposed to provide guidance on particular matters to be addressed within detailed design that will need to be addressed as part of the initial outline plan. As part of this work, a master plan for the full site development is required (as construction may be staged), and a traffic impact assessment (TIA) report will be required which can address the various recommended mitigation measures outlined in the ITA, and either how they are achieved or alternative solutions where appropriate.

The parking conditions do not adopt the standard conditions for schools in the AUP, as this would likely result in an oversupply of car parking on the site which is not compatible with the metropolitan urban location of the site near a key transport hub, and would not support travel demand management principles. Accordingly, a parking maximum of 62 for the school is proposed which aligns with the parking maximum for schools in the underlying zone (see parking calculations in the

ITA). For the ECE, it is proposed that the required parking supply is confirmed at the outline plan stage, particularly as there is no parking requirement for this activity in the underlying zone.

Overall the conditions provide a balance for certainly around major 'bottom line' requirements for the designation, and guidance via the establishment outline plan condition to help guide the detailed design to ensure appropriate outcomes for the site.

6.4 Civil Infrastructure Effects

The findings of the Engineering Review Report in Appendix F conclude that there are no fundamental civil infrastructure limitations that would preclude the site from being used for educational purposes.

The proposed establishment outline plan condition will require full details on proposed infrastructure design and connections to be provided as part of that process. Accordingly, detailed conditions beyond that proposed are not considered necessary to be included on the designation.

Flooding

Whilst the overall site is subject to flooding and coastal inundation, this primarily relates to the gully area overlain with the SEA where school development is not proposed. Council GIS shows an overland flow path originating within the site and draining towards the Manawa Stream. It is unclear if this flow path is still accurate, but in any case, this can be designed for, particularly as the indicative flow path originates from within the development site and drains to an adjacent stream. The Engineering Review Report concludes there is minimal flooding risk to the proposed school site.

Figure 7: Area Subject to Flooding and Indicative Overland Flown Path: Auckland Council GIS

Stormwater

The Engineering Review Report considers that it is unlikely that stormwater flows for the proposed development will exceed existing given the likely overall increase in permeable areas. The report notes that whilst sufficient stormwater connections are available, it is recommended that a full infrastructure survey is undertaken in due course prior to concept design commencing to confirm all lid levels and pipe gradients.

The report recommends that the concept design could consider using existing manholes, pipes and outlet to the Manawa Stream given that the existing outlets in this area may have already been upgraded. It is further recommended that the post-development flows are kept below the pre-development flows.

If a new connection(s) to the Manawa Stream is required, then the report recommends that appropriate outlet protection is provided to prevent erosion and scouring. Potential options include riprap, stormwater retention on-site and water reuse.

It is intended that detailed stormwater design is addressed as part of later detailed design and any effects can be appropriately managed through the outline plan process and any regional consents related to a stormwater outlet to the Manawa Stream if required and any minor works within the SEA to facilitate such an outlet.

Wastewater

Sufficient wastewater connections to the site are available. The capacity of the downstream wastewater network has not been confirmed to date and will need to be as part of the detailed design phase of the project. However, given the location of the site within a metropolitan centre it is not envisaged that there will be any fundamental capacity constraints.

Water Supply

There are two existing water supplies to the site. As with wastewater, the overall capacity of the water supply network has not been confirmed at this stage. Additional testing of flow rates and hydrants will be required in due course as part of detailed design. However, given the location of the site within a metropolitan centre it is not envisaged that there will be any fundamental capacity constraints.

6.5 Ecological Effects

An ecological assessment prepared by Morphum Environmental is attached in Appendix G.

The assessment notes that the Manawa Steam runs through the western part for the site and features steep and vegetated riparian margins. Key observations and conclusions from the assessment are as follows:

- This riparian vegetation is recognised in the AUP as a SEA due to providing habitat for threatened species. Other vegetation onsite is limited to amenity garden species or grassland. Pest and weed plants are prevalent throughout. Whilst no detailed fauna surveys have been undertaken as part of this study, the SEA vegetation could act as habitat for native birds, lizards and bats that may utilise the subject site on an intermittent basis. The current ecological values of the site have been described using the Environment Institute of Australia and New Zealand (EIANZ) 2018 Ecological Impact Assessment guidelines.

- The vegetation onsite is considered to be of low botanical value. However, considered to be of high ecological value due to the paucity of native vegetation within the urban catchment, the SEA overlay and the native fauna that may utilise the area as potential habitat. Onsite fauna observations were limited to common species, the use of this area by threatened species such as long-tailed bats and native herpetofauna, whilst considered unlikely, cannot categorically be ruled out. 'At Risk - Declining' native freshwater fish have historically been noted in the wider catchment.

- The construction and operation of a school has the potential to result in adverse effects on the identified ecological values. The redevelopment of the subject site would likely require the demolition and construction activities involving land disturbance and potentially minor vegetation clearance along with associated noise and vibrations. Land disturbance activities, such as the potential construction of new stormwater outfalls or walking tracks, has the potential to cause sediment discharges to the receiving environment of Manawa Stream. Vegetation clearance could result in the direct mortality of individuals, displacement of nesting sites, and potentially impacting reproductive success. Noise and vibration could lead to mobile individuals avoiding the site during construction.

- The redevelopment of the site provides the opportunity to reduce the impervious coverage and provided stormwater management in-line with current industry best practice thereby improving water quality in the receiving environment.

- Operational activities, including traffic, have the potential to reduce habitat quality through deterring the use of the subject site as foraging and nesting habitat; however, operational noise generating activities for the school are unlikely to be above the existing levels of the wider urban landscape.

- The magnitude of the effect of the construction and operation of a school has been considered. The magnitude of effect considers the degree of effects the likely activities would have above the current urban baseline. The assessment considers the identified effects as either low or negligible, being of no discernible to a minor shift away from the baseline. Low and negligible magnitude of effect was in part based on the existing environmental condition of the subject site, being in a largely urban catchment and in close proximity to a major road. Fauna that utilise the subject site would already be accustomed to a high level of traffic, noise and vibration, as well as, reflect the fragmentation and lack of connectivity of the subject site with other areas of suitable habitat.

- Taking into account both the ecological values and the magnitude of effect, the overall level of effect anticipated ranges from moderate to very low.

- For all fauna-related effects it is considered that the regional planning provisions of the AUP, that would still apply should the designation be confirmed provided sufficient provision to ensure any effects of the identified activities are appropriately managed. Regional consents would be required for land disturbance and vegetation clearance activities within the SEA greater than 25m^2, as such conditions could be placed on any future resource consent if needed requiring any identified effects to be mitigated once those effects are fully established.

- 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.

- Based on the above it is not considered necessary to recommend that any condition be imposed on the designation to address any of the identified effects.

The values of the SEA have been recognised by the Minster and as such there is no intention to designate this area. There is the potential for some minor works to be required within the SEA such as a stormwater outfall. Further, there could potentially be low impact walking tracks within the SEA area considered in the future for outdoor educational activities, although these types of projects are not part of the designation proposal and would be subject to complying with the AUP or obtaining resource consent if pursued in the future.

6.6 Geotechnical Effects

Previous geotechnical investigations of the site are added in the Engineering Review Report in Appendix F.

The review of the existing geotechnical information for the site concluded that there were no fundamental limitations that would preclude the site from being used for educational purposes. However, the report did make the following recommendations:

- a set-back is most likely required to ensure any instability of the stream bank does not encroach on the site and to meet Auckland Council requirements. The proposed [feasibility] site plan shows the buildings and outdoor learning area to be close to the slope crest and potentially this will need to be moved back to ensure stability. If a set-back cannot be accommodated by the proposed design, then the stream slope could be retained or strengthened to ensure improved stability to reduce the set-back distance;

- the provided Geotechnical Appraisal Report (GAR) has deemed the variable existing fill located at the north-western extent of the site as not suitable to support multi-storey

buildings due to variability in both composition and engineering properties. Therefore, it has been suggested that deep foundations, such as piles would be required for the proposed development; and

- additional geotechnical investigations and lab testing has been proposed prior to progressing concept design.

While a design is yet to be completed, due to the constrained site size it may be necessary to locate buildings in areas near the top of the slope to the Manawa Stream and/or in areas previously filled. Geotechnical conditions will be taken into account in the final site layout and foundation designs.

6.7 Soil Contamination Effects

The site was subject to a PSI undertaken by 4sight consulting in 2016 as part of a package of due diligence reports to assist with marketing of the property for sale. The results of the PSI are summarised in the Engineering Review Report in Appendix F.

In summary, given previous location of underground storage tanks on the site, potential presence of non-engineered fill and legacy buildings which may contain asbestos, there is potential for contaminated soil to be located on the site. As such, it is likely that future resource consents will be required under the NES Soils and potentially under the AUP when enabling earthworks to develop the site are required. It is not necessary to include any designation condition(s) around this issue (although advice notes have been proposed) as designating the site for *Educational Purposes* will not obviate any obligations to obtain resource consents for disturbing contaminated soils under the NES Soils or AUP regional rules when future development occurs.

The findings of the review of contaminated land information associated with the site concludes that there have been no fundamental findings that would preclude the proposed land use change to a school from occurring.

6.8 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.

6.9 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 AUP, and no recorded sites in the New Zealand Archaeological Association (NZAA) are shown as affecting this site.

6.10 Cultural Effects

A summary of the consultation with mana whenua and the outcome of that consultation including identification of relevant cultural values and recommendations made is detailed in Section 10 below.

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

Consultation undertaken with mana whenua has not identified and specific adverse cultural effects that cannot be appropriately addressed as part of detailed design and project implementation.

Feedback from Ngai Tai ki Tamaki was that they would have an interest in any further resource consents affecting the SEA area, and reserve their position in be involved in any consent processes in that regard.

7.0 Additional Consents Required

In general, no further land-use consents will be required from the Auckland Council in terms of its District Council 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.

Any potential regional resource consents for stormwater discharges, earthworks or discharges from disturbing contaminated soil cannot be determined until detailed design has been undertaken. Accordingly, no consent from Auckland Council under the AUP can be applied for at this stage and will be applied for as necessary in the future once the site is designated and 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

The Minster considered a number of sites in the New Lynn area before seeking a designation of the site at 3094-3096 Great North Road. A site selection study undertaken in 2016 identified a short list of sites for comparative analysis via a Multi Criteria Analysis (MCA) in the area. One of these sites, a Housing New Zealand village facing redevelopment located on Rata Street, was investigated in some detail through a due diligence process. However, following engagement with Auckland Council and Auckland Transport it was determined that progressing a designation on that site was too high risk due to significant traffic concerns held by Auckland Transport. All other sites being considered at that time were not in Crown ownership and not being marketed for sale. They included a factory, multiple adjacent commercially zoned sites including an Auckland Transport car park, and multiple adjacent residential titles and a bowling club. Anu school proposal would have needed to displace these existing activities. The Ministry elected not to pursue any of these sites.

Following completion of the due diligence exercise on the Rata Street site, the catchment area of interest was adjusted by the Ministry, and the current site at 3094-3096 Great North Road came onto the market. The proposed site is well located within the search area as shown in Figure 8 below. A high-level feasibility assessment of the site determined that it would be suitable for development as a school site and accordingly the site was acquired by the Crown on behalf of the Minister for educational purposes rather than pursuing other options previously assessed for the project that were not available for sale and had issues such as existing land uses, adverse traffic effects, a less desirable location in the student catchment and/or multiple sites in different ownership.

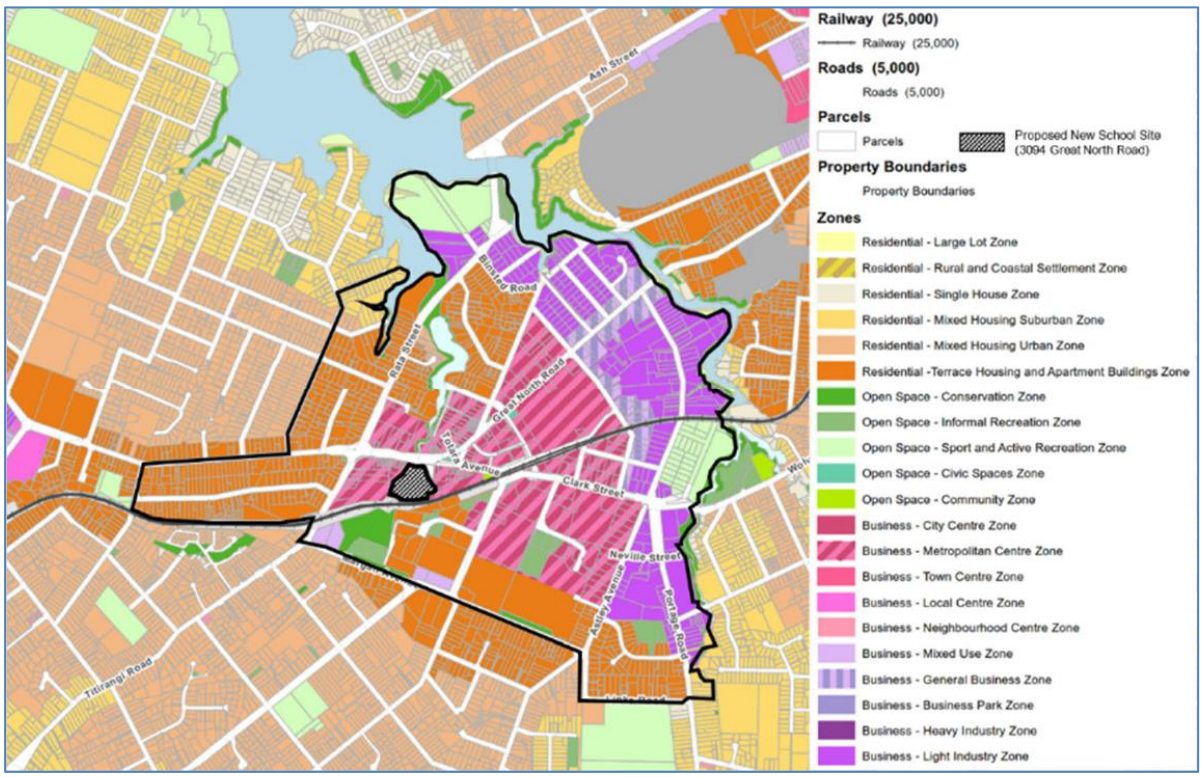


Figure 8: Site location within Ministry of Education Area of Interest (Catchment): Source Jacobs

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. This process would provide the Minster with less certainty and would be inconsistent with the planning status of the similar state facilities in the AUP, and the majority of other state schools nationwide.

9.0 Consultation

Mana Whenua

An information package and proposed designation plan were sent to all 10 mana whenua groups identified by Auckland Council as having an interest in the Whau Local Board area. Initial project information was sent out 19 March 2019, and reminders on 23 April 2020. Feedback received was as follows:

- Ngāi Tai ki Tāmaki – advised that in regard to the build and naming they would defer to mana whenua under whose manaaki this will be, but will have an interest in any resource consenting in the SEA and reserve the opportunity to be involved in that process; and

- Ngāti Whātua Ōrākei confirmed that they do not need involvement in this instance but would defer to their whanaunga of Te Kawarau a Maki as lead iwi for direct consultation on this project.

- Te Rūnanaga o Ngāti Whātua advised no issues for them with proposal.

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.

Whau Local Board

The Whau local Board was sent project information. Their representative confirmed that the information has been passed onto Board Members and any formal feedback would be provided once the Notice of Requirement is lodged.

KiwiRail

KiwiRail has confirmed they have no objection to the proposal adjacent to the rail corridor but would not favour buildings being placed within 5m of the rail corridor. It is envisaged that this area will incorporate access and parking as well as sufficient area for any future pedestrian link adjacent to the rail corridor in accordance with the New Lynn Precinct Plan, and as such buildings within 5m of the rail corridor are not anticipated. KiwiRail is uplifting the legacy rail purposes designation from

Lot 2 DP 507702 transferred to the title purchased by the Crown for educational purposes as part of a land exchange with KiwiRail.

Vector

Vector has been consulted in regard to the gas easement and related infrastructure on the site adjacent to Great North Road. Vector advised that they are happy to support Ministry of Education obtaining a designation for a school at 3094 Great North Road provided:

1. Fencing is installed around the existing Vector easement areas, to protect the assets from school users and vice versa or, alternatively;
2. The installations are converted to an enclosed kiosk type structure.

Vector Gas has welcomed the opportunity to work with the Ministry of Education in terms of fencing design, materials and preferred solution.

The Ministry of Education will work with Vector as part of the detailed design phase of the project to ensure appropriate treatment of their gas infrastructure in the project design. No buildings are envisaged to be required in this area. The gas easement area is shown on the Feasibility Plan in Appendix C.

Watercare

Watercare was contacted in regard to whether they were aware of any significant infrastructure constraints (water and wastewater) for the New Lynn Metropolitan Centre. They requested that a capacity assessment form be prepared to provide any feedback on capacity. This exercise will be undertaken at a later stage by the civil consultant appointed for the school design phase.

Auckland Transport

Auckland Transport was involved in the due diligence exercise for the Rata Street Housing New Zealand village option previously considered which they did not support, and have been consulted on the current proposal via a joint pre application meeting with Auckland Council and follow up discussions between Jacobs and Auckland Transport in regard to the ITA and extent of modelling.

A copy of the Draft ITA was provided to Auckland Transport for comment. A summary of how feedback form Auckland Transport was addressed is included in Appendix A to the ITA.

Auckland Council

A pre-application meeting was held with Auckland Council Plans and Places who have also helped facilitate inputs by Auckland Transport and Auckland Council Parks.

The Minister was open to the land within the SEA being vested in the Council as a reserve, and to this end Auckland Council Parks assessed the area to determine if it was land that they would want within their reserves network. They determined that there was no benefit in public ownership of the land (as a Council reserve) given the protections afforded to it as a SEA in the AUP. The Minister has not included the land within the SEA within the proposed designation.

There is potential for footpath widening to be required along Clark Street as part of the school development which could extend into the school site where planting easements in favour of Auckland Council are located (see Appendix B). If widening onto the school site is found to be required, the Ministry of Education will consult Auckland Council in regard to any necessary changes to the easements to accommodate this, and any necessary legal boundary changes. There is sufficient area on the school site to ensure appropriate landscaping is provided along the Clark Street road frontage to ensure there are appropriate amenity outcomes along the street frontage.

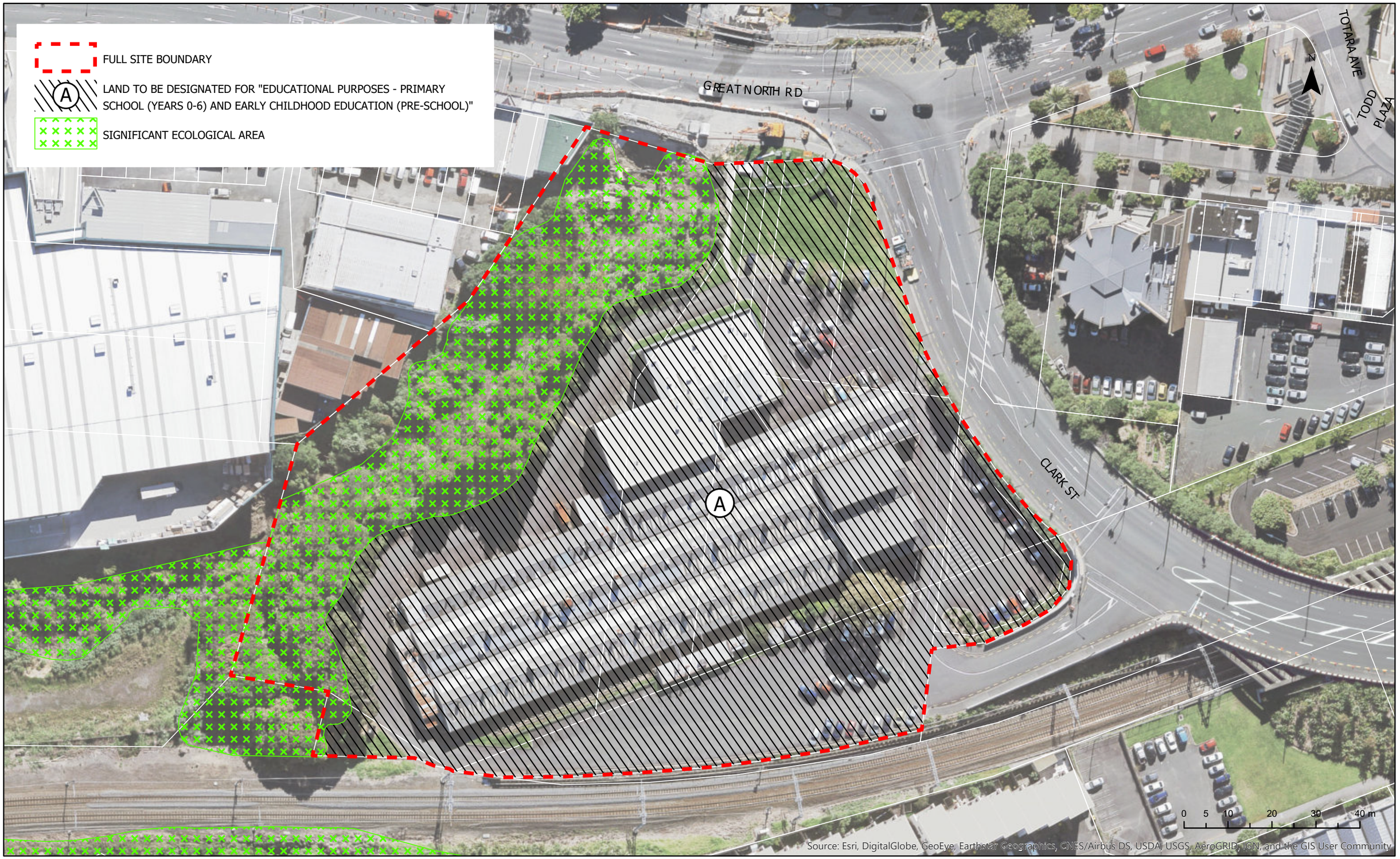
10.0 Conclusion

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 New Lynn and Kelston area.

The Minister requests that the Council publicly notifies this Notice of Requirement.

Appendix A

Designation Plan



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CLIENT	Minister of Education
PROJECT	Engineering Review and Transport Services Advice for Designation of New Lynn Primary School
SCALE	1:800 @ A3
PROJECT CODE	IZ131900
PROJECT MANAGER	AL
DRAWN BY / REVIEWED BY	NR / JW
DPE	TB
DATE	25-May-20

Proposed Designation Plan

3094 Great North Road

JACOBS SPATIAL

MINISTRY OF EDUCATION
Te Tāhuhu o te Mātauranga

Appendix B

Certificate of Title and Easements

RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD
Search Copy

R.W. Muir
Registrar-General
of Land

Identifier **772290**
Land Registration District **North Auckland**
Date Issued 10 February 2017

Prior References
767821 771785

Estate	Fee Simple
Area	1.8668 hectares more or less
Legal Description	Lot 12-14 Deposited Plan 42203 and Part Lot 15-17 Deposited Plan 42203 and Section 7, 20-22 Survey Office Plan 429885 and Section 1 Survey Office Plan 501351 and Lot 2 Deposited Plan 507702
Purpose	Education

Registered Owners
Her Majesty The Queen

Interests

Subject to a gas pipeline easement (in gross) over part Lot 12 DP 42203 marked A on the diagram herein in favour of United Networks Limited created by Transfer B352535.1 - 21.11.1984 at 2:35 pm

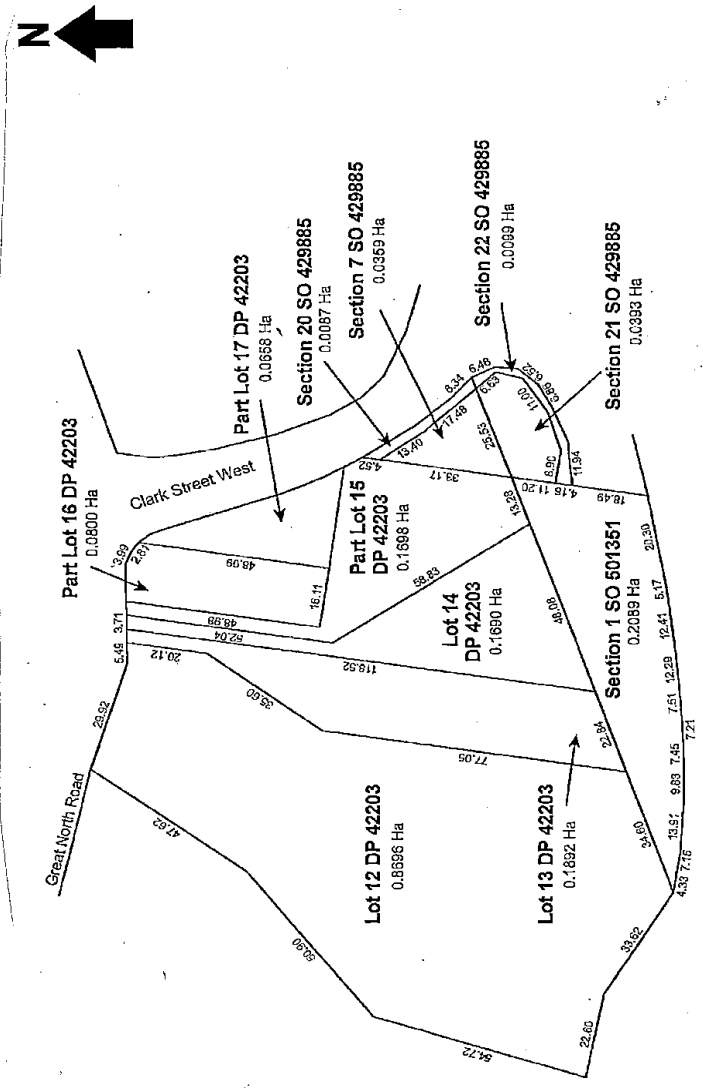
Subject to Section 241(2) and Sections 242(1) and (2) Resource Management Act 1991 (affects DP 209280)

Subject to a planting easement (in gross) over part of Part Lot 15 DP 42203 marked Section 8 on SO 429885 and over part of Part Lot 16 DP 42203 marked Section 16 on SO 429885 and over part of Part Lot 17 DP 42203 marked Section 17 and 19 on SO 429885 and over Sections 20 and 22 SO 429885 in favour of Auckland Council created by Easement Instrument 10271874.4 - 20.10.2016 at 3:23 pm

Subject to Sections 25A(10) and (11) New Zealand Railways Corporation Restructuring Act 1990 (affects DP 507702)

Identifier **772290**

Title Diagram 772290
Cpy – 01/01, Pgs – 002, 28/02/17, 16:09
DocID: 2147121 70



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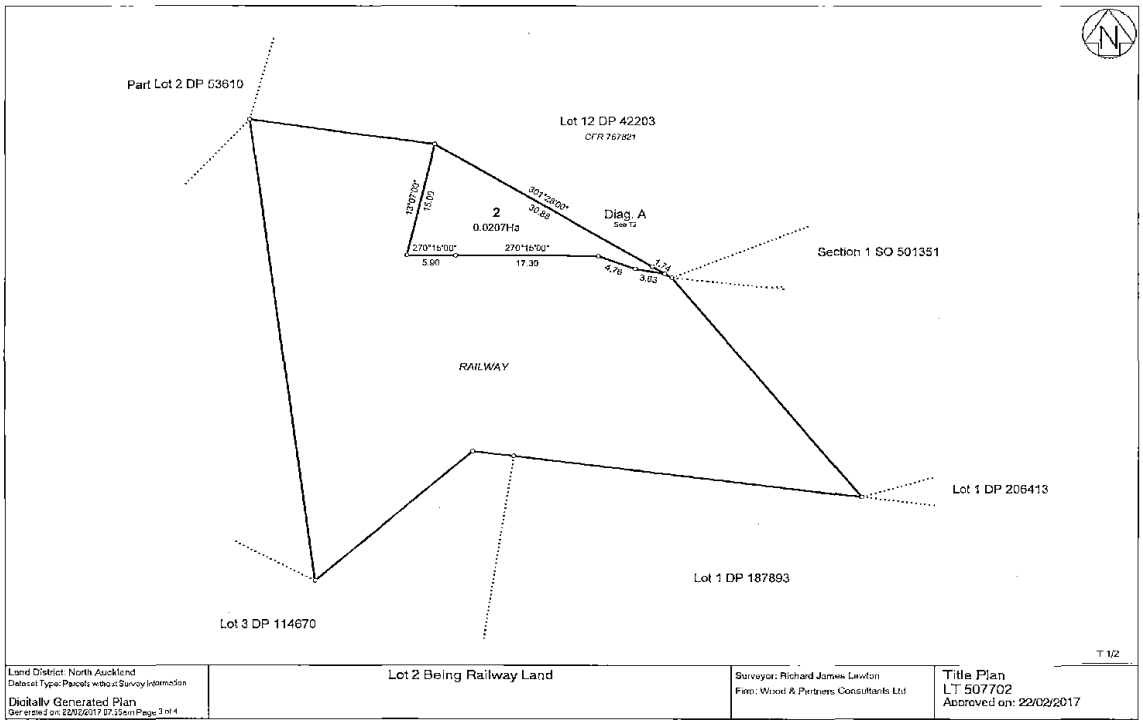


View Instrument Details

Instrument No.	10271874.4
Status	Registered
Date & Time Lodged	20 Oct 2016 15:23
Lodged By	Dewar, Katie Jean
Instrument Type	Easement Instrument

Affected Computer Registers	Land District
NA137B/298	North Auckland

Annexure Schedule: Contains 4 Pages.

Grantor Certifications

I certify that I have the authority to act for the Grantor and that the party has the legal capacity to authorise me to lodge this instrument ☑

I certify that I have taken reasonable steps to confirm the identity of the person who gave me authority to lodge this instrument ☑

I certify that any statutory provisions specified by the Registrar for this class of instrument have been complied with or do not apply ☑

I certify that I hold evidence showing the truth of the certifications I have given and will retain that evidence for the prescribed period ☑

I certify that the Mortgagee under Mortgage 801830.1 has consented to this transaction and I hold that consent ☑

Signature

Signed by Michelle Kay Hill as Grantor Representative on 20/10/2016 12:39 PM

Grantee Certifications

I certify that I have the authority to act for the Grantee and that the party has the legal capacity to authorise me to lodge this instrument ☑

I certify that I have taken reasonable steps to confirm the identity of the person who gave me authority to lodge this instrument ☑

I certify that any statutory provisions specified by the Registrar for this class of instrument have been complied with or do not apply ☑

I certify that I hold evidence showing the truth of the certifications I have given and will retain that evidence for the prescribed period ☑

Signature

Signed by Fiona Catherine Burton as Grantee Representative on 17/10/2016 02:48 PM

***** End of Report *****

Form B

Easement instrument to grant easement or *profit à prendre*, or create land covenant

(Sections 90A and 90F Land Transfer Act 1952)

Grantor

Cambridge Clothing Company Limited

Grantee

Auckland Council

Grant of Easement or *Profit à prendre* or Creation of Covenant

The Grantor being the registered proprietor of the servient tenement(s) set out in Schedule A **grants to the Grantee** (and, if so stated, in gross) the easement(s) or *profit(s) à prendre* set out in Schedule A, **or creates** the covenant(s) **set out** in Schedule A, with the rights and powers or provisions set out in the Annexure Schedule(s)

Schedule A *Continue in additional Annexure Schedule, if required*

Purpose (Nature and extent) of easement; *profit* or covenant	Shown (plan reference)	Servient Tenement (Computer Register)	Dominant Tenement (Computer Register) or in gross
Planting	Section 16 on SO 429885	Part Lot 16 DP 42203 NA137B/298	In gross
Planting	Section 19 on SO 429885	Part Lot 17 DP 42203 NA137B/298	In gross
Planting	Section 20 on SO 429885	Section 20 SO 429885 NA137B/298	In gross
Planting	Section 22 on SO 429885	Section 22 SO 429885 NA137B/298	In gross
Planting	Section 17 on SO 429885	Part Lot 17 DP 42203 NA137B/298	In gross
Planting	Section 8 on SO 429885	Part Lot 15 DP 42203 NA137B/298	In gross

Form B - continued

Easements or *profits à prendre* rights and powers (including terms, covenants and conditions)

Delete phrases in [ ] and insert memorandum number as required; continue in additional Annexure Schedule, if required

Unless otherwise provided below, the rights and powers implied in specified classes of easement are those prescribed by the Land Transfer Regulations 2002 and/or Schedule Five of the Property Law Act 2007

The implied rights and powers are hereby [~~***varied***~~] [~~***negatived***~~] [~~***added to***~~] [***substituted***] by:

~~[Memorandum number #9=*memorandum no (in figures) (if there is no number just leave a blank space)*#, registered under section 155A of the Land Transfer Act 1952]~~

[the provisions set out in the Annexure Schedule]

Covenant provisions

Delete phrases in [ ] and insert Memorandum number as required; continue in additional Annexure Schedule, if required

The provisions applying to the specified covenants are those set out in:

[~~Memorandum number _____, registered under section 155A of the Land Transfer Act 1952~~]

[the Annexure Schedule]

Form L

Annexure Schedule Page 1 of 2 Pages

Insert instrument type

Easement Instrument to grant easement or profit a prendre, or create land covenant

Continue in additional Annexure Schedule, if required

1. INTERPRETATION

1.1 Interpretation: In this easement instrument unless the context indicates otherwise:

(a) **Easement Area** means that part of the Servient Land which is subject to the easement;

(b) **Grantee** in relation to each easement means Auckland Council and its successors or agents;

(c) **Grantor** in relation to each easement means the registered proprietor for the time being of the Servient Land; and

(d) **Servient Land** means the land recorded in this easement instrument as the Servient Tenement.

1.2 Term: Each grant will be for all time. No power is implied in respect of any easement for the Grantor to determine the easement for breach of any provision (whether express or implied) in this easement instrument or for any other cause, it being the intention of the parties that each easement will subsist for all time unless it is surrendered.

1.3 Default: If any party (**defaulting party**) neglects or refuses to perform or join with the other party (**other party**) in performing any obligation under this easement instrument in respect of any easement, the following provisions will apply:

(a) the other party may serve on the defaulting party a written notice (**default notice**):

(i) requiring the defaulting party to perform or to join in performing that obligation; and

(ii) stating that, after the expiration of twenty days from service of the default notice, the other party may perform that obligation;

(b) if at the expiry of the default notice, the defaulting party still neglects or refuses to perform or join in performing the obligation, the other party may:

(i) perform that obligation; and

(ii) for that purpose enter the relevant land and carry out any work;

(c) the defaulting party will be liable to pay to the other party the costs of the default notice and the specified proportion of the

costs in performing the obligation within one month of receiving notice of these costs; and

(d) the other party may recover from the defaulting party as a liquidated debt any money payable under this sub-clause.

1.4 **No Impediment:** The Grantor will not do any act which impedes, interferes with or restricts the rights of the Grantee and other authorised persons in relation to any easement.

2. GRANTEE'S RIGHTS

2.1 The Grantee will have the right to, at all times:

(a) enter upon the Servient Land for the purpose of implementing the planting shown on the drawing prepared by Architectus entitled "New Lynn TOD: Clark Street Extension/Low Level Bridge", numbered LC-010 and dated August 2009;

(b) with or without employees, contractors and agents, together with all necessary plant, tools and machinery, to enter upon the Servient Land for the purposes of planting or to carry out any work or maintenance that may be necessary to maintain the planting in a visually pleasing and tidy state.

3. GRANTOR'S OBLIGATIONS

3.1 The Grantor will not do or cause to be done anything that interferes or damages the vegetation planted on the Servient Land without the consent of the Grantee.

3.2 The Grantee will allow the Grantor to erect signage within the Servient Land and to provide reasonable pedestrian access across the Servient Land (subject in both cases to any consent required under the Resource Management Act 1991) with the prior written consent of the Grantee which consent cannot be unreasonably withheld or delayed.

3.3 If the Grantor applies for and is granted a resource consent for all or part of the Grantor's land (where the building to be constructed under this consent fronts in whole or part to Clark Street) then the Grantee will, at the expense of the Grantor, surrender this easement in whole or in part at such time as the resource consent for the development is issued and implemented.

architectus™

Architecture
Urban Design
Planning
Interior Architecture

KEY:

TE	TREE EXISTING	S5 SEAT T5	LAWN
TN	TREE NEW	S6 SEAT T6	GARDEN BED
WX	LIGHT POLE WX		RAIN GARDEN
WX	LIGHT POLE WX W/BACK		TIMBER DECK
L1	LIGHT POLE (REFER DWG LC-XXX)		BRICK PAVERS
L2	UPLIGHT		
	RUBBISH BIN		

PAVING TYPE A CONCRETE PAVERS
PAVING TYPE B BASALT COBBLESTONES
EXPOSED AGGREGATE CONCRETE
HONED CONCRETE
ASPHALT

NOTE: REFER BECA PLANS FOR STREET LAYOUT

Location Plan:

NEW LYNN TOD: CLARK STREET EXTENSION/LOW LEVEL BRIDGE

Job no **0704.06**

August 2009 | Prepared for **Waitakere City Council** | Drawing **BRIDGE (WEST)** | **1:500** | Drawing no **LC-010** Issue **C**

B352535.1 7E

(Approved by the District Registrar, North Auckland, No. 4379/81)

Under the Land Transfer Act, 1952

040CB4 326522 DTY [illegible]
NEW ZEALAND STAMP DUTY AKS

Memorandum of Transfer Creating Gas Easement

WHEREAS CAMBRIDGE CLOTHING COMPANY LIMITED a duly incorporated Company having its registered office at Auckland

(hereinafter called "the Grantor") being registered as proprietor of an estate in fee simple

subject however to such encumbrances, liens, and interests as are notified by memoranda underwritten or endorsed hereon in all that piece of land situated in the Land District of North Auckland containing 1.6410 hectares more or less being Lots 12, 13, 14, 15, 16, and 17 Deposited Plan 42203 and being portion of allotment 256 Parish of Waikomiti and being all the land comprised and described in Certificate of Title Register Book Volume 1186 Folio 92

SUBJECT TO: 1. 099565.3 Mortgage to the Australian Mutual Provident Society.
2. 801830.1 Mortgage to the Bank of New Zealand.

AND WHEREAS the Grantor has agreed to grant to the AUCKLAND GAS COMPANY LIMITED a duly incorporated Company with its registered office at Auckland (hereinafter called "the Grantee") the rights interests and licenses in respect of the said land hereinafter set forth

NOW THEREFORE IN CONSIDERATION of the sum of TEN CENTS (.10c)

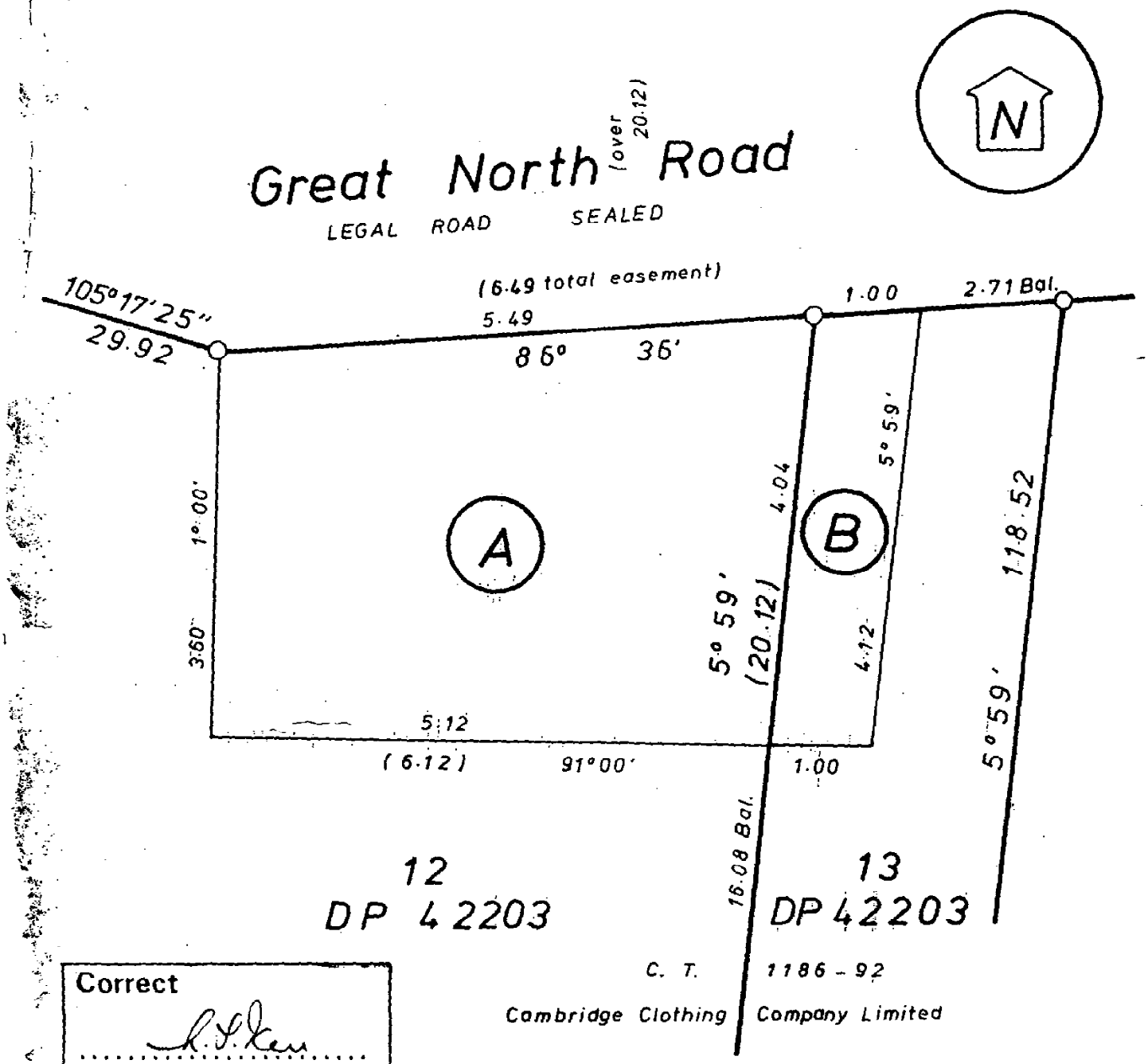
the Grantor DOTH HEREBY TRANSFER AND GRANT unto the Grantee subject to the following convenants conditions and restrictions as an easement in gross the full free right liberty and licence TO CARRY AND/OR CONVEY GAS through a main or mains now or hereafter laid over and beneath the surface of that portion of the said land marked "A" on the diagram endorsed hereto

(hereinafter called the "Easement Land")

AND FOR THAT PURPOSE the Grantee its servants workmen and agents with or without vehicles laden or unladen and with tools machinery and equipment may from time to time and at all times as occasions shall require have a right of way over the Easement Land and such other surrounding areas as may be necessary or convenient for the purposes of laying constructing operating inspecting maintaining cleaning repairing altering and renewing such gas distribution equipment and housing on or beneath the Easement Land as the Grantee may require from time to time to maintain a Gas supply to the Grantor and/or others.

PROVIDED THAT the Grantee shall do as little damage as possible to the surface of the Easement Land and the surrounding areas and any vegetation fences or erections thereon

AND PROVIDED ALSO that any opening in the surface of the Easement Land or the surrounding areas shall be filled in by the Grantee as soon as possible after the necessary work for which such opening was made has been completed and the surface levelled off in a proper manner and resurfaced if necessary to restore it to the condition it was in prior to the work being done and all damage (if any) to fences or other erections on the Easement Land made good and restored to their prior condition in a proper and workman like manner



Correct

.....

20/12/84 L.T. Surveyor

Prepared for:

The Auckland Gas Company Limited

proposed gas easement in gross over part lots 12 & 13 DP 42203

comprised in C.T. 1186-92

SCALE: 1:50

DRAWN: J H Y

DATE April 1983

FILE REF.: 1719

John Yeoman & Associates
chartered surveyors and planners
Red Cross Building, P.O. Box 7184 — 85 Wakefield Street, Auckland — Telephone 30-880

AND THE GRANTOR HEREBY COVENANTS WITH THE GRANTEE that the Grantor will not place any buildings or erections or plant or allow or suffer to grow any tree or shrub on the Easement Land and will not at any time hereafter do permit or suffer to be done any act whereby the rights powers licences and liberties hereby granted to the Grantee may be interfered with or affected in any way.

AND IT IS AGREED AND DECLARED that the Grantee shall not be liable to contribute to the cost of the erection or maintenance of any dividing fence between any adjoining land and the Easement Land or any part or parts thereof

AND FURTHER IT IS AGREED AND DECLARED that nothing herein contained or implied shall be construed to compel the Grantee to convey gas through any main or mains or to otherwise avail itself of the Easement hereby created.

IN WITNESS WHEREOF these presents have been executed this 3rd day of October One thousand nine hundred and eighty-~~three~~ four.

THE Common Seal of)
THE CAMBRIDGE CLOTHING)
COMPANY LIMITED was)
hereunto affixed in)
the presence of:-)

CAMBRIDGE CLOTHING COMPANY LIMITED The Common Seal of

TRANSFER
CREATING GAS EASEMENT

The Cambridge Clothing Company Limited ..... GRANTOR

AUCKLAND GAS COMPANY LIMITED
GRANTEE

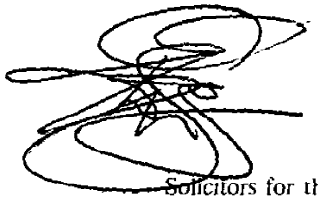
Particulars entered in the Registers described herein at the day and hour endorsed below

.....
Assistant Land Registrar
of the District of North Auckland

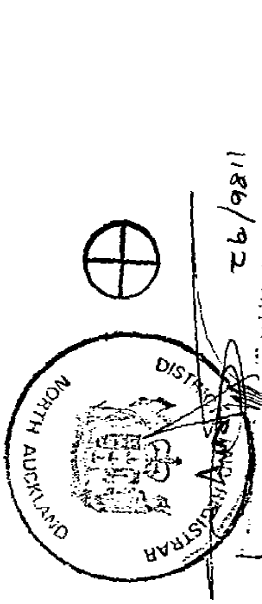
Buddle Weir & Co.,
Solicitors,
Auckland.

Solicitors for the Grantee

Correct for the purposes of the Land Transfer Act.



Solicitors for the Grantee.



ASSL LAND REGISTRAR
1186/92

E 2.35 21.NOV84 B 352535
PARTICULARS ENTERED IN REGISTER
LAND REGISTRY AUCKLAND

Appendix C

Feasibility Plan

3094 GREAT NORTH ROAD

NEW LYNN PRIMARY SCHOOL

FEASIBILITY STUDY

19/02/2020

asc architects

designgroup

17 maidstone street

ponsonby, auckland 1021

po box 5736, auckland 1141

new zealand

p. +64 9 377 5332

team@ascarchitects.co.nz

www.ascarchitects.co.nz

architecture

interior design

urban design

asc architects
designgroup

3094 GREAT NORTH ROAD
LOCATION PLAN

Project No.:	19813
Scale:	1:5000 @ A3
Date:	19 FEBRUARY 2020

N

SK 01

asc architects
designgroup

3094 GREAT NORTH ROAD
EXISTING AERIAL & CONTEXT

Project No.:	19813
Scale:	1:1000 @ A3
Date:	19 FEBRUARY 2020

N

SK 02

School Roll

	Interim Roll			Final Roll		
	Non MI	MI roll	Total	Non MI	MI roll	Total
Year 0	0		0	0		0
Year 1	0			130		130
Year 2	0			130		130
Year 3	0			135		135
Year 4	0			135		135
Year 5	0			135		135
Year 6	0			135		135
Year 7	0			0		0
Year 8	0			0		0
Year 9	0			0		0
Year 10	0			0		0
Year 11	0			0		0
Year 12	0			0		0
Year 13+	0			0		0
Total school roll			0			800
O/S tech						
ORRS high						
ORRS very high						

School Entitlement

	Final roll entitlement
# Classroom TS (ex gym)	34
# Gymnasium TS	0.0
Classroom area	2,572
Gymnasium area	0
Library area	85
Administration area	272
Resource area	96
Hall area	400
Total net area	3,424
Total gross area	**4,452**

asc architects
designgroup

3094 GREAT NORTH ROAD
FEASIBILITY PLAN - GROUND FLOOR

Project No.:	19813
Scale:	1:750 @ A3
Date:	19 FEBRUARY 2020

N

SK 04

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	55dB L_{Aeq}
Sunday 9am to 6pm	
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);

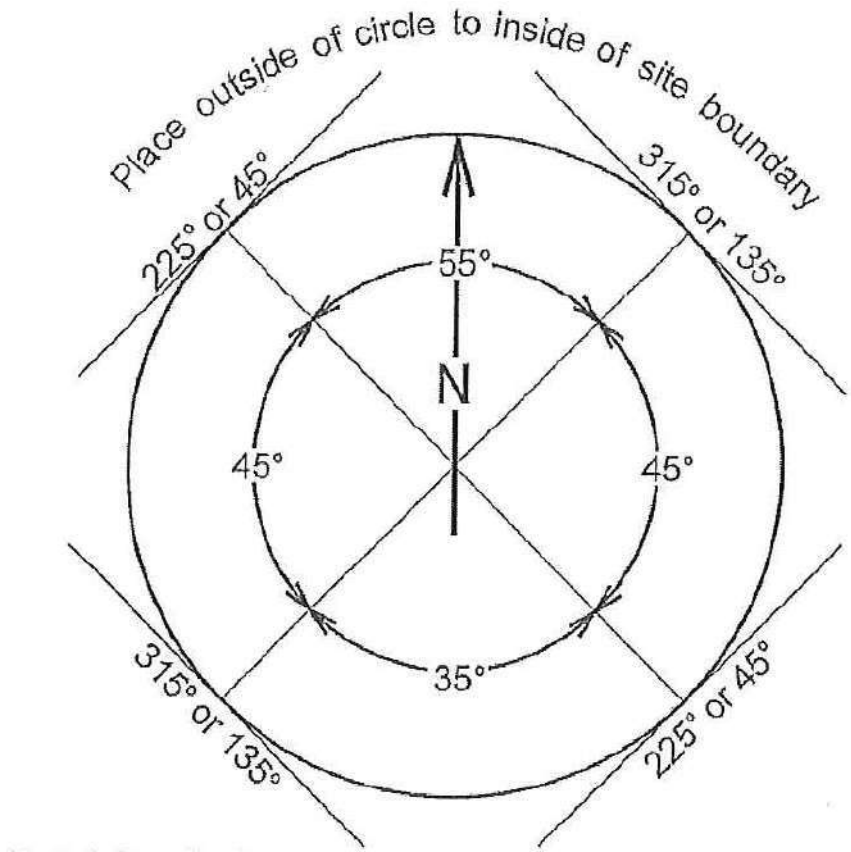
d) Amending any internal pedestrian circulation routes/pathways;

e) Installing, maintaining or repairing any in ground infrastructure services such as stormwater, sewerage and water lines and connections, including any ancillary earthworks;

f) 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

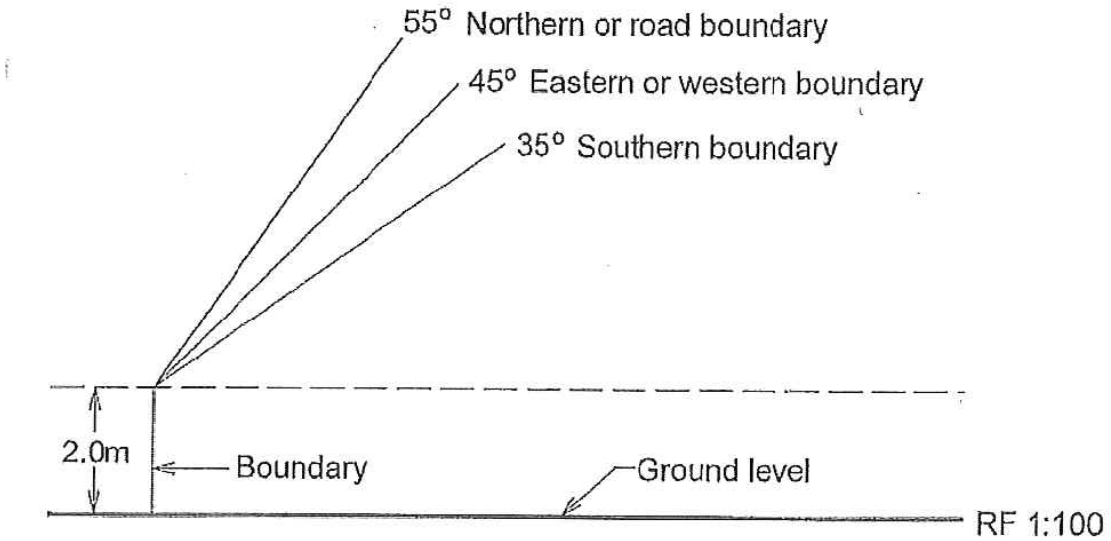
g) General site maintenance and repair work, or boundary fencing otherwise permitted by the Unitary Plan.

Recession Plane Indicator



Note: North is True North
Bearings on the circle increase in a clockwise direction

Recession Plan Cross Section



Appendix E

Integrated Transport Assessment

New Lynn Primary School - 3094 Great North Road Designation

Integrated Transportation Assessment

IZ131900-0000-CT-RPT-0001 | Revision 5.0

26 May 2020

Ministry of Education

No. 11061

Document history and status

Revision	Date	Description	Author	Checked	Reviewed	Approved
Draft 1.0	26-03-2020	Draft for client review and comment	KJK	ANL	TMB	TMB
Revision 2.0	03-04-2020	Minor updates to address client comments	KJK	ANL	TMB	TMB
Revision 3.0	15-05-2020	Updates to address AT and AFC comments	KJK	TMB	TMB	TMB
Revision 4.0	20-05-2020	Minor update to address comment	KJK	ANL	TMB	TMB
Revision 5.0	26-05-2020	Minor update to address comment	KJK	TMB	TMB	TMB

Distribution of copies

Revision	Issue	Date	Issued to	Comments
Draft 1.0	Revision 1.0	26-03-2020	Ministry of Education	Draft for client review and comment
Revision 2.0	Revision 2.0	03-04-2020	Ministry of Education Auckland Transport	Auckland Transport issue for discussion
Revision 3.0	Revision 3.0	15-05-2020	Ministry of Education	Revised to incorporate review comments
Revision 4.0	Revision 4.0	20-05-2020	Ministry of Education	Revised to incorporate review comments
Revision 5.0	Revision 5.0	26-05-2020	Ministry of Education	Revised to incorporate minor review comment

New Lynn Primary School - 3094 Great North Road Designation

Project No:	IZ131900
Document Title:	Integrated Transportation Assessment
Document No.:	IZ131900-0000-CT-RPT-0001
Revision:	Revision 5.0
Document Status:	Revision 5.0
Date:	26 May 2020
Client Name:	Ministry of Education
Client No:	No. 11061
Project Manager:	Achini Liyanagama
Author:	Kerry King
File Name:	New Lynn Primary School Integrated Transport Assessment Revision 5.0_26-05-2020

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Contents

Executive Summary

Jacobs New Zealand Limited (Jacobs) has been commissioned by the Ministry of Education to undertake an Integrated Transportation Assessment (ITA) for the proposed designation for a new primary school and early childhood education (ECE) centre in New Lynn, Auckland.

The proposed site at 3094 Great North Road lies within the New Lynn Metropolitan Centre. New Lynn has been identified as a development area in the Auckland Plan and significant housing and business growth is expected in and around the Metropolitan Centre over the next 30 years. The school is expected to open in approximately 2025 to accommodate existing and future demand for new educational facilities and the site is centrally located to an existing residential catchment. In the longer term, the site will almost be fully surrounded by mid- to high-density residential, commercial and mixed-use developments as further stages of adjacent development projects are completed.

The assessment has been undertaken for a future masterplan school roll of 800 students and an estimated 54 full-time equivalent staff. The ECE will likely provide for 50 children and an estimated nine staff members. This ITA considers the ability of the future transport network to accommodate the transport demand generated by the proposed school and ECE (at their masterplan rolls).

Overview of findings:

The proposed site is considered to be appropriate for redevelopment as a primary school and ECE centre given the existing and proposed walking and cycling connections to the site from the surrounding student catchment. There is significant potential for students to walk to school as the boundary of the catchment is expected to not be more than a 1.5km walking distance from the school. The site is highly accessible by public transport due to the proximity of the school site to the New Lynn public transport interchange and these factors have a large potential to offset the number of vehicle trips generated by the school and ECE.

As a conservative estimate, the number of vehicle trips generated by the school and ECE is around 442 vehicles for the masterplan scenario in the AM peak and 386 vehicles in the PM peak. Traffic modelling was undertaken to understand the likely traffic impacts of the proposed school and ECE on the performance of the main access to the site and three surrounding intersections.

The traffic impacts on the Great North Road / Rata Street / Titirangi Road, Great North Road / Clark Street and the Clark Street / Rankin Avenue / Totara Avenue intersections are considered to be no more than minor in terms of Level of Service (LOS), delay and queue lengths. However, additional traffic is expected to have a significant impact on the performance of the Clark Street / Cambridge Lane (site accessway) intersection. Modelling results indicate that under the future masterplan scenario, queue lengths exceeding 100m may develop at the Clark Street / Cambridge Lane intersection, which will, without mitigation, impact on the performance and operation of nearby intersections given their close proximity to each other as well as circulation within the proposed site.

An opportunity to optimise the signals at the access intersection was identified to mitigate the impact of excessive queue lengths developing at the access intersection. Initial sensitivity considerations indicate that signal optimisation (including reducing the cycle length) has the potential to reduce queue lengths at intersection approaches by up to approximately 30% with an associated improvement in overall intersection LOS. This improves intersection operations without the need for construction or physical modifications to the existing intersection arrangement.

Summary of recommendations / next steps:

The following transport recommendations are identified for the subsequent Outline Plan of Works stage of the project:

- Ministry of Education to engage with Auckland Council on opportunities to widen the Clark Street footpath adjacent to the school site into an existing planting easement to improve pedestrian safety;
- Ministry of Education to engage with Auckland Transport on implementing a 40km/h variable speed limit along the road frontage to the site during school start and finish times;
- Two dedicated pedestrian / cyclist accessways to the school site are provided which are completely separated from the main vehicle access; one from Great North Road at the northern site boundary and one mid-block access from Clark Street at the eastern site boundary;
- All operational vehicle access to the site is via Cambridge Lane from Clark Street (i.e. no additional vehicle accessways are proposed). This recommendation is proposed as a site-specific condition for the designation;
- The levels of vehicle, bicycle and scooter parking proposed to serve the primary school and ECE will be further investigated at the Outline Plan stage:
    - Given the site's high level of accessibility by public transport, walking and cycling; reduced vehicle parking rates (relative to the Ministry's standard designation conditions for educational purposes) are considered appropriate and should be explored. It is assessed that the appropriate levels of parking can be accommodated within the site.
    - On-site pick-up and drop-off spaces are provided for the primary school.
- Further development of the Feasibility Study concept design plan for the carpark to comply with Auckland Transport's Transport Design Manual - Parking Design Engineering Code[1] guidelines and the Auckland Unitary Plan (Operative in Part) (AUP(OP)) Chapter E27 – Transport[2]; and
- It is recommended that a Construction Traffic Management Plan (CTMP) is prepared by the contractors, as required by the NZ Transport Agency and Auckland Transport.

It is recommended that the following mitigation measures are considered by the Ministry of Education, Auckland Transport, Auckland Council and the school / ECE. The mitigation measures proposed in this ITA are to be further assessed in the Outline Plan of Works phase, as per the conditions outlined in Form 18 Notice of Requirement[3]:

- Modification of the traffic signal phasing at the intersection/s adjacent to the school (subject to the approval of the road controlling authority), to allow for increased pedestrian crossing times, improved circulation within the carpark, and to reduce queue lengths and impacts on adjacent intersections. Shorter cycle times for the Cambridge Lane / Clark Street intersection should be investigated and it is recommended that extending the length of the right-turn pocket on the Clark Street north approach is also considered; and
- Development of a School Travel Plan (STP) to manage travel demand to and from the school and encourage measures such as implementing a Kea Crossing, Walking School Buses, walking and cycling as viable modes of travel, carpooling and public transport usage. The STP is to be developed with Auckland Transport prior to the opening of the school and should align with the Travelwise Programme.

With the application of the mitigation measures and recommendations in this report, it is assessed that that the local transport network will be able to accommodate the levels of demand likely to be generated by the school

[1] Auckland Transport, 2020. *Draft Transport Design Manual - Parking Design Engineering Code.*

[2] Auckland Council, November 2015. *Auckland Unitary Plan Operative in Part Chapter E – Auckland Wide: E27 Transport.* Site accessed from https://unitaryplan.aucklandcouncil.govt.nz/Images/Auckland%20Unitary%20Plan%20Operative/Chapter%20E%20Auckland-wide/4.%20Infrastructure/E27%20Transport.pdf

[3] Incite Auckland Limited, March 2020. *Draft Form 18 Notice of Requirement by Minister, Local Authority, or requiring authority for new designation of alteration of designation.*

and ECE. The implementation of any of these recommendations should involve consultation with Auckland Transport and Auckland Council.

The proposal is considered to align with the overarching objectives and outcomes sought by local and Auckland-wide transport plans and strategies. It is therefore concluded that there are no significant transportation or traffic effects which would preclude the redevelopment of the site to provide a primary school, ECE and associated facilities and infrastructure.

On the basis of this assessment of transportation impacts and recommendations, it is considered that Auckland Council should proceed with the Notice of Requirement (NOR) to designate the site for the proposed primary school and ECE centre.

Important note about your report

The sole purpose of this report and the associated services performed by Jacobs is to develop an Integrated Transportation Assessment (ITA) for a proposed primary school and Early Childhood Education (ECE) centre located at 3094 Great North Road, New Lynn, in accordance with the scope of services set out in the contract between Jacobs and the Client (the Ministry of Education). That scope of services, as described in this report, was developed with the Client.

In preparing this report, Jacobs has relied upon, and presumed accurate, any information (or confirmation of the absence thereof) provided by the Client and/or from other sources. Except as otherwise stated in the report, Jacobs has not attempted to verify the accuracy or completeness of any such information. If the information is subsequently determined to be false, inaccurate or incomplete then it is possible that our observations and conclusions as expressed in this report may change.

Jacobs derived the data in this report from information sourced from the Client (if any) and/or available in the public domain at the time or times outlined in this report. The passage of time, manifestation of latent conditions or impacts of future events may require further examination of the project and subsequent data analysis, and re-evaluation of the data, findings, observations and conclusions expressed in this report. Jacobs has prepared this report in accordance with the usual care and thoroughness of the consulting profession, for the sole purpose described above and by reference to applicable standards, guidelines, procedures and practices at the date of issue of this report. For the reasons outlined above, however, no other warranty or guarantee, whether expressed or implied, is made as to the data, observations and findings expressed in this report, to the extent permitted by law.

This report should be read in full and no excerpts are to be taken as representative of the findings. No responsibility is accepted by Jacobs for use of any part of this report in any other context. This report has been prepared on behalf of, and for the exclusive use of, Jacobs's Client, and is subject to, and issued in accordance with, the provisions of the contract between Jacobs and the Client. Jacobs accepts no liability or responsibility whatsoever for, or in respect of, any use of, or reliance upon, this report by any third party.

1. Introduction

1.1 Background

New Lynn has been identified as a key area for strategic growth and urban regeneration within the Auckland Region and its location presents an opportunity to develop high-quality, intensive residential areas close to the New Lynn Metropolitan Centre and the transport interchange. This growth includes a large residential development site located immediately to the south of the Metropolitan Centre which is currently being redeveloped to provide up to 2,000 homes over the next 10 years. In the longer term, it is expected that approximately 4,000 new homes will be constructed across New Lynn over the next 30 years[4].

Intensive development in and around the New Lynn Metropolitan Centre will result in increased demand for education provision within the existing local network of schools. Jacobs New Zealand Limited (Jacobs) and Incite Auckland Limited (Incite) previously completed a site selection study for a new primary school to serve expected growth in New Lynn[5]. This study involved a Stage 2 assessment of four shortlisted sites in New Lynn; however, the Ministry of Education (the Ministry) did not progress the development of any of the shortlisted sites due to displacement of existing land use activities and potential transportation issues and constraints.

A 1.87ha site at 3094 Great North Road was subsequently identified by the Ministry which is located in the New Lynn Metropolitan Centre zone, outside of the original search area. A site visit and high-level desktop assessment of the site was undertaken by Incite and Jacobs in March 2019 and it was considered that existing site constraints from a planning or transport planning perspective were unlikely to preclude the site from being developed as a primary school[6,7].

The Ministry has acquired the site at 3094 Great North Road for education purposes, and it has been proposed that the site is progressed to the designation phase. The requirement for new educational facilities was updated in October 2019 to include Early Childhood Education (ECE) facilities. The school is expected to serve students living within the catchment zone shown in Figure 1-1 and the school requirements are summarised in Table 1-1. The opening year for the school has not been confirmed as this is dependent on the rate of redevelopment of the New Lynn precinct, but it is estimated that the school will open in approximately 2025 with the masterplan roll numbers achieved when surrounding developments are completed.

[4] Auckland Council, 2010. *New Lynn Urban Plan 2010 – 2030.*
[5] Jacobs New Zealand Limited (for Incite Limited), September 2016. *New Primary School Site Evaluation Assessment, New Lynn, Auckland – Stage 2 Site Options Assessment.*
[6] Incite Auckland Limited, March 2019. *3094 Great North Road High-level Planning and Transportation Assessment Memorandum.*
[7] Jacobs New Zealand Limited, March 2019. *High-level Transportation Assessment of 3094 Great North Road Site Memorandum.*

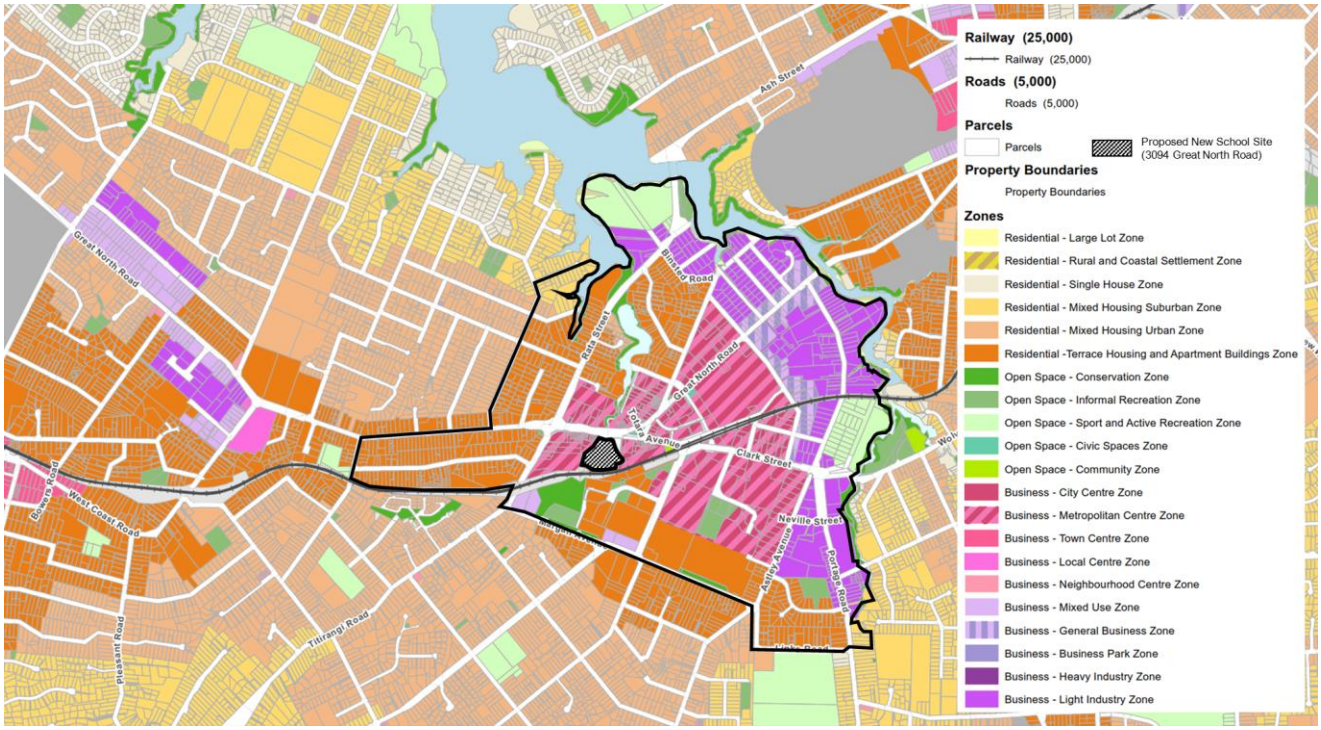

Figure 1-1 Proposed New Lynn Primary School site and surrounding Auckland Unitary Plan zoning

Table 1-1 New Lynn Primary School requirements[8]

School requirements	Description
Type of school	Contributing primary school, years 1 - 6
Proposed opening date	Estimated at 2025 (depending on generated demand)
Opening roll	Approximately 350 – 400 students
Masterplan roll	800 students
ECE provision	Yes, accommodating 50 children (in a separate building)

1.2 Purpose of this report

The Ministry has commissioned Jacobs to undertake an ITA for a proposed designation of land at 3094 Great North Road for a new primary school and Early Childhood Education (ECE) centre in New Lynn, Auckland. The purpose of this ITA is to assess the potential transport-related effects of the operation of the proposed new Primary School. This report describes the existing transport environment surrounding the site, the proposed school and ECE developments and assesses the proposal against the relevant transportation policies.

An ITA is required as it supports a Notice of Requirement and designation of the site for the proposed primary school and has been prepared in accordance with Auckland Transport's industry-recognised guidelines[9]. A full ITA is also considered more appropriate than a Transportation Assessment (TA) due to the location of the Primary School within the New Lynn Metropolitan Centre and the site's high level of accessibility by walking, cycling and frequent public transport services.

This ITA should be read in conjunction with the following separate documents which refer to the recommendations of this assessment:

[8] Proposed school and ECE requirements provided by the Ministry of Education.
[9] Auckland Transport. *ITA Guidelines.* Site retrieved https://at.govt.nz/about-us/manuals-guidelines/integrated-transport-assessment-guidelines/when-to-use-these-guidelines/

- Notice of Requirement & Assessment of Environmental Effects Report[10] as required under Section 168 of the Resource Management Act 1991 (RMA) which assesses the proposed designation against Section 171 of the RMA; and
- Form 18 Notice of Requirement[11] which sets out any site-specific designation conditions.

It should be noted that the mitigation measures proposed as part of this ITA relating to the establishment Outline Plan of Works phase, are as per the conditions outlined in Form 18.

1.3 Report structure

This ITA report is structured as follows:

- Section 2 provides a description of the existing transport environment in the vicinity of the primary school and ECE site;
- Section 3 describes the future transport environment;
- Section 4 describes the proposed development and estimates the trip generating potential of the primary school and ECE;
- Section 5 provides an assessment of the transport effects of the primary school and ECE and outlines potential mitigation measures;
- Section 6 considers the consistency of the proposed school with relevant transport plans and strategies; and
- Section 7 provides a summary of the assessment, including conclusions and recommendations.

1.4 Information sources

The development of this ITA has relied on the following information sources and guidelines:

- Ministry of Education school requirements including student numbers, estimated school and ECE opening dates and school catchment;
- Auckland Unitary Plan (Operative in Part) (AUP(OP));
- Google API live and predicted travel time data (for traffic model validation purposes);
- SCATS traffic data and intersection video footage provided by Auckland Transport;
- ITA guidelines for the Auckland region; and
- 3094 Great North Road Feasibility Study by ASC Architects[12].

1.5 Engagement

A number of meetings were held with the Ministry of Education; representatives from Auckland Council, Auckland Transport; and the project team (Incite Auckland Limited and Morphum Environmental Limited), to agree on the approach for the designation of the site. The meetings which informed the development of this ITA are summarised in Table 1-2.

[10] Incite Auckland Limited, March 2020. *Draft 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 0-6) and Early Childhood Education (ECE) at 3094-3096 Great North Road, New Lynn, Auckland.*

[11] Incite Auckland Limited, March 2020. *Draft Form 18 Notice of Requirement by Minister, Local Authority, or requiring authority for new designation of alteration of designation.*

[12] ASC Architects, 19 February 2020. *3094 Great North Road New Lynn Primary School Feasibility Study.*

Table 1-2 Project team engagement

Meeting date	Attendees	Meeting outcome
Project kick-off and initial site visit 31-10-2019	Ministry of Education, Incite, Morphum and Jacobs	Project team briefing of project background, scope of work and general timeframes followed by a site walkover to gain context
Pre-application meeting 27-11-2019	Representatives from Auckland Council (Planning), Auckland Transport (Planning), the Ministry of Education, Incite, Morphum and Jacobs	Meeting to discuss the proposed approach to designating the site, provision of carparking within the site and to identify any high-level issues with the proposed application process
Pre-application meeting further correspondence 11-12-2019	Auckland Transport / Auckland Forecasting Centre (AFC)	Following the pre-application meeting, the approach to traffic modelling was confirmed with AFC by email including background traffic growth assumptions
Feasibility study update meeting 12-12-2019	Ministry of Education, Incite, ASC Architects, Jacobs	Meeting to discuss the required updates to be made to the Feasibility Study including school requirement assumptions and numbers of carparking spaces (to guide the Feasibility Study)

Following on from the pre-application meeting, the New Lynn Primary School ITA Report Draft Revision 2.0 was shared with Auckland Transport and AFC on 03-04-2020. Comments were received from technical specialists on 30-04-2020 and the responses and actions for each of the comments are summarised in Appendix A and incorporated into the New Lynn Primary School ITA Report Final Revision 3.0 (this report).

2. Existing Transport Environment

2.1 Site context

The site is located within the New Lynn Metropolitan Centre, approximately 12 km south-west of the Auckland CBD, as shown in Figure 2-1. The site is currently occupied by impervious carparking and a number of buildings (factory, offices, warehouses and retail) with leases due to expire by approximately 2023.

The total site area is 1.87ha; however, the developable area is approximately 1.5ha due to the presence of a Significant Ecological Area (SEA). The eastern boundary of the site provides frontage onto Clark Street and an existing signalised intersection provides vehicle and pedestrian access from Clark Street into the site. The remaining property boundaries provide no effective road frontage as shown in Figure 2-1. The northern boundary of the site has access to road frontage; however, it is constrained by the adjacent Great North Road / Clark Street intersection. The Western Heavy Rail Line runs along the southern boundary of the site and the western portion drops off into the Rewarewa Stream and the steep gully is covered in vegetation.

A site visit was undertaken by Jacobs staff on 31 October 2019 and observations relevant to the existing transport environment are noted in the following sections.

Figure 2-1 Location of proposed school and ECE

The site is located in a Business – Metropolitan Centre zone which allows for educational facilities as a permitted activity. The existing surrounding land uses are predominantly Business – Metropolitan Centre and Residential – Terrace Housing and Apartment Buildings (THAB) as zoned by the AUP(OP). As shown in Figure 2-2, the catchment or area of interest for the School covers the following areas:

- New Lynn Business Metropolitan Centre;
- Areas to the north, south and west of the school site which are zoned for Terrace Housing and Apartment Buildings (THAB), which permits higher-density residential living and intensification; and
- General business and light industrial-zoned areas to the north-east of the school site, bounded by the Whau River.

The proposed school site lies within the wider New Lynn precinct, as defined by the I607 New Lynn Precinct Plan[13] and shown in Appendix A. The purpose of the New Lynn Precinct Plan is to enable intensive, high amenity retail, commercial and residential development, while providing for existing activities. The Precinct Plan allows for a more intensive built form and supporting non-residential activities to take advantage of the site's proximity to the New Lynn Metropolitan Centre and public transport interchange. The Precinct Plan does not further control the educational facilities activity beyond the AUP(OP).

The site and surrounds also lie within the New Lynn development area as identified by the Auckland Plan 2050. The disused Crown Lynn industrial clay pit area (17ha), lies to the south-east of the school site which is currently being redeveloped to accommodate up to 2,000 new homes in a mixed-use neighbourhood. Stage 1 of the redevelopment is complete which has delivered approximately 90 terraced houses and apartments.

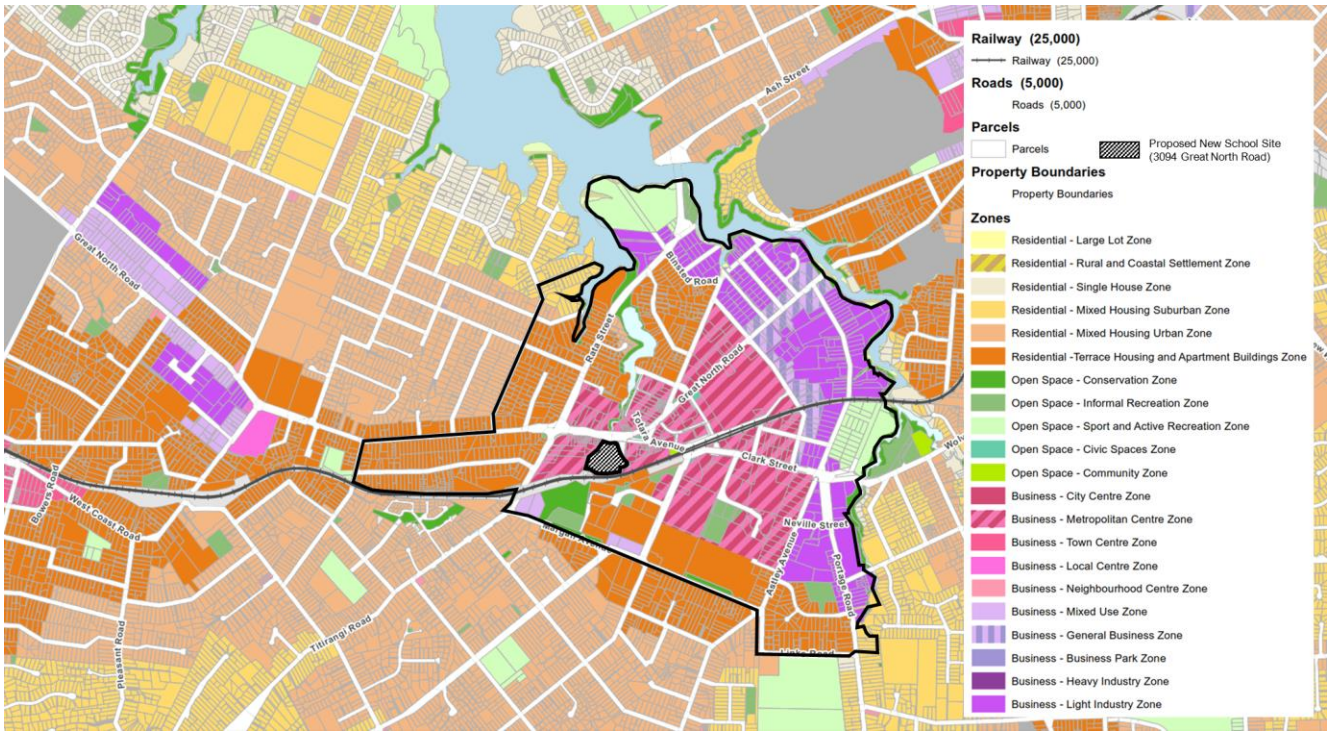

Figure 2-2 AUP(OP) zoning surrounding the proposed school site (3094 Great North Road)[14]

2.2 Existing road environment and traffic volumes

The road hierarchy as defined by NZ Transport Agency's *One Network Road Classification* (ONRC) is shown in Figure 2-3. The characteristics of the existing road network surrounding the site including road classification, 5-day annual average daily traffic (AADT) volumes, estimated percentage of heavy commercial vehicles (HCVs) and posted speed limits are summarised in Table 2-1.

[13] Auckland Council, 22 July 2016. *I607 New Lynn Precinct Plan - Auckland Unitary Plan Independent Hearings Panel Recommendation Version.*
[14] Auckland Council, 2019. *Auckland Council – GeoMaps.* Site retrieved from https://geomapspublic.aucklandcouncil.govt.nz/viewer/index.html

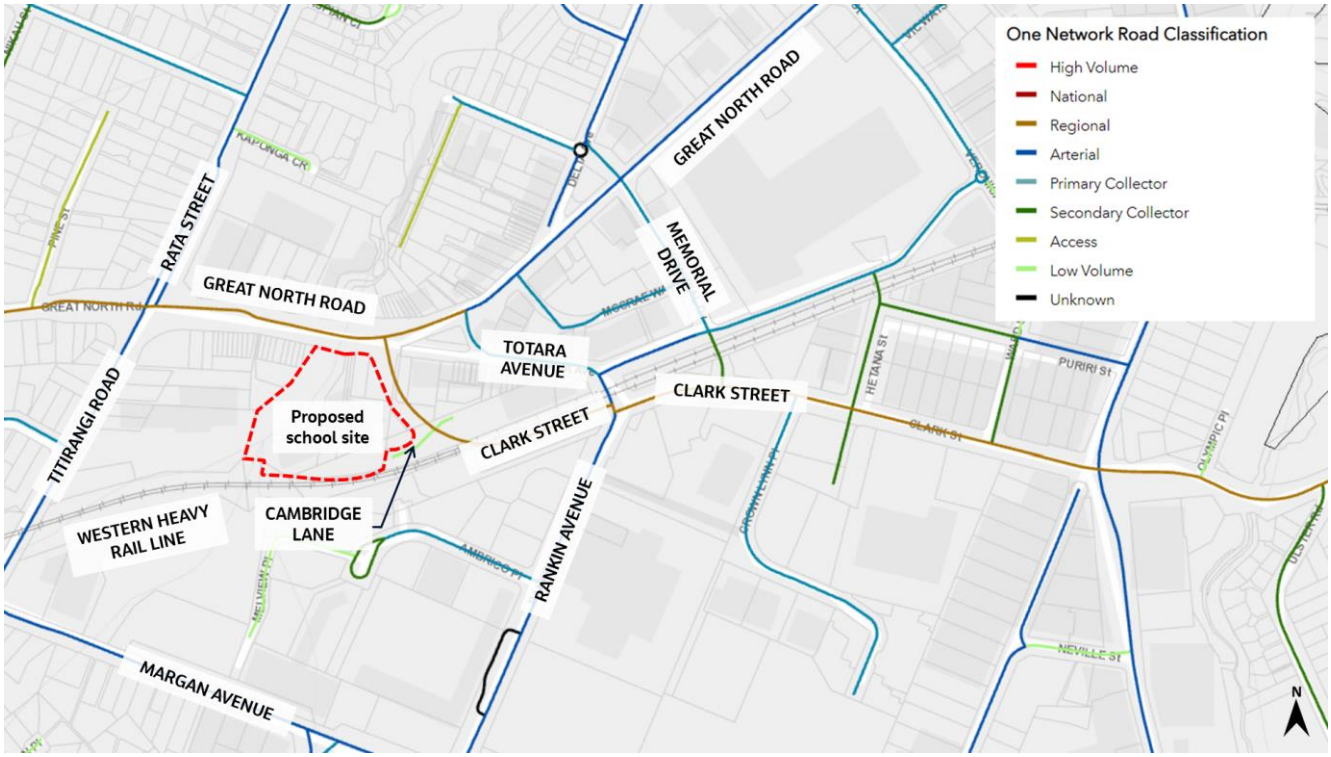

Figure 2-3 Surrounding road network classification[15]

Table 2-1 Summary of surrounding road network characteristics

Road name	ONRC	AADT	HCV	Posted speed
Cambridge Lane (site access road)	Low volume	80 vehicles/day[16]	10%	50km/h
Clark Street (Memorial Avenue – Rankin Avenue)	Regional	22,400 vehicles/day[17]	8%	50 km/h
Great North Road (Rata Street – Nikau Street)	Regional	46,100 vehicles/day[18]	8%	50 km/h
Margan Avenue	Arterial	16,300 vehicles/day	3%	50 km/h
Memorial Drive	Primary Collector	2,700 vehicles/hour[19]	5%	50 km/h
Rankin Avenue	Arterial	12,800 vehicles/day[20]	4%	50 km/h
Rata Street	Arterial	34,500 vehicles/day[21]	5%	50 km/h
Titirangi Road	Arterial	21,800 vehicles/day[22]	4%	50 km/h
Totara Avenue	Primary Collector	600 vehicles/day[23]	4%	50 km/h

[15] NZ Transport Agency. *One Network Road Classification*. Site available from https://nzta.maps.arcgis.com/apps/webappviewer.
[16] Auckland Transport, August 2019. *Traffic Counts to August 2019.* Site accessed from https://at.govt.nz/about-us/reports-publications/traffic-counts/.
[17] Auckland Transport, October 2019. *Traffic Counts to August 2019.* Site accessed from https://at.govt.nz/about-us/reports-publications/traffic-counts/.
[18] Auckland Transport, October 2019. *Traffic Counts to August 2019.* Site accessed from https://at.govt.nz/about-us/reports-publications/traffic-counts/.
[19] NZ Transport Agency. *One Network Road Classification*. Site available from https://nzta.maps.arcgis.com/apps/webappviewer.
[20] Auckland Transport, October 2019. *Traffic Counts to August 2019.* Site accessed from https://at.govt.nz/about-us/reports-publications/traffic-counts/.
[21] Auckland Transport, October 2019. *Traffic Counts to August 2019.* Site accessed from https://at.govt.nz/about-us/reports-publications/traffic-counts/.
[22] NZ Transport Agency. *One Network Road Classification*. Site available from https://nzta.maps.arcgis.com/apps/webappviewer.
[23] Auckland Transport, October 2019. *Traffic Counts to August 2019.* Site accessed from https://at.govt.nz/about-us/reports-publications/traffic-counts/.

The site is currently accessible from Cambridge Lane via a signalised intersection with the Clark Street Extension (Figure 2-5). Cambridge Lane is a classified as a Low Volume access road and provides one traffic lane in each direction to/from the site (see Figure 2-6). The carriageway width is approximately 7.7m (kerb-to-kerb) which widens out to approximately 18.0m at the limit line at the signalised intersection with Clark Street. Footpaths are provided on both sides of Cambridge Lane which are approximately 1.8m – 2.0m wide. Signal poles are located at the intersection which reduces the clear through route to approximately 1.2m for a localised section of the footpath.

Clark Street was extended to form a road-over-rail bridge (shown in Figure 2-6 and Figure 2-7), as part of the New Lynn transit-oriented development project in 2010 – 2012 and is classified as having a Regional function. Clark Street is also identified as an Arterial road as set out in the policy framework of E27 Transport in the AUP(OP)[24]. The purpose of extending Clark Street and creating an overbridge was to divert general traffic and heavy vehicles from travelling through the upgraded town centre and new shared spaces. Clark Street is an overweight route and provides a connection to Great North Road which is both an overweight and an over-dimension route. Clark Road also forms a section of the Level 1B Strategic Freight Network[25] which defines freight traffic as a high-priority transport mode. This is reflected in a relatively high percentage (8%) of vehicles which are HCVs based on Auckland Transport traffic surveys[26]. The carriageway is approximately 16.1m wide with two lanes in each direction (separated by a 3.0m-wide painted flush median), and footpaths are provided on both sides of the road.

[24] Auckland Council, 2016. *Auckland Unitary Plan (Operative in Part) – Controls: Arterial Roads.* Site accessed from https://geomapspublic.aucklandcouncil.govt.nz/viewer/index.html

[25] 2009. *2009 Strategic Freight Network Maps.*

[26] Auckland Transport, October 2019. *Traffic Counts to August 2019.* Site accessed from https://at.govt.nz/about-us/reports-publications/traffic-counts/.

Figure 2-4 Existing site vehicle access

Figure 2-5 Clark Street and Cambridge Lane intersection (looking towards Great North Road) (photo taken at 11:30 am on 31-10-2019)

Figure 2-6 Cambridge Lane (looking east towards the Clark Street intersection and overbridge) (photo taken at 11:30 am on 31-10-2019)

Figure 2-7 Clark Street overbridge (photo taken at 11:30 am on 31-10-2019)

2.3 Walking and cycling

Footpaths are provided on both sides of most streets within the vicinity of the site and these facilities provide connectivity around the site and out towards residential and commercial areas within the wider study area.

Footpaths are provided on both sides of Cambridge Lane which are approximately 1.8m – 2.0m wide. Signal poles are located at the intersection which reduces the clear through route to approximately 1.2m for a localised section of the footpath. The intersection of Cambridge Lane and Clark Street is signalised, and safe pedestrian crossings are provided across the north and west approaches. A mid-block pedestrian accessway to the site is provided between the Clark Street intersections with Great North Road and Cambridge Lane (as shown in Figure 2-11**).**

Cycling facilities including shared paths, quiet routes / laneways, on-street cycle lanes and bike parking spaces are provided in the wider vicinity of the site as shown in Figure 2-8. No safe cycling facilities are currently provided along the section of Clark Street adjacent to the site.

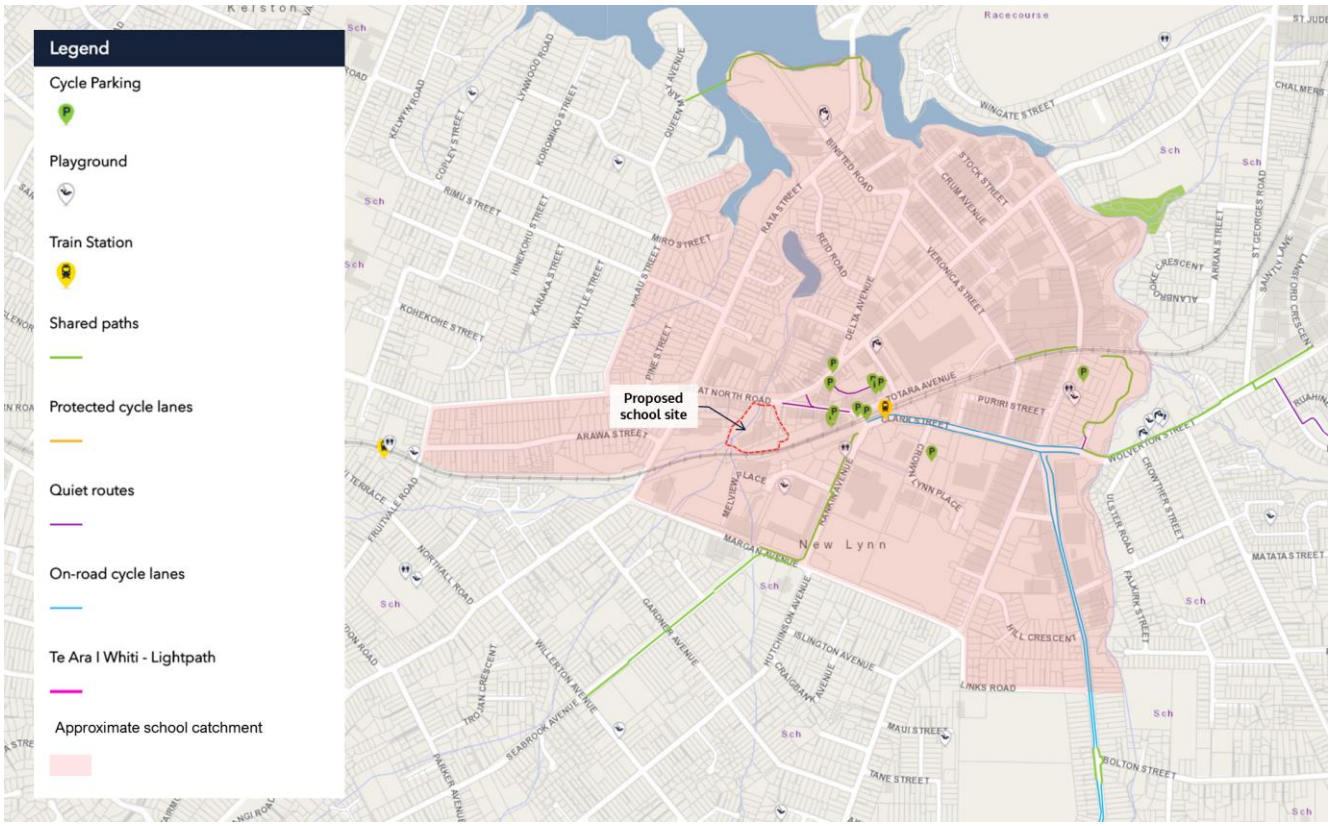

Figure 2-8 Existing cycling facilities surrounding the proposed school site and the proposed school catchment[27]

[27] Auckland Transport, 2019. *Auckland Cycleways Map.* Site accessed https://maps.at.govt.nz/arcgis/apps/webappviewer/index.html?id=88a582e934f6473dba32cb3ab909890a

Figure 2-9 Cambridge Lane, facing the site (photo taken at 11:30 am on 31-10-2019)

Figure 2-10 Cambridge Lane / Clark Street intersection pedestrian crossing (looking toward Great North Road) (photo taken at 11:30 am on 31-10-2019)

Figure 2-11 Pedestrian access to the site from Clark Street (photo taken at 11:30 am on 31-10-2019)

Figure 2-12 Footpaths on the Clark Street overbridge and link to Rankin Avenue (photo taken at 11:30 am on 31-10-2019)

2.4 Public transport

The site is located only 400m to the west of the New Lynn public transport interchange which is equivalent to a 5-minute walking distance. The New Lynn interchange is very well served by heavy rail services which operate at a 10-minute frequency during peak periods and a large number of frequent and connecting bus services which allows for connections to the wider Auckland public transport network (refer to Figure 2-13).

It should be noted that all users of public transport are pedestrians at the beginning and end of their journeys. Safe and connected walking and cycling facilities are required to support the viability of public transport as a viable transport mode and connect the site to the New Lynn public transport interchange and nearby bus routes.

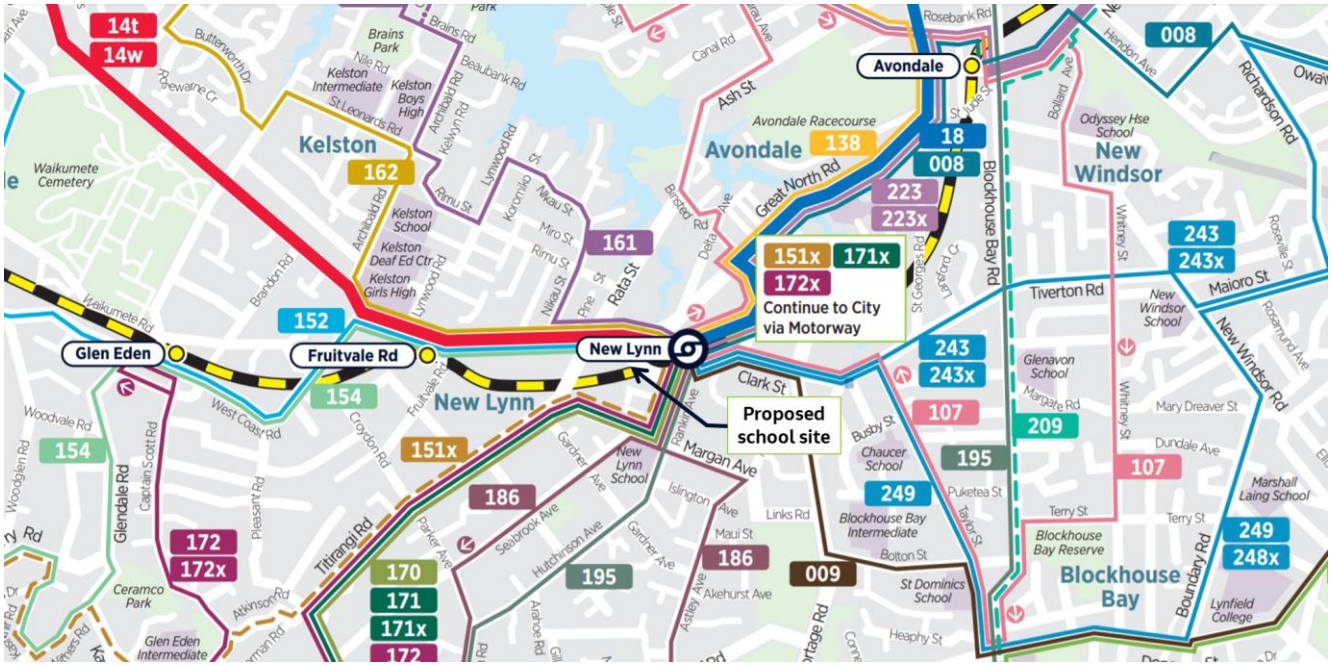

Figure 2-13 Existing public transport network routes within the wider study area[28]

2.5 Safety and crash history

Crash data was extracted from the Crash Analysis System (CAS) database[29] for the last five years between 2015 and 2019 (including early 2020), for the road frontage to the school extending from the Clark Street / Great North Road intersection to the Clark Street / Rankin Road intersection. The site details crash report is attached in Appendix C.

A total of 22 crashes have occurred during this period, including two minor-injury crashes and 20 non-injury crashes as shown in Figure 2-14. Of the total crashes, 12 were classified as rear end / obstruction type crashes and the main crash factors included poor observation, poor judgement, incorrect lane or positioning and alcohol (see the crash diagram illustrated in Figure 2-15).

The large majority of crashes (20) occurred at or on the approach to an intersection and two of the crashes occurred on mid-block road sections (defined as being ≥50m from an intersection). No reported crashes involved vulnerable road users which includes pedestrians, cyclists and motorcyclists. The minor injury-crash which occurred at the main vehicle access to the site (Cambridge Lane / Clark Street intersection) was caused by a medical event and the crash report concluded that it was not as a result of the transport environment.

In general, the nature, location and number of reported crashes does not indicate any particular safety concerns with the road network surrounding the site under the existing context.

[28] Auckland Transport, 2017. *West Auckland New Network Implementation Map.*
[29] NZ Transport Agency, 2014-2018. *Crash Analysis System.* Site accessed from https://cas.nzta.govt.nz/.

Figure 2-14 Reported crashes occurring between 2015 – 2019 (including early 2020)[30]

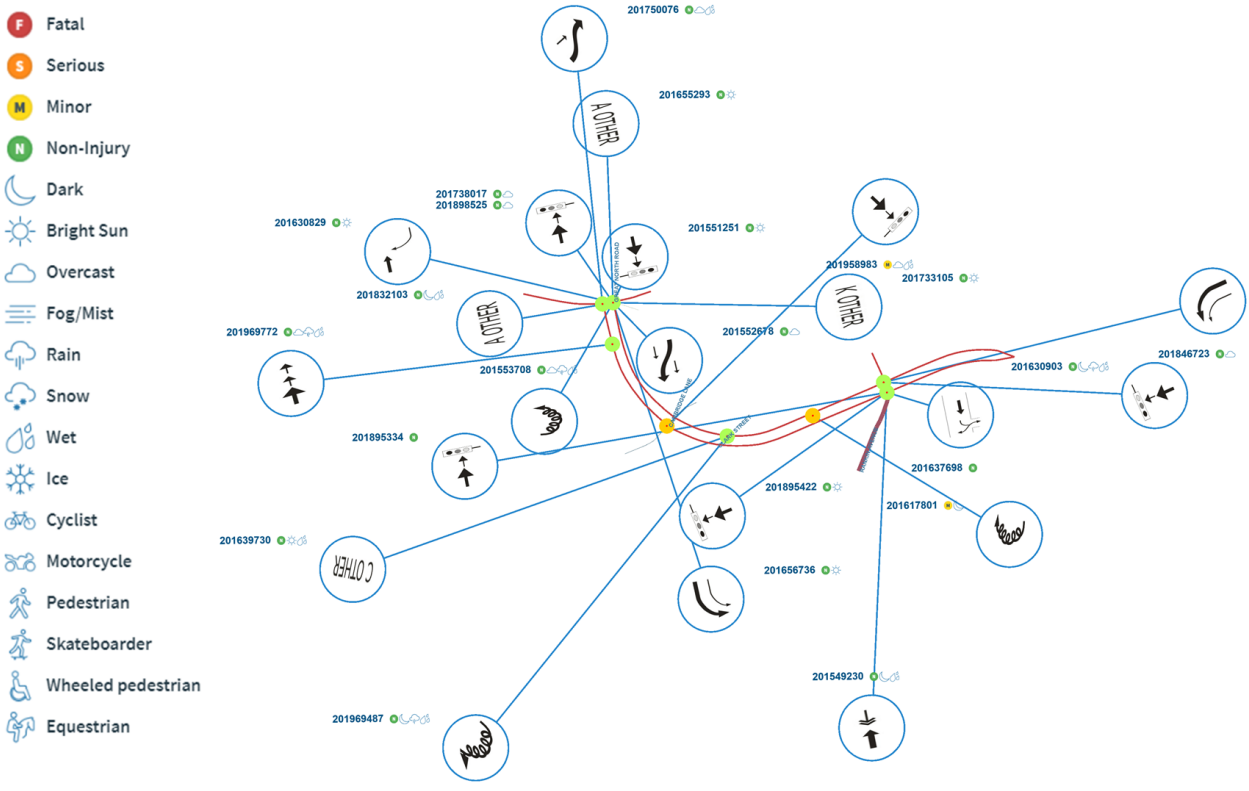

Figure 2-15 Crash diagram for reported crashes occurring between 2015 and 2019 (including early 2020)[31]

[30] NZ Transport Agency, 2014-2019. *Crash Analysis System.* Site accessed from https://cas.nzta.govt.nz/.
[31] NZ Transport Agency, 2014-2019. *Crash Analysis System – Crash diagram.* Site accessed from https://cas.nzta.govt.nz/.

3. Future Transport Environment

The following sections outline the future conditions and transport environment for the area surrounding the site, highlighting the expected timeframes for the implementation of transport projects.

3.1 Road environment

Great North Road has been identified as a priority corridor as part of Auckland Transport's Connected Communities programme which will deliver bus, cycling and safety improvements along the length of the corridor. A Business Case is currently being developed for the project, but the construction timeframes are yet to be confirmed. It is likely that the project will involve road safety improvements through the New Lynn Metropolitan Centre.

The I607 New Lynn Precinct Plan[32] proposes a number of new roads and shared lanes throughout the precinct as shown in Figure 3-1. It is not considered that these proposed roads will have a direct impact on the proposed school. It is likely that they will include new footpaths on either side of the road which will provide a good pedestrian connection between the school and the residential development areas under construction.

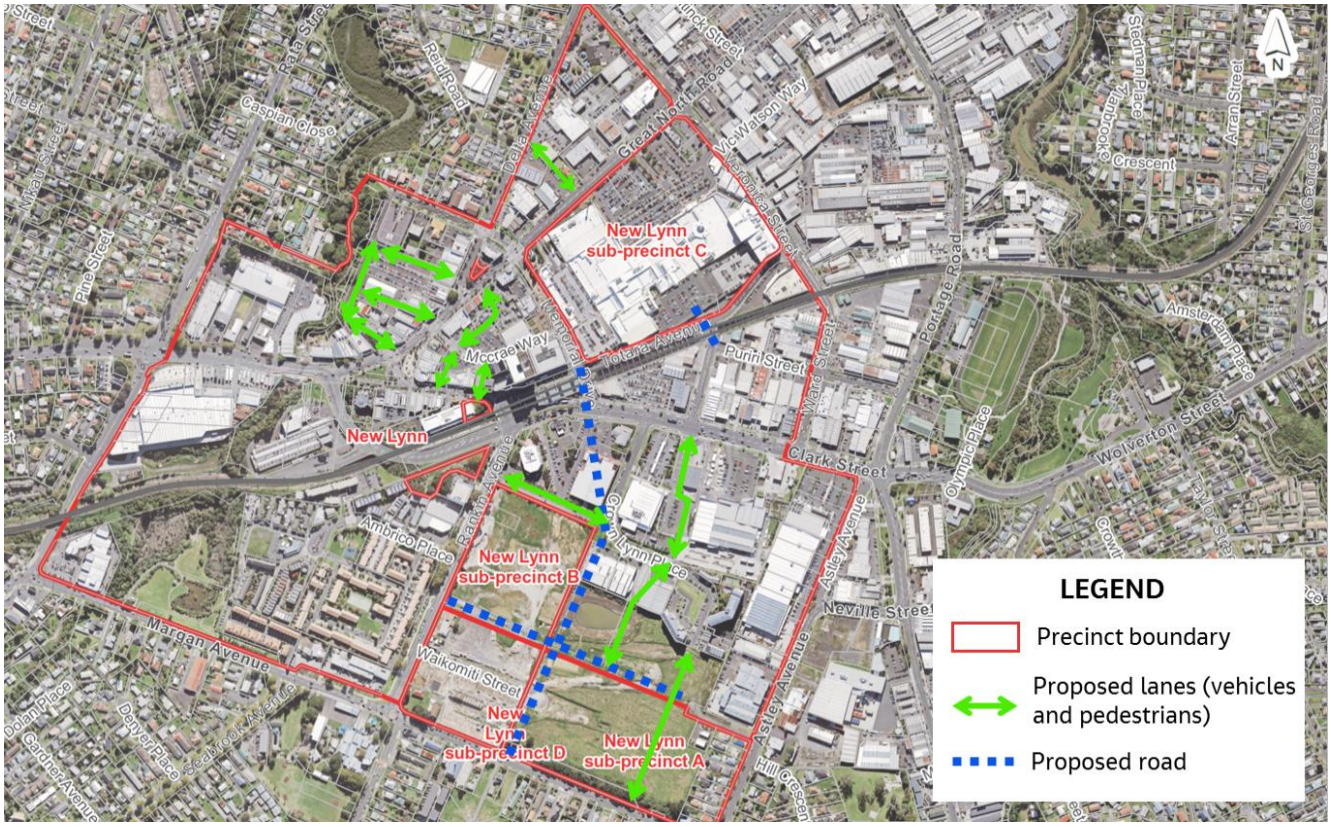

Figure 3-1 Roads and lanes proposed by the I607 New Lynn Precinct Plan[33]

3.2 Walking and cycling

The I607 New Lynn Precinct Plan[34] also proposes a number of new connections (as shown in Figure 3-2), which will improve the accessibility of the site by active modes from residential development areas and the town centre. The Connected Communities programme will also investigate the provision of safe pedestrian and cycling facilities on Great North Road; however, the timeframe and form of these facilities is unknown.

[32] Auckland Council, 22 July 2016. *I607 New Lynn Precinct Plan - Auckland Unitary Plan Independent Hearings Panel Recommendation Version.*
[33] Auckland Council, 22 July 2016. *I607 New Lynn Precinct Plan - Auckland Unitary Plan Independent Hearings Panel Recommendation Version.*
[34] Auckland Council, 22 July 2016. *I607 New Lynn Precinct Plan - Auckland Unitary Plan Independent Hearings Panel Recommendation Version.*

The Auckland Cycle Network proposes a number of new cycle routes including safe separated facilities and shared paths which would provide an improved connection to the school site as shown in Figure 3-3. One of the key routes within the vicinity of the site is the 2.9km New Lynn to Avondale Shared Path which is currently under construction. The Shared Path runs alongside the Western Rail Line, extending from New Lynn station to Avondale Station and provides a link to the nearby proposed Whau Pathway.

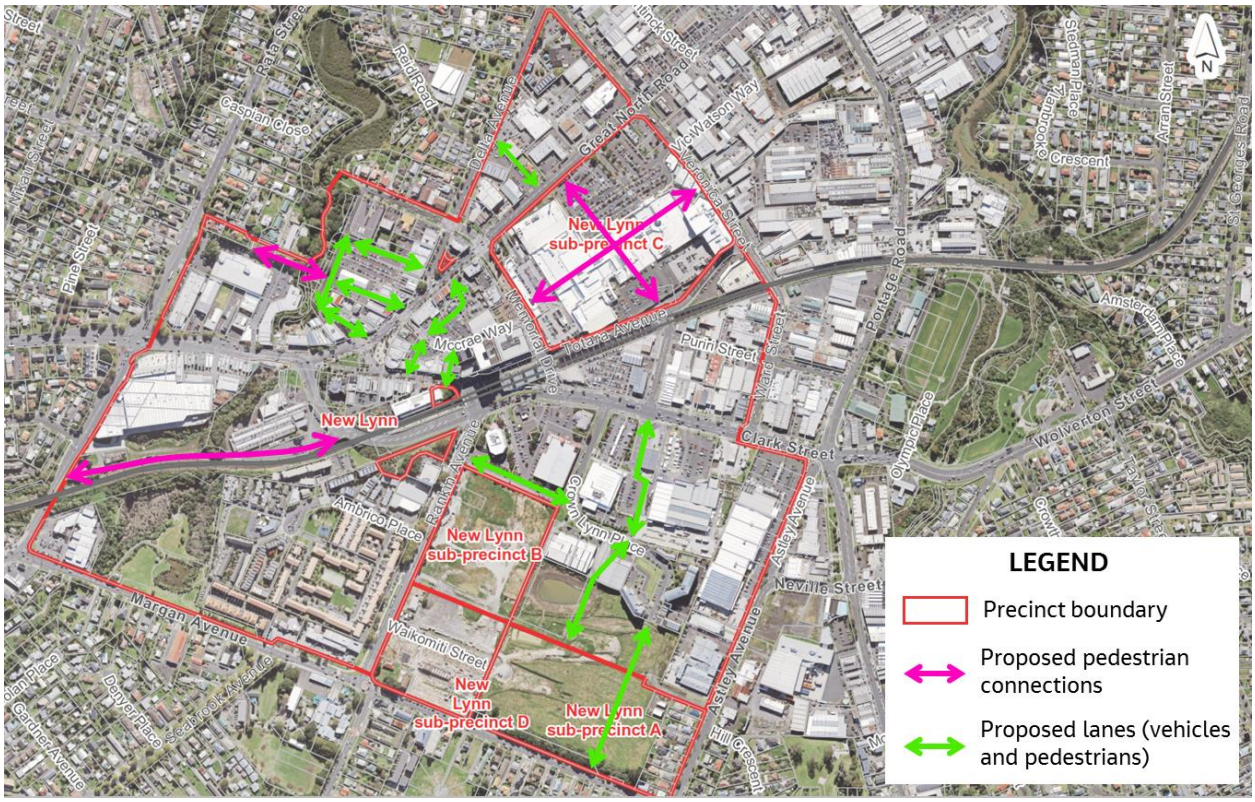

Figure 3-2 Pedestrian connections and vehicle / pedestrian lanes proposed by the I607 New Lynn Precinct Plan[35]

[35] Auckland Council, 22 July 2016. *I607 New Lynn Precinct Plan - Auckland Unitary Plan Independent Hearings Panel Recommendation Version.*

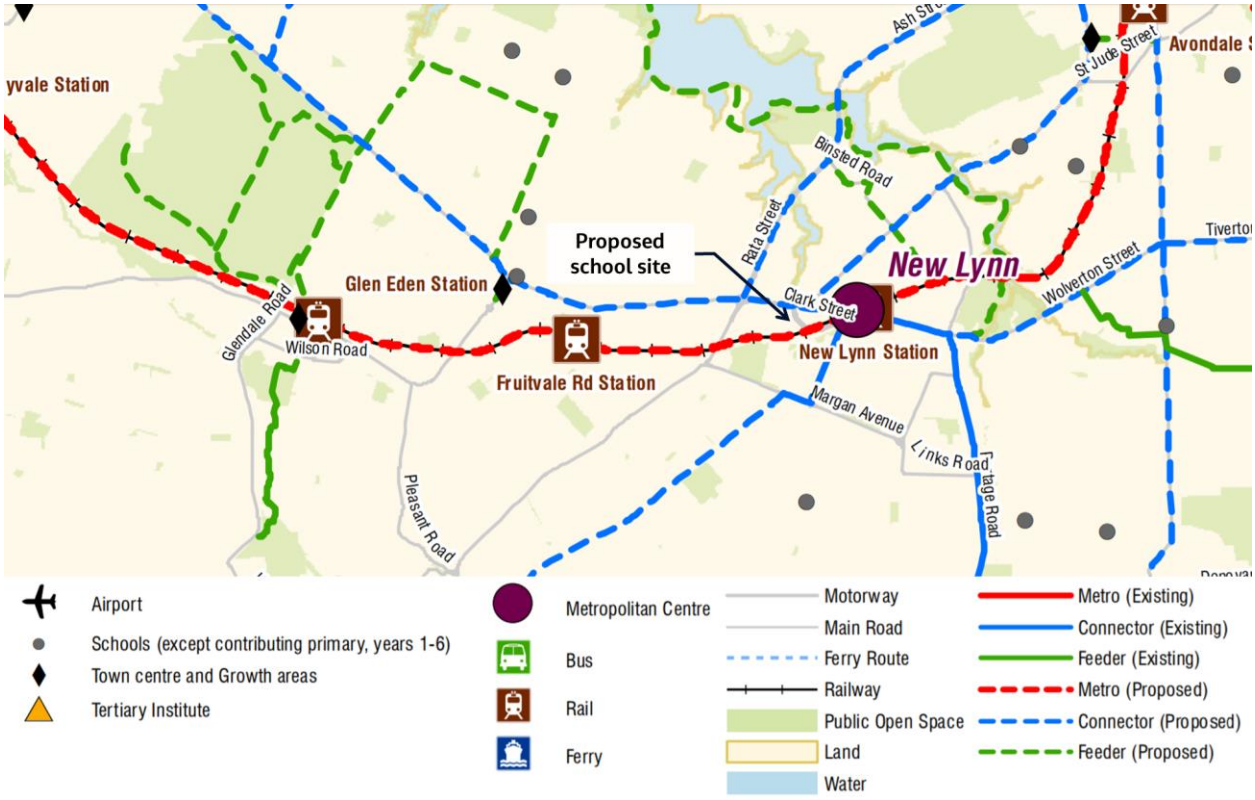

Figure 3-3 Auckland Transport's Auckland Cycle Network – existing and proposed facilities[36]

3.3 Public transport

As discussed in section 2.4, the site is highly accessible by public transport due to the proximity of the site to the New Lynn transport hub which provides numerous connections and transfer opportunities to the wider Auckland public transport network. Based on the Auckland Regional Public Transport Plan 2018-2028, Great North Road will continue to provide a number of frequent bus service routes. The Connected Communities project is investigating bus priority measures along Great North Road; however, the timeframe for these improvements is uncertain. The improved reliability and frequency of bus services will only further improve the ease of accessing the site by public transport in the future.

[36] Auckland Transport, November 2015. *Auckland Cycle Network – Existing and Proposed (existing as completed at November 2015).* Site accessed from https://www.bikeauckland.org.nz/wp-content/uploads/2015/11/2015-11-Auckland-Cycle-Network-A1-combined.pdf. **Note**: the Auckland Cycle Network is expected to be replaced later this year with an updated strategic cycle network.

4. Proposed Development

4.1 School size and layout

The proposed primary school is to be designed to accommodate an ultimate masterplan roll of 800 primary school students between years 1 – 6. The number of staff members has not been confirmed but based on a conservative teacher to student ratio of 1:15[37], it is estimated that 54 full time equivalent (FTE) staff members will be required which includes an allowance for support staff. An ECE centre will also be provided which will accommodate 50 children and an estimated eight staff members required at any one time (based on minimum adult-to-child ratios[38,39]).

A feasibility study[40] was undertaken by ASC Architects to develop the proposed form and layout of the primary school and ECE centre, as shown in Figure 4-1. The study shows a three-storey 'metro-style' school with two main buildings (one for the ECE and one for the primary school), playing fields, hardcourts and outdoor learning spaces. Metro-schools are typically a more compact design than standard school models and are suited to inner-city locations with high intensification. Where sites are particularly constrained, metro-schools are able to share recreational facilities with local communities.

Pedestrians and cyclists can access the school and ECE via a new link from Great North Road, and improved link to Clark Street and via existing footpaths on Cambridge Lane. The proposed design accommodates the future pedestrian connection proposed by the I607 New Lynn Precinct Plan which runs along the northern side of the Western Rail Line from Titirangi Road to connect to Cambridge Lane (see Appendix A). Bicycle parking is also proposed, and it is recommended that three spaces should be provided for the ECE (two short-stay and one long-stay spaces), and 39 spaces should be provided for the primary school (including four short-stay and 35 long-stay spaces).

Cambridge Lane is proposed to provide the main vehicle access to the site, as it does currently. A carpark for students / caregivers and staff is proposed, which provides the following:

- ECE parking:
  - Nine standard parking spaces; and
  - One accessible parking space (in addition to standard parking spaces).
- Primary school parking:
  - 35 standard parking spaces; and
  - Three accessible parking spaces (in addition to standard parking spaces); and
  - Five pick-up / drop-off spaces.

Refer to Appendix D for further details on how the numbers of parking spaces were developed for the purposes of guiding the Feasibility Study.

The assessment of the proposed development is discussed in section 5.

[37] Ministry of Education. *Primary curriculum staffing for Years 1 – 8.* Site accessed at https://www.education.govt.nz/school/funding-and-financials/resourcing/school-staffing/entitlement-staffing/curriculum-staffing/#Primary

[38] New Zealand Government, 2008. *Education (Early Childhood Services) Regulations 2008: Schedule 3 – Service-size (maximum).* Site accessed at: http://www.legislation.govt.nz/regulation/public/2008/0204/latest/DLM1412642.html#DLM1412642

[39] New Zealand Government, 2008. *Education (Early Childhood Services) Regulations 2008: Schedule 2 – Adult-to-child ratios (minimum).* Site accessed at: http://www.legislation.govt.nz/regulation/public/2008/0204/latest/DLM1412637.html#DLM1412637

[40] ASC Architects, 19 February 2020. *3094 Great North Road New Lynn Primary School Feasibility Study.*

Figure 4-1 New Lynn Primary School and ECE feasibility study – proposed layout[41]

4.2 Predicted mode share and trip generation

Based on 2013 Census data for the Whau Local Board Area, approximately 8% of the population working within the 'education and training' ANZSIC06 industry division used public transport as their main means of travel to work and 70% drove to work (refer to Table 4-1). Based on NZTA travel to school mode share / Census 2013 Travel to Work and MOE Household Travel Survey data, 54% of primary school-aged children were driven to school and 42% walked or cycled.

The desired future mode share outcomes for the school seek to have high pedestrian and cycle/scooter mode share. Given the location of the school site, it is considered reasonable to assume that a higher public transport mode share for staff members and a higher active mode share for students and staff could be achieved. It is considered likely that that the mode share of vehicles could indeed be lower than used in this assessment; however, the mode share figures summarised in Table 4-1 have been assumed as a conservative estimate.

Table 4-1 Mode share for main means of travel to school for students and staff members[42,43]

	Main means of travel (% mode share)				
	Vehicle – driver	**Vehicle – passenger**	**Public transport**	**Walk/cycle**	**Other**
Primary school students	-	54%	3%	42%	1%

[41] ASC Architects, 19 February 2020. *3094 Great North Road – New Lynn Primary School Feasibility Study.*
[42] Ministry of Transport, 2014. *New Zealand Household Travel Survey: HD013 - Mode share of journeys to school by region, aged 5-12 - 2010/14 (%).*
[43] Statistics New Zealand, 2013. *Main means of travel to work by industry (ANZSIC06 division), for the employed census usually resident population count aged 15 years and over, 2013 Census.*

	Main means of travel (% mode share)				
	Vehicle – driver	Vehicle – passenger	Public transport	Walk/cycle	Other
Education industry employees within the Whau Local Board area	70%	4%	8%	6%	12%[44]

It is assumed that each vehicle that drives children to the primary school and ECE has an average student occupancy of 1.2 for the AM peak and 1.4 for the PM peak[45]. It is also noted that some of these trips may be linked with the primary school, so the number of trips could be slightly less. Based on these assumptions, the numbers of vehicle trips generated by the school and ECE during the AM and PM peaks are summarised in Table 4-2 and Table 4-3 respectively.

Table 4-2 Estimated trip generation for the masterplan primary school and ECE scenario – AM peak

Trip generation	Primary school students	ECE children	School & ECE staff
Number of students / children / staff	800	50	64
Estimated private vehicle %	54%	85%	74%
Car occupancy factor (AM peak)	1.2	1.2	1.0
AM peak trips in (in only, 50/50 split)	360	35	N/A
AM peak trips out (out only, 50/50 split)	360	35	N/A
AM peak trips in and out (in and out total, 50/50 split)	720	70	N/A
AM peak trips in (100% in only)	N/A	N/A	47

Table 4-3 Estimated trip generation for the masterplan primary school and ECE scenario – PM peak

Trip generation	Primary school students	ECE children	School & ECE staff
Number of students / children / staff	800	50	64
Estimated private vehicle %	54%	85%	74%
Car occupancy factor (AM peak)	1.4	1.4	1.0
PM peak trips in (in only, 50/50 split)	309	30	N/A
PM peak trips out (out only, 50/50 split)	309	30	N/A
PM peak trips in and out (in and out total, 50/50 split)	617	60	N/A
PM peak trips out (100% out only)	N/A	N/A	47

4.3 Predicted trip distribution

It has been assumed that the AM peak school traffic volumes would be generated between 8:00 – 9:00am which coincides with peak traffic volumes across the wider network. The afternoon school peak traffic would be generated earlier than the wider network peak period at approximately 2:30 – 3:30pm (compared to 5:00 – 6:00pm for the wider network).

The residential population within the assumed school catchment was analysed at a mesh-block level (based on 2013 Census data[46] and as shown in Figure 4-2) to understand the existing distribution of the population. This information was used to estimate the distribution of vehicle trips generated by the school across the surrounding road network. The residential population is low in the north-east portion of the school catchment, which

[44] 'Other' includes 'worked from home', 'did not work today' and 'motor cycle or power-bike' travel modes.
[45] NZTA travel to school mode share/ Census 2013 Travel to Work and MOE Household Travel Survey.
[46] Stats NZ, 2013. *2013 Census map – population and dwelling map.* Site accessed from http://archive.stats.govt.nz/StatsMaps/Home/People%20and%20households/2013-census-population-dwelling-map.aspx

corresponds to the existing industrial land uses; and the residential population is highest toward the western and north-western portions of the catchment.

The peak AM and PM trips to and from the school were proportioned and distributed across the network based on this population distribution. It was assumed that residents would take the most direct and fastest route to the school/ECE and this was factored into the distribution assumptions. The assumed trip distribution and traffic volumes generated by the school during the AM and PM peak hours are shown in Figure 4-3 to Figure 4-10. The peak hour school and ECE traffic was added to the existing peak AM and PM network traffic volumes and modelled to assess the potential traffic impact of the development (refer to section 5.2).

It is noted that these residential population distribution assumptions do not consider the future nearby development which is expected to deliver 2,000 new homes. However, due to the proximity of this development site to the school / ECE and unconfirmed timeframes, it has been assumed that the large majority of this population would walk to school and that vehicle-based trips would be generated by residents living on the outskirts of the school / ECE catchment.

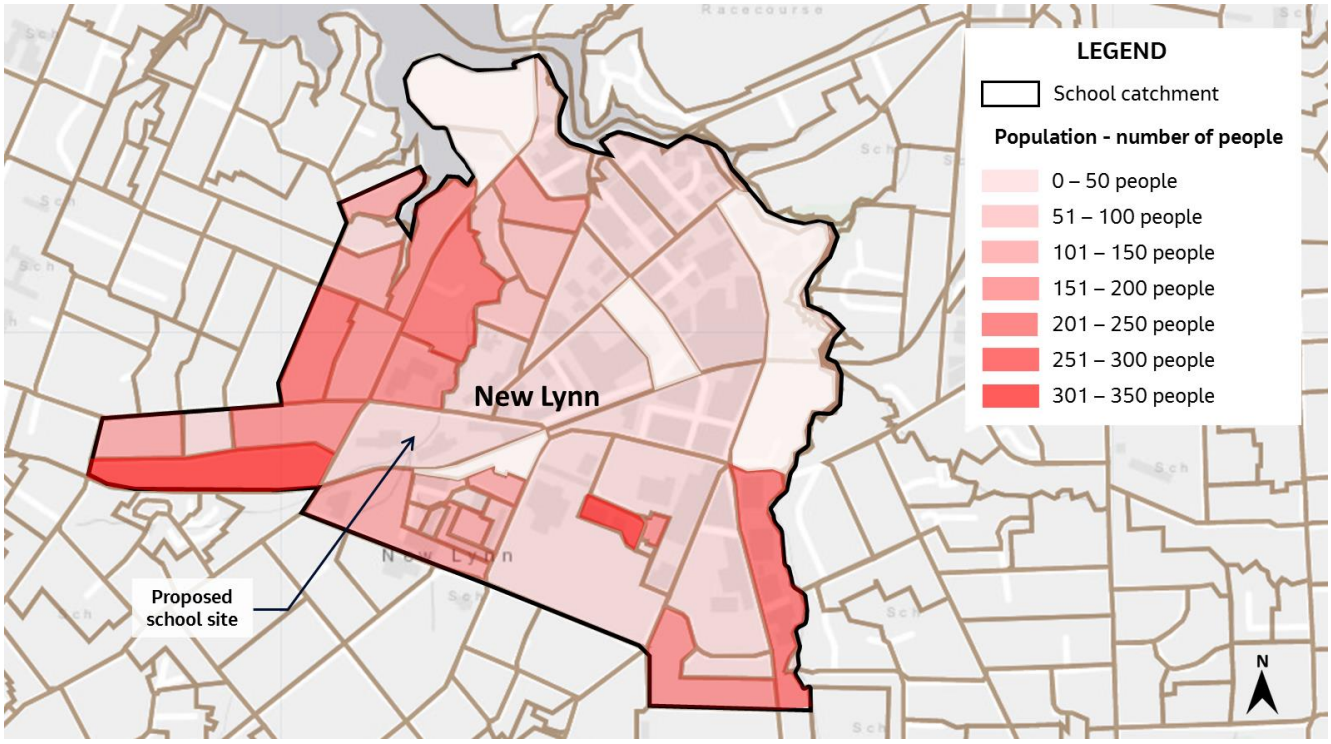

Figure 4-2 Population distribution within the proposed school and ECE catchment[47]

[47] Stats NZ, 2013. *2013 Census map – population and dwelling map.* Site accessed from http://archive.stats.govt.nz/StatsMaps/Home/People%20and%20households/2013-census-population-dwelling-map.aspx

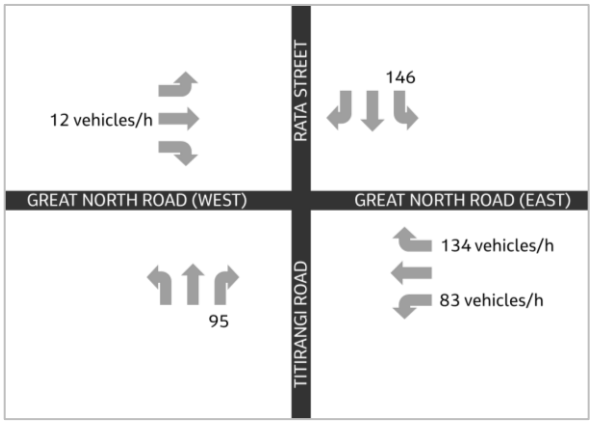

Figure 4-3 Great North Road / Rata Street / Titirangi Road intersection trips distribution – AM peak (8:00 – 9:00am)

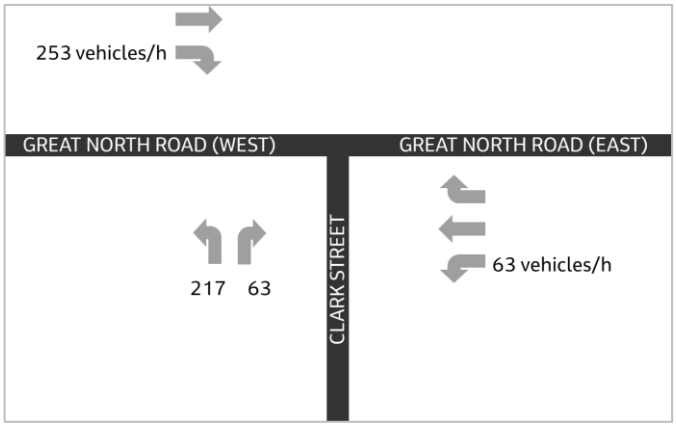

Figure 4-4 Great North Road / Clark Street intersection – AM peak (8:00 – 9:00am)

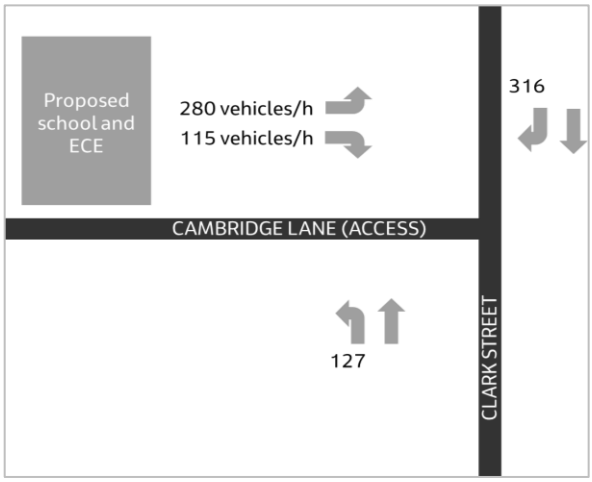

Figure 4-5 Clark Street / Cambridge Lane access intersection trip distribution – AM peak (8:00 – 9:00am)

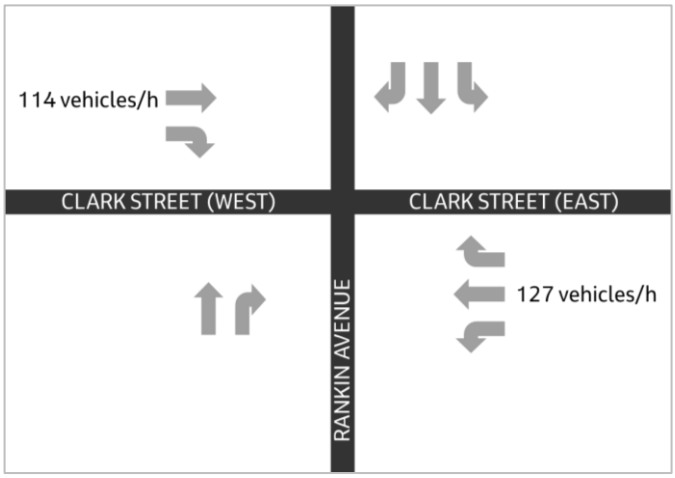

Figure 4-6 Clark Street / Totara Avenue / Rankin Avenue – AM peak (8:00 – 9:00am)

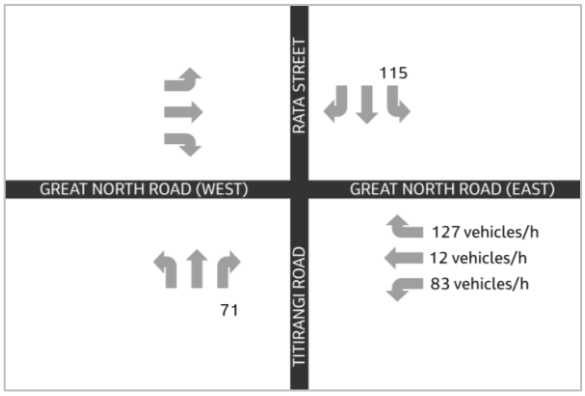

Figure 4-7 Great North Road / Rata Street / Titirangi Road intersection trips distribution – PM peak (2:30 – 3:30pm)

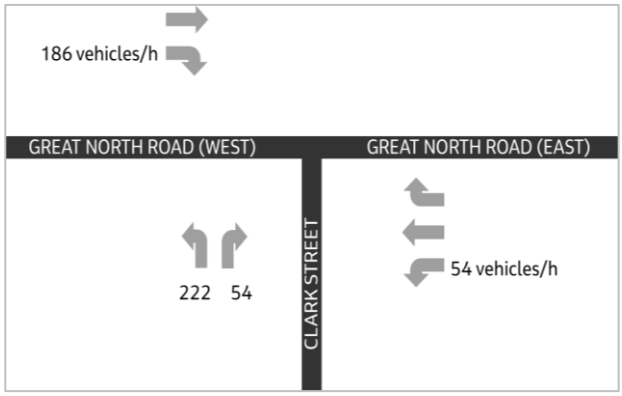

Figure 4-8 Great North Road / Clark Street intersection – PM peak (2:30 – 3:30pm)

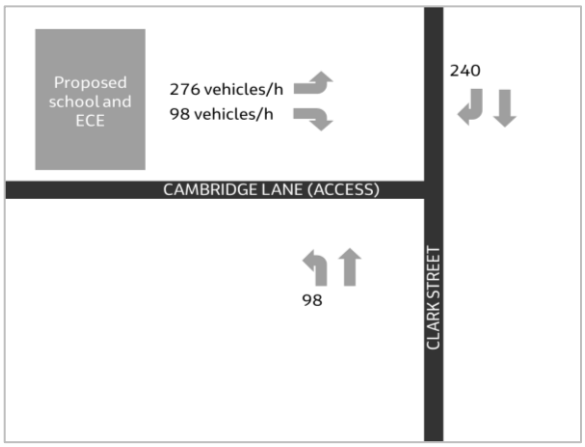

Figure 4-9 Clark Street / Cambridge Lane access intersection trip distribution – PM peak (2:30 – 3:30pm)

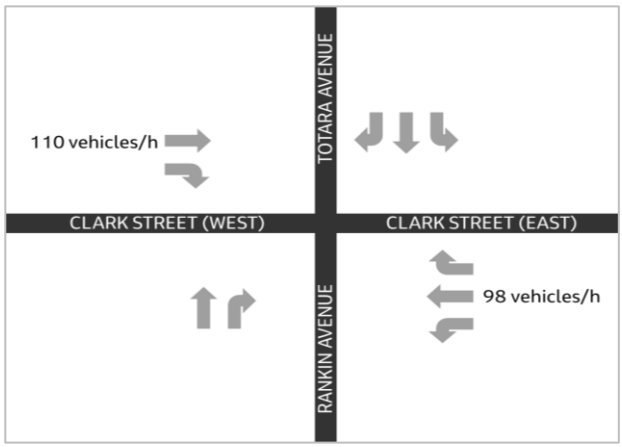

Figure 4-10 Clark Street / Totara Avenue / Rankin Avenue – PM peak (2:30 – 3:30pm)

5. Assessment of Transport Effects

5.1 Vehicle access effects

Vehicles currently access the site and existing land uses via Cambridge Lane and the signalised intersection with Clark Street. It is recommended that this signalised access is retained as the only vehicular access point to a future school and ECE and that no additional vehicle accesses are provided. It is considered that the existing road classifications for Cambridge Lane and Clark Street are still appropriate if the site was to be redeveloped.

It is not anticipated that the use of Cambridge Lane will have adverse effects on the safe operation of Clark Street and the local road network relative to its existing use. The impacts of the proposed access and trip generation on the performance of the intersection is summarised in section 5.2.

It is noted that other vehicles including buses (for school trips), service vehicles, rubbish trucks and emergency vehicles will also require access to the site. It is assumed that the access and intersection design can currently accommodate emergency vehicles, rubbish trucks and vehicle transporters/tow-trucks (based on the existing businesses); however, the ability for a standard bus to turn into Cambridge Lane will be confirmed during the following design phase.

5.2 Traffic generation effects

A new school in this location will generate additional traffic, pedestrians and cyclists, during the school peak hours within the surrounding road network (compared to the existing uses within the site). All students within the catchment zone for the school and ECE will live within approximately 1.5km of the site and as such, walking to school is likely to be feasible for a large proportion of students. This has the potential to reduce school-related vehicular trips, traffic impacts and visitor parking requirements.

5.2.1 Operational traffic intersection modelling

Intersection modelling was undertaken using SIDRA INTERSECTION (Version 8) for the following intersections within the wider study area:

- Cambridge Road / Clark Street intersection (see section 5.2.1.1);
- Great North Road / Rata Street / Titirangi Road intersection (see section 5.2.1.2);
- Great North Road / Clark Street intersection (see section 5.2.1.3); and
- Clark Street / Rankin Avenue / Totara Avenue intersection (see section 5.2.1.4).

Two traffic scenarios have been modelled including the 'existing base traffic' scenario and a future-year scenario at a time when the full school and ECE masterplan roll is achieved. The future 'masterplan scenario' was modelled as it is the most conservative; representing the highest possible number of trips generated by the school and ECE. The trip generation and distribution assumptions outlined in sections 4.2 and 4.3 were incorporated into the future masterplan scenario.

One of the key assumptions made for the modelling (and agreed with the Auckland Forecasting Centre), was that there is 0% background traffic growth per annum between the modelled base year and the future masterplan scenario year. This was agreed to better understand the impacts of the traffic generated by the school in isolation. This assumption also aligns with modelling findings from the strategic transport model (MSM) which estimate a decline in vehicle traffic of -0.5% per annum between 2016 – 2028.

The key modelling findings are summarised in the following sections and the main performance parameters include 95th percentile queue lengths, average delay and LOS. More detail on the model development and modelling results is provided in the ITA SIDRA Modelling Memorandum attached in Appendix E.

5.2.1.1 Cambridge Road / Clark Street intersection (site access)

In the future AM and PM peak models, the Clark Street / Cambridge Lane intersection is operating at a LOS D, compared to LOS A for both AM and PM peaks in the base traffic model. There is also a significant increase in the average vehicle delay and 95th percentile queue length at the intersection. It should be noted that notable queues exceeding 100m develop at the intersection which could impact on the performance and operation of nearby intersections and circulation within the proposed site.

To mitigate the potential impacts of the additional traffic generated by the school at the entrance, it is recommended that the length of the right-turn pocket on the Clark Street north approach is extended.

The phasings for the base model have been optimised for the future modelling scenarios but cycle durations have been maintained to enable a comparison between the two scenarios. An opportunity to optimise the signals at the access intersection was identified. Initial sensitivity testing indicated that further signal optimisation (including reducing the cycle length) has the potential to reduce queue lengths at intersection approaches by up to approximately 30%. The modelled overall LOS for the intersection would also improve from LOS D to C for the masterplan scenario in both the AM and PM peak periods. This improves intersection operations and reduces the likely impact on adjacent intersections without the need for construction or physical modifications to the existing intersection arrangement.

5.2.1.2 Great North Road / Rata Street / Titirangi Road intersection

Based on the modelling results, it is considered that there is no considerable increase to the 95th percentile queue length and decrease in LOS for the Great North Road / Rata Street / Titirangi Road intersection as a result of the additional traffic generated by the school.

5.2.1.3 Great North Road / Clark Street intersection

It is considered that there is no significant increase to the 95th percentile queue length and decrease in LOS for the Great North Road / Clark Street intersection.

5.2.1.4 Clark Street / Rankin Avenue / Totara Avenue intersection

Based on the modelling results, it is considered that there is no considerable increase to the 95th percentile queue length and decrease in LOS for the Clark Street / Rankin Avenue / Totara Avenue intersection as a result of the additional traffic generated by the school.

5.2.1.5 Traffic modelling summary

In summary, the trips generated by the school and ECE has resulted in additional traffic and contributed to increases in queue lengths, delays and LOS for the surrounding intersections. The traffic impacts on the Great North Road / Rata Street / Titirangi Road, Great North Road / Clark Street and the Clark Street / Rankin Avenue / Totara Avenue intersections are considered no more than minor; however, additional traffic is expected to have a significant impact on the performance of the Clark Street/ Cambridge Lane (site accessway) intersection.

Based on initial sensitivity testing, signal optimisation (including cycle time reduction), indicates that intersection performance can be improved to better cope with increased traffic volumes from the school development. In the future AM and PM peak sensitivity testing models, the Clark Street / Cambridge Lane intersection is operating at a LOS C, compared to LOS D for both AM and PM peaks without mitigation.

5.2.2 Construction traffic effects

Construction-related traffic relating to the development of the school will be mitigated as Auckland Transport and the NZ Transport Agency require a Construction Traffic Management Plan (CTMP) to be implemented. Accordingly, all contractor/construction traffic movements to and from the site would need to adhere to the performance and/or control standards that would be prescribed in this binding document.

This CTMP should also cover maintaining safe access for pedestrians and cycle movements during the construction phase.

5.3 Walking and cycling effects

The school site is well located within the proposed residential catchment (considering the existing residential catchment and future development areas) to encourage walking and cycling for children of appropriate age groups. No part of the catchment is expected to be more than a 1.5km walking distance from the school which is approximately a 20-minute walk. Much of the proposed catchment will be in mid to high-density blocks located even closer to the school and as housing intensification continues in the New Lynn area (particularly with a large area zoned for 'Terrace Housing and Apartment Buildings' development just south of the site), it is anticipated that further pedestrian and cycle trips will occur from this area.

Figure 5-1 shows potential walking routes to the school and potential issues along the route. The signalisation of the main access (Cambridge Lane / Clark Street intersection) has provided safe pedestrian crossing facilities to and from Clark Street. However, it was observed during the site visit that the footpath widths are narrow (approximately 1.2 – 1.5m) at the pedestrian crossing points to accommodate signal poles (see Figure 5-2). This is considerably less than the widths recommended by Auckland Transport's Transport Design Manual adjacent to schools (4.5m). Two additional pedestrian/cyclist links to the school are provided from Great North Road and from Clark Street (refer to Figure 4-1), to reduce the numbers of students crossing at the Cambridge Lane / Clark Street intersection and further mitigation measures are discussed in section 5.5. It is recommended that the traffic signals and pedestrian phases are monitored to allow sufficient time for children to safely cross the intersection.

Cycling is a viable mode of transport for staff members. On-street cycling facilities are provided along sections of Margan Avenue, Rankin Avenue, Wolverton Street and Clark Street (see Figure 5-3). However, no dedicated facilities are provided along the Clark Street overbridge extension to the site access. The high Clark Street traffic volumes and nature of the road make this unsuitable for primary school-aged children to safely cycle to school via this route.

The planned New Lynn to Avondale shared path will also provide a safe walking and cycling connection through the town centre. The shared path ends at the New Lynn Station (approximately 400m from the school), and from there, students and staff could access the school via Totara Avenue, the signalised Great North Road / Clark Street intersection and the proposed pedestrian / cyclist link from Great North Road (as shown in Figure 4-1). Totara Avenue is a low-speed Shared Zone and generous footpaths are provided which primary school-aged students are permitted to use for cycling.

In summary, it is considered that the school is well placed to achieve high numbers of students walking (i.e. walking school buses) and staff members cycling as a viable travel mode to school.

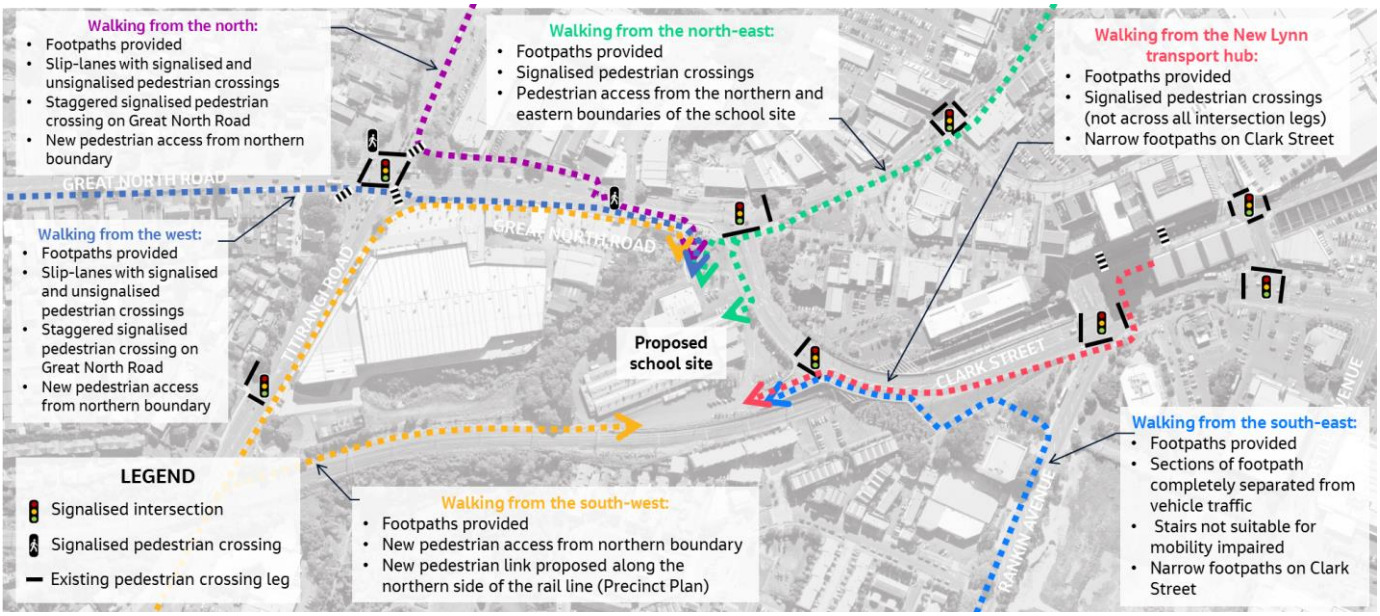

Figure 5-1 Existing and proposed walking and cycling facilities, highlighting potential safety issues

Figure 5-2 Localised narrowing of Cambridge Lane and Clark Street footpaths at the intersection to the site access (photo taken at 11:30 am on 31-10-2019)

Figure 5-3 Existing cycling infrastructure to the east of the site on Clark Street (toucan pedestrian-cyclist crossing) (photo taken at 11:30 am on 31-10-2019)

Figure 5-4 Pedestrian link to Rankin Avenue (facing west toward the site) (photo taken at 11:30 am on 31-10-2019)

Figure 5-5 Existing wayfinding signage (photo taken at 11:30 am on 31-10-2019)

5.4 Public transport effects

Although the extent of primary school students using public transport may be limited due to the small catchment size, there is the potential for staff, parents and caregivers to incorporate public transport as part of their journey due to the close proximity of the New Lynn public transport interchange. The existing public transport network (and future network improvements noted in section 3.3) provides frequent and reliable access between the site and residential areas within and outside of the school catchment. This presents a considerable opportunity to reduce the number of private vehicle trips generated by the school development; particularly by school and ECE staff members.

It has been assumed that the school will not be providing a dedicated school bus route (as confirmed by the Ministry of Education); however, a bus bay is to be provided within the site to transport students on school trips. It has been assumed that these school trips will be relatively infrequent (i.e. not a daily occurrence), and that one bus bay is sufficient. When the bus bay is not in use, it is proposed that the bus bay can be used by service vehicles, including rubbish trucks.

Not providing a dedicated school bus route when the school opens is considered acceptable as the small student catchment lends itself to students travelling to school by other modes including walking and cycling.

5.5 Mitigation of transportation effects

5.5.1 Traffic speeds

Traffic speed is one of the most important issues relating to safety, particularly along Great North Road, Clark Street and within the carpark. The posted speed limits for Clark Street and the surrounding road network is 50km/h and the existing Clark Street road geometry may encourage speeding. It is recommended that a variable speed limit of 40km/h during school start and finish times is considered at the Outline Plan stage, in consultation with Auckland Transport.

Kerb build-outs at the Cambridge Road / Clark Street intersection should be considered during the detailed design phase to create the expectation of a low-speed environment. It is recommended that the speed within the carpark is further reduced to 10km/h and treatments such as raised tables or speed cushions are implemented to encourage a slow speed environment.

5.5.2 Intersection operations

Modelling results indicate that queues exceeding 100m, develop back from the Cambridge Lane / Clark Street intersection which could impact on the performance of nearby intersections and circulation within the proposed site.

To mitigate the potential impacts of the additional traffic generated by the school at the entrance, it is recommended that the length of the right-turn pocket on the Clark Street north approach is extended. It should be noted that the existing flush median is shared by vehicles turning right onto Great North Road and right into Cambridge Lane which limits the lengthening of the right-turn pocket into Cambridge Lane.

An opportunity to optimise the signals at the access intersection was identified. Modification of the traffic signal phasing (including shorter cycle times), at the intersection/s adjacent to the school should be further investigated during the Outline Plan of Works phase to allow for increased pedestrian crossing times, improved circulation within the carpark, and to reduce queue lengths and impacts on adjacent intersections.

5.5.3 Walking and cycling facilities

It is noted in section 5.3 that the existing footpaths adjacent to the school site are narrow and are not of a sufficient width to safely accommodate the expected numbers of pedestrians at school start and finish times. Footpath width is particularly important given the proximity to a strategic freight route which prioritises heavy vehicle movements along this section of the corridor.

It is recommended that widening the footpath alongside the school boundary, particularly on the western side of Clark Street, is considered during the Outline Plan of Works Stage to mitigate safety concerns and provide an adequate width for pedestrian movement. There is an existing planting easement along the Clark Road frontage to the site which is in the favour of Auckland Council (as shown in Figure 5-6). It is recommended that removing the easement is considered as a potential mitigation measure for increasing the existing footpath widths along Clark Street and at the Clark Street / Cambridge Lane intersection.

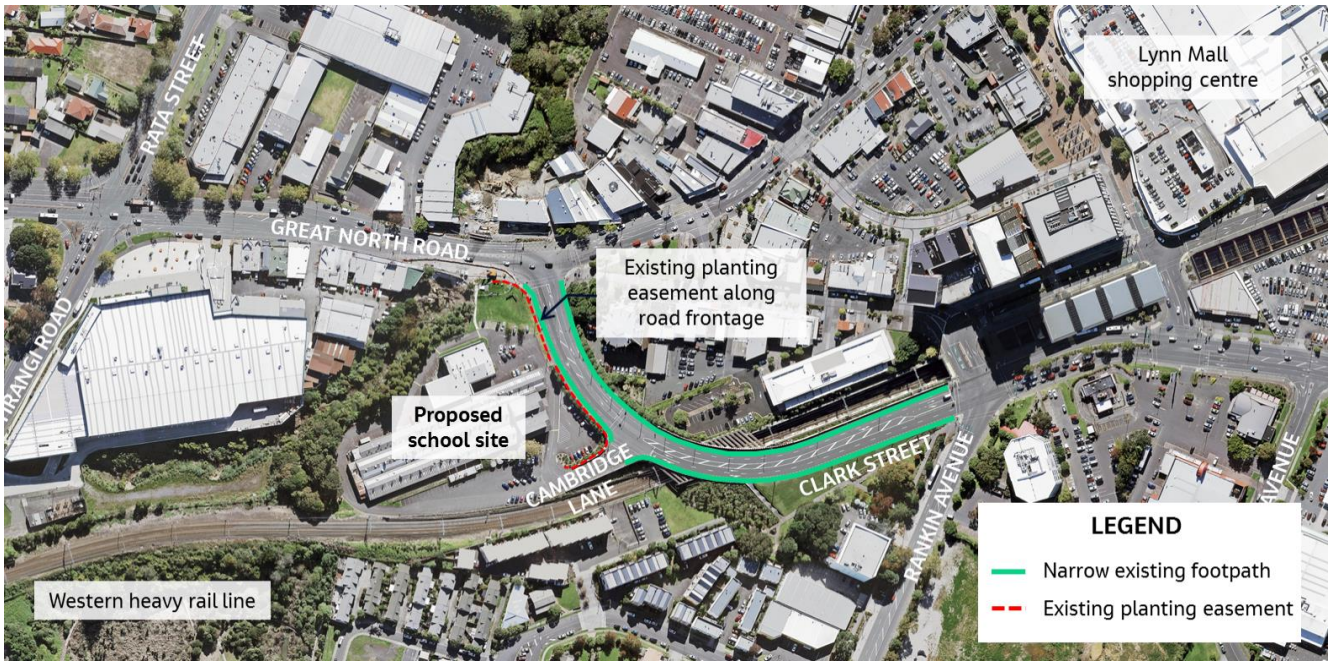

Figure 5-6 Potential options for further consideration to mitigate safety concerns associated with narrow existing footpath widths

The main vehicle access to the school is signalised and pedestrian crossings are provided across the northern and western approaches to the intersection. It is recommended that a Kea Crossing (or school intersection

patrol), is located at the main vehicle and pedestrian access to the school (in consultation with Auckland Transport), to enable the safe crossing of students, caregivers and staff. Kea Crossings can be implemented at signalised and unsignalised intersections where a fluorescent orange crossing flag sign is positioned at each crossing point of the main vehicle access. The school would be required to supervise the Kea Crossing and an adult supervisor must be present at all times.

Motorists who currently drive through the existing signalised crossing of Clark Street and Cambridge Lane may not be expecting high numbers of pedestrians compared to currently observed pedestrian volumes. Kea Crossings where patrols are operating are typically safer than a standard signalised or unsignalised intersection where no one is observing or controlling the movement of pedestrians. Pedestrians and traffic are under the control and observation of a school patrol and pedestrians are less likely to cross the road when it is unsafe to do so. This mitigation measure is in alignment with Auckland Transport's School Travelwise programme.

5.5.4 Travel demand management

Prior to the opening of the school, it is recommended that a comprehensive School Travel Plan (STP) is developed with Auckland Transport. The STP will outline an action plan for reducing the use of private vehicles for providing access to the school and will specifically address the following:

- Encouragement of active modes including walking, cycling and scooters and provision of bike / scooter parking facilities;
- Consistency with Auckland Transport's programmes such as the School Travelwise programme (including walking school buses);
- Road safety and providing safe access points to the school including Kea Crossings and measures to separate vehicle movements from pedestrians and cyclists;
- Encouragement of using public transport and carpooling; and
- Details of the required monitoring and review timeframes for the STP.

Given the location of the proposed school site and the high level of accessibility by public transport and active modes (for both students and staff members), it is reasonable to assume that a higher walking and cycling mode share could be achieved.

The STP should be reviewed periodically to ensure that it is consistent with Auckland Transport's programmes and plans and at any time a subsequent Outline Plan of Works for the school is submitted.

5.5.5 Construction Traffic Management Plan

During the construction period contracting staff, machinery and materials vehicles would access the site via Clark Street and Cambridge Lane. Due to the proximity of the site to several key local general traffic routes, the strategic freight network, and the existing traffic volumes on these routes during peak periods, it is recommended that a CTMP is prepared by the contractors, as required by the NZ Transport Agency and AT. This CTMP should also cover maintaining safe access for pedestrians and cyclists during the construction phase.

6. Consistency with Relevant Transport Plans and Strategies

6.1 AUP(OP)

The AUO(OP) sets out how Auckland will meet its housing and economic requirements by guiding development across the Auckland region.

Auckland's population growth increases the demand for housing, business, employment, infrastructure and social and community facilities / services. The proposed school and ECE respond to this issue by providing additional social facilities and supporting integrated planning, land use and infrastructure.

Educational facilities are a permitted activity in the Business - Metropolitan Centre zone. The school site is not located within a sub-precinct as defined by the New Lynn Precinct Plan, therefore it is not subject to any further controls for an educational activity. The proposed activities are anticipated in this location and it is not envisaged that the result in any reverse sensitivity effects.

The proposal will support the intensification of the New Lynn Metropolitan Centre and by delivering educational facilities (enabled in the zone and New Lynn Precinct Plan), to support population growth and intensification while providing for existing activities.

It is therefore considered that the development of a school and ECE on the proposed site is consistent with the relevant provisions of the AUP(OP).

6.2 AUP(OP) Chapter E27 – Transport

As the site is to be designated, it is not required to meet the requirements of the parking standards outlined in the AUP(OP). However, these are discussed in this section as a useful reference for assessment.

This section sets out the assessment of the proposal against Chapter E27 of the AUP(OP) and addresses the following:

- Location, number and design of parking, loading and site access;
- Provisions for public transport, walking and cycling facilities; and
- Management of the effects of high trip-generating activities.

It should be noted that the school design has been developed to a feasibility or concept design level only (refer to section 3), and this design has been used as the basis for this assessment.

6.2.1 Summary of assessment against AUP(OP) Chapter E27

The assessment of the proposal against AUP(OP) Chapter E27 is summarised in Table 6-1.

Table 6-1 Summary of proposed carpark design against AUP(OP) Chapter E27

AUP(OP) E27 assessment criterion	Compliance / non-compliance description
E27.6.1 Trip generation	Standard E27.6.1(1) does not apply as the proposal is located in a Business – Metropolitan Centre Zone as shown on the planning maps and this ITA is required to support a Notice of Requirement and designation of the site for the proposed primary school and ECE.
E27.6.2 Number of parking and loading spaces	Refer to section 6.2.3.
E26.6.2.6 Required end-of-trip facilities	Based on Table E27.6.2.6, two showers and a changing area with space for storage of clothing are required for a development greater than 2500m2 and up to 7500m2 in GFA. It is assumed that these end-of-trip facilities would be provided to comply with this requirement.

AUP(OP) E27 assessment criterion	Compliance / non-compliance description
E27.6.2.7 Minimum loading space requirements	As the gross floor area (GFA) of the proposal (4,452m2) is less than 5,000m2, no loading spaces are required as per Table E27.6.2.7.
E27.6.3.1 Size and location of parking spaces	Refer to section 6.2.3.
E27.6.3.2 Size and location of loading spaces	Refer to section 6.2.4.1.
E27.6.3.3 Access and manoeuvring	Refer to section 6.2.4.2.
E27.6.3.4 Reverse manoeuvring	The proposed carpark complies with E27.6.3.4 as the one-way traffic circulation and existing two-way access road onto the wider road network mean that vehicles are not required to reverse off site.
E27.6.3.5 Vertical Clearance	At this stage of design, it is not anticipated that a carpark structure will be provided. Therefore, the proposal fully complies with this requirement.
E27.6.3.6 Formation and gradient	The gradients of access and manoeuvring areas must not be steeper than 1:8 (12.5%) as per E27.6.4.4. The proposed access and manoeuvring areas will be designed to comply with this requirement at the next stage of design.
E27.6.3.7 Lighting	Lighting is required where there are 10 or more parking spaces which are likely to be used during the hours of darkness. The parking and manoeuvring areas and associated pedestrian routes must be adequately lit. It is assumed that lighting design will be undertaken during future stages and will be designed to comply with this requirement and AUP(OP) Chapter E24 – Lighting[48].
E27.6.4.1 Vehicle Access Restrictions	Vehicle access restrictions apply to a site boundary subject to a Vehicle Access Restriction – General Control (not applicable), Key Retail Frontage Control (relevant to the northern boundary of the site) or has frontage to an Arterial road (relevant to all roads surrounding the site). The proposal complies with these requirements as no additional vehicle crossings are proposed for any site boundaries.
E27.6.4.2 Width and number of vehicle crossings	The proposal complies with these requirements as no additional vehicle crossings are proposed for any site boundaries. The existing site access is to be maintained and vehicles access the school / ECE carpark directly from Cambridge Lane.
E27.6.4.3 Width of vehicle access and queuing requirements	The vehicle access width from Cambridge Lane is 6.0m wide for two-way access which complies with the minimum and maximum access widths. The length of the access does not exceed 50m, therefore no passing bays are required.
E27.6.4.4 Gradient of vehicle access	The maximum permitted gradient of a vehicle access serving all other activities (T159) is 1 in 6 or 16.7%. The existing curved ramp site access is to be maintained.
E27.6.4.5 Design and location of off-road pedestrian and cycle facilities	Refer to section 6.2.5.

6.2.2 Trip generation

All transport land use activities must comply with trip generation Standard E27.6.1(1), however for this site this standard does not apply due to the following:

- The proposal is located in a Business – Metropolitan Centre Zone as shown on the planning maps;
- There are requirements to assess transport, traffic and trip-generation effects for the activity as part of the Notice of Requirement; and.
- The AUP recognises that the Metropolitan Centre zone is an appropriate location for high trip generating activities.

[48] Auckland Council. *Auckland Unitary Plan Chapter E24 – Lighting.* Site accessed from https://unitaryplan.aucklandcouncil.govt.nz/Images/Auckland%20Unitary%20Plan%20Operative/Chapter%20E%20Auckland-wide/3.%20Built%20environment/E24%20Lighting.pdf

6.2.3 E27.6.2. Number of parking and loading spaces

6.2.3.1 Carparking

The New Lynn Metropolitan Centre area has been identified as an opportunity for growth and intensification and land use policies enable this type of development. The removal of minimum parking rates and implementation of maximum parking rates within this zone is appropriate given that density within this zone is encouraged, and the proximity of the zone to alternative transport options.

It should be noted that the site is to be designated, and therefore is not bound by the requirements of the parking standards and requirements in the AUP(OP). The Ministry of Education sets out standard conditions which apply to all school designations unless they are modified for a particular designation. The Ministry of Education's Standard Conditions include the following:

- **On-site carparking – 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."

- **On-site carparking – 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."

The Parking Analysis for New Lynn Primary School and Early Childhood Education Centre at 3094 Great North Road memorandum[49] attached in Appendix D sets out the requirements for the number of carparking spaces for the primary school and ECE as required by the AUP(OP) and any assumptions that have been made in the analysis.

The site is located within a Business – Metropolitan Centre Zone where no minimum parking rate applies to a primary school facility. Table 6-2 sets out the number of parking spaces that would comply with the maximum AUP(OP) parking requirements for staff and visitors based on a school roll of 800 students, estimated 35 classrooms and 54 FTE staff.

Table 6-2 AUP(OP) parking rate requirements for primary school activities[50]

Parking type	Number of staff / classrooms	Minimum rate	Maximum rate	Maximum parking requirement
Staff parking	54 FTE staff	No minimum rate	0.5 per FTE employee	27 spaces
Visitor parking	35 classrooms	No minimum rate	1 visitor space per classroom	35 spaces
Sub-total				**62 spaces**
Accessible parking	N/A	No less than three spaces[51]	N/A	3 spaces

[49] Jacobs, December 2019. *Parking analysis for New Lynn Primary School and Early Childhood Education Centre at 3094 Great North Road.*
[50] Auckland Council, November 2015. *Auckland Unitary Plan Operative in Part Chapter E – Auckland Wide: E27 Transport.* Table E27.6.2.4 Parking rates – area 2
[51] Standards New Zealand, October 2009. *Australian / New Zealand AS / NZS 2890.6:2009 Parking Facilities Part 6: Off-street parking for people with disabilities.*

Parking type	Number of staff / classrooms	Minimum rate	Maximum rate	Maximum parking requirement
Pick up / drop off zones	N/A	N/A	N/A	5 spaces
TOTAL				**70 spaces**

No minimum or maximum parking rates apply to a care centre facility located in a Business – Metropolitan Centre Zone. It has been assumed that providing absolutely no parking for the ECE is not feasible, therefore the parking rates which apply to other zones have been relied on as a guide (as summarised in Table 6-3).

Table 6-3 AUP(OP) parking rate requirements for ECE activities[52]

Parking type	Number of staff / children	Minimum rate	Maximum rate	Minimum parking requirement
Child pick-up / drop-off	50 children	No minimum. **Note:** have adopted a minimum rate of 0.10 per child or other person (other than employees) as a guide. This rate applies to zones not specified in Standard E27.6.2(5).	No maximum	5 spaces
Staff parking	8 staff	No minimum. **Note:** have adopted a minimum rate of 0.5 per FTE employee as a guide. This rate applies to zones not specified in Standard E27.6.2(5).	No maximum	4 spaces
Sub-total				**9 spaces**
Accessible parking	N/A	No less than one space[53]	N/A	1 space
TOTAL				**10 spaces**

It is recommended that the numbers of parking spaces for the primary school and ECE are confirmed during the Outline Plan of Works stage. For the purposes of developing designation conditions, the following site-specific designation conditions have been proposed for the site based on the parking analysis presented in Appendix D:

- **On-site car parking – schools:**

  There shall be no minimum car parking requirement. The maximum number of car parks, excluding any short term pick up and drop off bays, accessible spaces and car parking for the Early Childhood Education (Pre-school), shall not exceed 62 spaces.

- **On-site car parking – Early Childhood Education centre (pre-school):**

  There shall be no minimum or maximum car parking requirement. An appropriate level of car parking recommended by a suitably qualified traffic engineer/transportation planner shall be specifically addressed in the Outline Plan to establish this activity.

Therefore, the proposal and draft designation conditions for the primary school and ECE parking numbers comply with the relevant minimum and maximum parking rates of the AUP(OP).

[52] Auckland Council, November 2015. *Auckland Unitary Plan Operative in Part Chapter E – Auckland Wide: E27 Transport.* Table E27.6.2.3 Parking rates - area 1

[53] Standards New Zealand, October 2009. *Australian / New Zealand AS / NZS 2890.6:2009 Parking Facilities Part 6: Off-street parking for people with disabilities.*

6.2.3.2 Accessible vehicle parking

Accessible carparking spaces will be required in addition to the number of standard carparking spaces provided. Three accessible spaces have been provided for the primary school and one space has been provided for thee ECE which are located near the main buildings.

The numbers of accessible parking spaces provided for the primary school and ECE are in accordance with AS / NZS 2890.6:2009[54] and therefore meet the requirements for accessible parking. Minimum accessible parking will be provided even if standard carparks are not proposed as part of the final school design.

6.2.3.3 Bicycle parking

Based on the bicycle parking rates provided in Table E27.6.2.5, four short-stay and 35 long-stay bicycle spaces are required for the primary school and two short-stay and one long-stay spaces are required for the ECE (refer to Table 6-4 and Table 6-5). Therefore, the proposal complies with the requirements for short- and long-stay bicycle parking.

Table 6-4 Bicycle parking rates and requirements for primary school activities

Type	Number of staff / students	Rate	Bicycle parking requirement
Short-stay parking	800 students + 54 FTE employees	1 space plus 1 space per 400 students and FTE employees	4 spaces
Years 1 – 5 (long-stay)	667	1:30	23 spaces
Year 6 (long-stay)	133	1:15	9 spaces
School staff (long-stay)	54	1:20	3 spaces
Summary			39 spaces

Table 6-5 Bicycle parking rates and requirements for ECE activities[55]

Parking type	Number of staff / children	Rate	Bicycle parking requirement
Short-stay parking	50 children	1 space plus 1 space per 50 people to be accommodated	2 spaces
Long-stay parking	8 FTE staff	1 space per 10 FTE employees	1 space
Summary			3 spaces

6.2.4 E27.6.3. Design of parking and loading spaces

Parking should be adequate and appropriate to the location to allow safe picking up and setting down of students. Parking is not permitted on Clark Street adjacent to the site and any parking facilities proposed to serve the school / ECE parking will be provided within the site boundary.

The carpark has been developed up to a concept level of design as part of the 3094 Great North Road Feasibility Study[56] and it is noted that further development of the design is required to meet Auckland Transport's TDM guidelines, AUP(OP) requirements and to accommodate the required design vehicles. This is expected to be undertaken during the Outline Plan stage and it is likely that this update will impact on the fields, outdoor learning spaces and hard court areas as currently shown in the Feasibility Study.

[54] Standards New Zealand, October 2009. *Australian / New Zealand AS / NZS 2890.6:2009 Parking Facilities Part 6: Off-street parking for people with disabilities*

[55] Auckland Council, November 2016. *Auckland Unitary Plan Operative in Part Chapter E – Auckland Wide: E27 Transport.* Table E27.6.2.5 Required bicycle parking rates

[56] ASC Architects, 19 February 2020. *3094 Great North Road New Lynn Primary School Feasibility Study.*

The high-level carpark design includes angled carparking spaces (standard and accessible spaces), one bus bay and one-way traffic circulation. A student pick-up and drop-off zone is provided on the side of the carpark nearest the school so that students are not required to cross a lane of traffic. Footpaths, a traffic island and pedestrian crossings are proposed for students to exit vehicles and navigate the carpark.

6.2.4.1 E27.6.3.1. Size and location of parking spaces

The standard carparks are 2.5m wide, are angled at 60˚ and the depth is 4.2m from the kerb. This complies with the minimum parking space requirements outlined in Table E27.6.3.1.1. However, there is insufficient manoeuvring space for an 85th percentile vehicle to reverse out of the angled carparks as shown in Figure 6-1. It is recommended that further detailed design is undertaken during the next stage so that the carpark design complies with these requirements.

It should be noted that wheel-stops will be required where the parking space would otherwise overhang onto the raised central island to maintain a safe width for pedestrians.

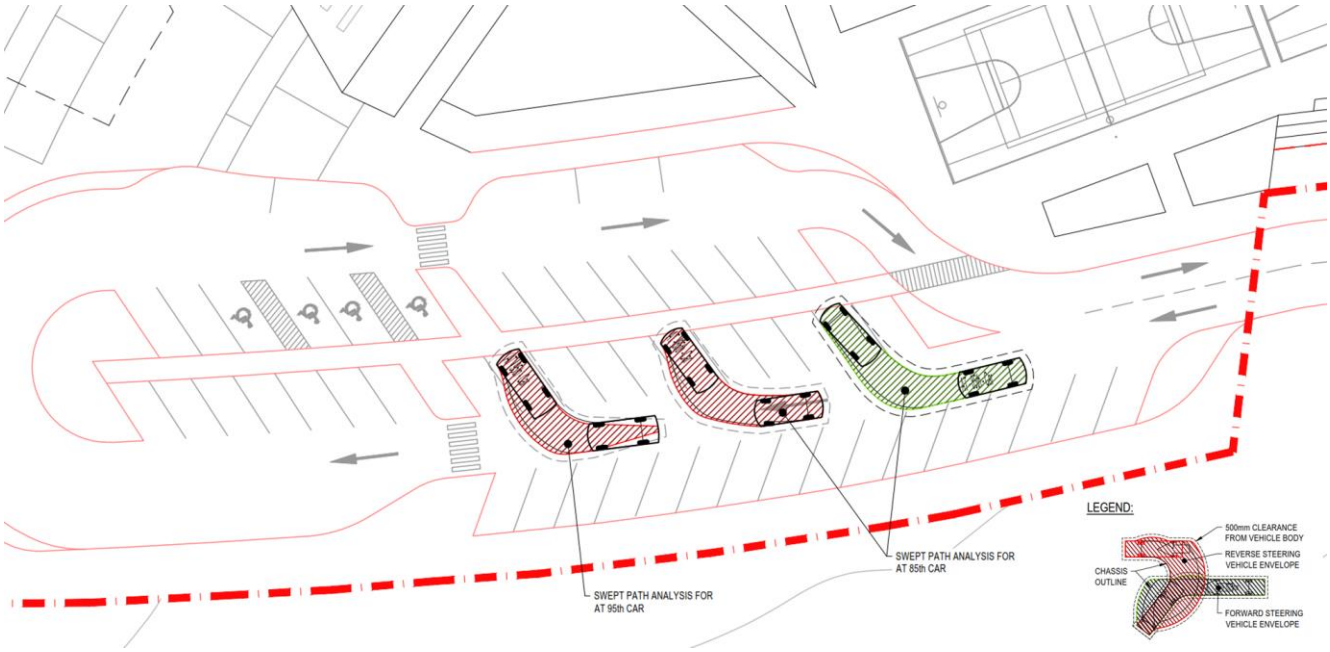

Figure 6-1 Swept path analysis for an 85th and 95th percentile standard car

6.2.4.2 E27.6.3.3. Access and manoeuvring

All parking spaces must have driveways and aisles for entry and exit of vehicles to and from the road, and for vehicle manoeuvring within the site. A standard Auckland Transport 12.6m bus is required to manoeuvre around the carpark as well as into and out of the dedicated bus bay / loading zone.

Figure 6-2 shows that the carpark design as currently shown cannot accommodate the tracking curves of a standard bus and does not fully comply with E27.6.3.3. The proposed traffic circulation and manoeuvring areas will be designed to comply with this requirement at the next stage of design.

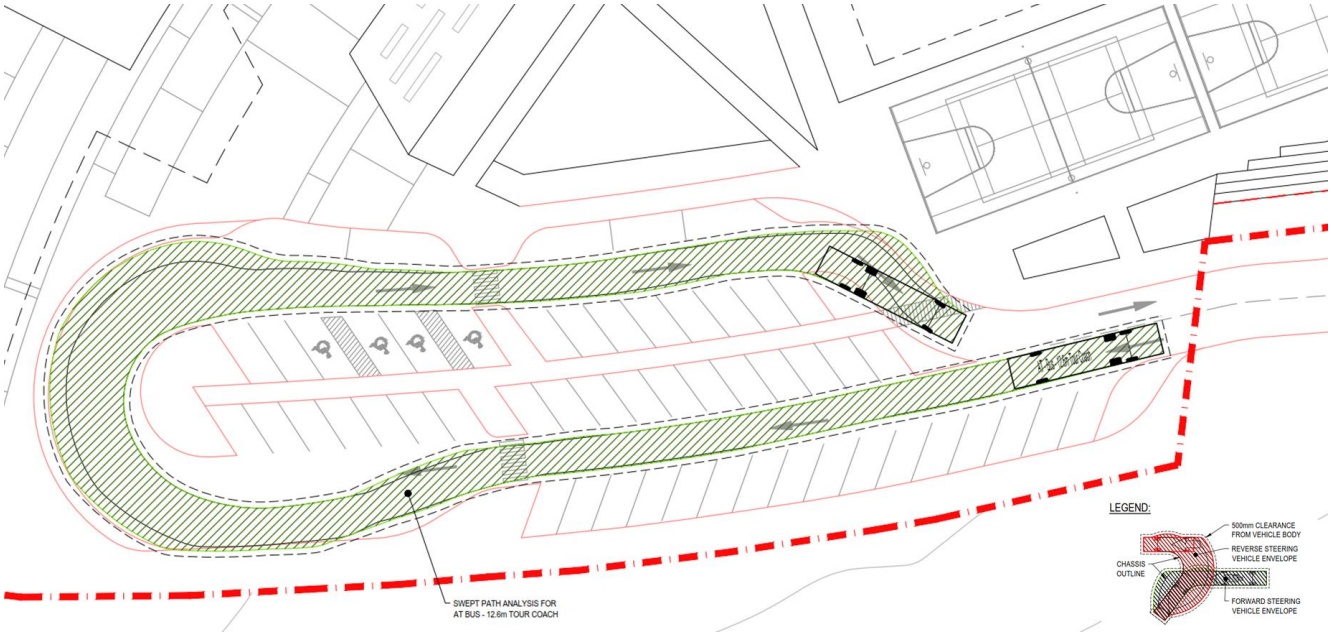

Figure 6-2 Swept path analysis for a standard Auckland Transport 12.6m tour coach vehicle

6.2.5 E27.6.5. Design and location of off-road pedestrian and cycling facilities

The proposal has been designed to accommodate the future pedestrian connection proposed alongside the Western Rail Line to existing footpaths on Clark Street. It also includes two additional pedestrian / cyclist links which connect to existing footpaths on Clark Street and Great North Road.

It is considered that the proposal complies with this requirement.

6.3 Auckland Plan 2050

The Auckland Plan 2050[57] is a high-level strategic local government document that sets the direction for addressing the key issues facing Auckland.

The Auckland Plan identifies development areas where significant housing and business growth is expected over the next 30 years, acknowledging that these development areas may require further planning and investment in community facilities. New Lynn is identified as a development area in the Plan. The proposed school and ECE are consistent with the outcomes sought by the Plan as providing accessible community services and facilities enables a quality and compact urban form which can accommodate anticipated growth.

The proposed school catchment and location of the school within the New Lynn metropolitan centre aligns with the Auckland Plan from a transport and accessibility perspective as walking, cycling and public transport have the potential to be the preferred modes of travel to school for students and staff.

6.4 AUP(OP) I607 New Lynn Precinct Plan

The main purpose of the I607 New Lynn Precinct Plan[58] is to enable intensive, high amenity retail, commercial and residential development, while providing for existing activities. In order to achieve the purpose of the Precinct Plan, the following provisions are required:

- Enabling development that supports public transport facilities;
- Enabling intensive, high amenity retail, commercial and residential development;

[57] Auckland Council, June 2018. *Auckland Plan 2050.*
[58] Auckland Council, 22 July 2016. *I607 New Lynn Precinct Plan - Auckland Unitary Plan Independent Hearings Panel Recommendation Version.*

- Providing for existing industrial activities; and
- Providing for the road network and new proposed roads.

One of the key objectives of the Plan is to enable high amenity and high-density residential living, supported by complementary, non-residential activities (such as educational facilities). The school site is located in a Business – Metropolitan Centre zone which allows for educational facilities as a permitted activity and these activities are not subject to any further control in New Lynn Precinct. The proposed school and ECE development are assessed as not directly affecting the purpose of the Precinct Plan and are well-aligned with the objectives for the New Lynn Precinct.

6.5 Auckland Regional Land Transport Plan

The Auckland Regional Land Transport Plan (RLTP) 2018 - 2028[59] sets out the land transport objectives, priorities and measures over the next 10 years. It includes a 10-year programme of priority transport interventions in response to Auckland's current transport challenges and growth forecasts to enable an accessible, well-connected, safe and sustainable Auckland region.

The RLTP recognises that there is potential to encourage walking and cycling as a viable transport mode for short trips for people who live / work near public transport hubs, schools and local centres. One of the key recommendations of this ITA is to develop an STP which strongly aligns with one of the objectives of the RLTP to increase the proportion of short trips to school made by walking and cycling. This also supports achieving the performance measure relating to active and sustainable mode share for schools of 45% by 2027/2028.

[59] Auckland Transport, June 2018. *Auckland Regional Land Transport Plan (RLTP) 2018 – 2028.*

7. Summary and Conclusions

7.1 Conclusions

The proposed site at 3094 Great North Road, New Lynn, is considered to be appropriate for redevelopment as a primary school and ECE centre given the following:

- Central location within a strategic development area which will see large-scale future residential development within the New Lynn centre;
- Existing and proposed high-quality walking and cycling connections to the site from the surrounding student catchment; and
- High level of accessibility by public transport (particularly for staff members), due to the proximity of the school site to the New Lynn transport interchange.

It is considered that the site to be designated for educational purposes can provide a suitable vehicle access arrangement which is supported by the existing signalised Cambridge Lane / Clark Street intersection. Traffic modelling was undertaken to understand the likely traffic impacts of the proposed school and ECE on the performance of the main access to the site and three surrounding intersections. The traffic impacts on the Great North Road / Rata Street / Titirangi Road, Great North Road / Clark Street and the Clark Street / Rankin Avenue / Totara Avenue intersections are considered to be no more than minor in terms of LOS, delay and queue lengths.

However, additional traffic is expected to have a significant impact on the performance of the Clark Street / Cambridge Lane (site accessway) intersection. Modelling results indicate that under the future masterplan modelling scenario, queue lengths exceeding 100m may develop at the Clark Street / Cambridge Lane intersection which may impact on the performance and operation of nearby intersections. An opportunity to optimise the signals at the access intersection was identified to mitigate these impacts. Initial sensitivity testing considerations indicated that signal optimisation has the potential to reduce queue lengths at intersection approaches by up to approximately 30% with an associated improvement in overall intersection LOS (compared to the future masterplan modelling scenario). This improves intersection operations without the need for construction or physical modifications to the existing intersection arrangement.

With the recommendations and mitigation measures proposed in this report (refer to section 5.5), is assessed that the transport network will be able to accommodate the future travel demands generated by the school and ECE. It is concluded that there are no notable transportation or traffic effects which would preclude the redevelopment of the site to provide a primary school, ECE and associated facilities / infrastructure. The proposal is considered to align with the overarching objectives and outcomes sought by local and Auckland-wide transport plans and strategies.

On the basis of this assessment of transportation impacts and recommendations, it is considered that the Ministry of Education and Auckland Council should proceed with the NOR to designate the site for the proposed primary school and ECE centre.

7.2 Transport recommendations summary

The following transport recommendations are identified for the subsequent Outline Plan of Works stage of the project:

- Ministry of Education to engage with Auckland Council on opportunities to widen the Clark Street footpath adjacent to the school site into an existing planting easement to improve pedestrian safety;
- Ministry of Education to engage with Auckland Transport on implementing a 40km/h variable speed limit along the road frontage to the site during school start and finish times;
- Two dedicated pedestrian / cyclist accessways to the site are provided, which are completely separated from the main vehicle access; one from Great North Road at the northern site boundary and one from Clark Street at the eastern site boundary;

- The main vehicle access for the site is via Cambridge Lane from Clark Street (as existing) – no additional vehicle accessways are proposed;
- The levels of vehicle, bicycle and scooter parking proposed to serve the primary school and ECE will be further investigated at the Outline Plan stage:
  - Given the site's high level of accessibility by public transport, walking and cycling; reduced vehicle parking rates (relative to the Ministry's standard designation conditions for educational purposes) are considered appropriate and should be explored.
  - It is anticipated that appropriate levels of parking can be accommodated within the site.
  - On-site pick-up and drop-off spaces are provided for the primary school.
- Further development of the Feasibility Study concept design plan for the carpark to comply with Auckland Transport's Transport Design Manual - Parking Design Engineering Code[60] guidelines and the AUP(OP) Chapter E27 – Transport[61]; and
- It is recommended that a CTMP is prepared by the contractors, as required by the NZ Transport Agency and Auckland Transport.

7.3 Recommended transport mitigation measures

It is recommended that the following mitigation measures are considered by the Ministry of Education, Auckland Transport, Auckland Council and the school / ECE. The mitigation measures proposed in this ITA are to be further assessed in the Outline Plan of Works, as per the conditions outlined in Form 18 Notice of Requirement[62]:

- Modification of the traffic signal phasing at the intersection/s adjacent to the school (subject to the approval of the road controlling authority), to allow for increased pedestrian crossing times, improved circulation within the carpark, and to reduce queue lengths and impacts on adjacent intersections. Shorter cycle times for the Cambridge Lane / Clark Street intersection should be investigated and it is recommended that extending the length of the right-turn pocket on the Clark Street north approach is also considered; and
- Development of a School Travel Plan (STP) to manage travel demand to and from the school and encourage measures such as implementing a Kea Crossing, Walking School Buses, walking and cycling as viable modes of travel, carpooling and public transport usage. The STP is to be developed with Auckland Transport prior to the opening of the school and should align with the Travelwise Programme.

With the application of the mitigation measures and recommendations made in this report, it is assessed that that the local transport network will be able to accommodate the levels of demand likely to be generated by the school and ECE. The implementation of any of these recommendations should involve consultation with Auckland Transport and Auckland Council.

It is therefore concluded that there are no significant transportation or traffic effects which would preclude the redevelopment of the site to provide a primary school, ECE and associated facilities and infrastructure.

On the basis of this assessment of transportation impacts and recommendations, it is considered that Auckland Council should proceed with the Notice of Requirement (NOR) to designate the site for the proposed primary school and ECE centre.

[60] Auckland Transport, 2020. *Draft Transport Design Manual - Parking Design Engineering Code.*
[61] Auckland Council, November 2015. *Auckland Unitary Plan Operative in Part Chapter E – Auckland Wide: E27 Transport.* Site accessed from https://unitaryplan.aucklandcouncil.govt.nz/Images/Auckland%20Unitary%20Plan%20Operative/Chapter%20E%20Auckland-wide/4.%20Infrastructure/E27%20Transport.pdf
[62] Incite Auckland Limited, March 2020. *Draft Form 18 Notice of Requirement by Minister, Local Authority, or requiring authority for new designation of alteration of designation.*

Appendix A. ITA Report and SIDRA Modelling Memorandum comment register

Jacobs

Memorandum

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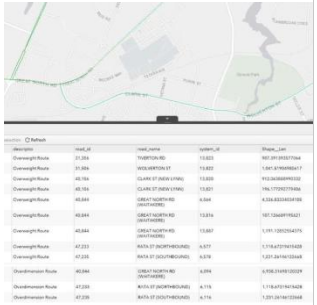
Subject	Integrated Transport Assessment Report - Comment Register	**Project Name**	New Lynn Primary School - 3094 Great North Road Designation
Client	Ministry of Education	**Project No.**	IZ131900
Comments on ITA revision	Draft Revision 2.0 (issued 03-04-2020)		
Date	20 May 2020		
Respondents	Auckland Transport (AT), Auckland Forecast Centre (AFC)		

Integrated Transport Assessment comment register:

No.	Section of ITA report	Comment (received from AT and AFC on 30-04-2020)	Response	Action
1	2.2 Existing road environment and traffic volumes	▪ The site is within the vicinity of Clark Street/Wolverton Street, Great North Road and Rata Street. These roads all form part of the 1B Strategic Freight Network. This means that freight traffic is a high priority mode over these roads. 	▪ To be actioned. ▪ Noted and actioned.	▪ Section 2.2 to be updated to include reference to Strategic Freight Network classification.

No.	Section of ITA report	Comment (received from AT and AFC on 30-04-2020)	Response	Action
		▪ The ITA states that Clark Street is not an overweight or over dimension route, but that the overbridge is used by a considerable volume of Heavy Commercial Vehicles. The first part of this statement is incorrect – the Clark Street overbridge is an Overweight Route (linking into Great North Road which is both over dimension & overweight – see snapshot below). This, combined with its L1 Strategic Freight Network classification, makes it a high priority freight corridor.		▪ Section 2.2 updated to include over dimension route.
2	2.4 Public transport	▪ The ITA correctly identifies that the site is well connected to public transport, such as the New Lynn interchange. However, it is unlikely that public transport will be heavily used by primary school students. This will be made less likely by the fact that the walking/cycling infrastructure that connects the site with public transport is not suitable for a high number of primary school children.	▪ Noted. It is considered that there is higher potential for school and ECE staff members to use public transport as a viable mode of transport (which is covered in section 5.4 Public transport effects).	▪ Add reference to the need for safe and connected walking and cycling facilities for the last leg of a public transport trip. ▪ Potential mitigation measures to be considered to improve the walking and cycling environment for primary school children are further described in section 3.2 and 5.3.
3	3.2 Walking and cycling	▪ The map that shows the Auckland Cycle Network is not current but is an older version that is taken from Bike Auckland's website. Please note that the Auckland Cycle Network is expected to be replaced this year with a new strategic cycle network. ▪ It would be useful if the ITA could identify likely walking routes within the catchment to the school. The ITA should also identify any issues along these routes that could pose a risk for students walking to school. For instance, at the Great North Rd / Titirangi Rd intersection, the slip lanes are not easy to cross safely.	▪ Noted. ▪ Actioned.	▪ Reference to status of cycling map added to section 3.2 in the footnote. ▪ Map of walking and cycling facilities along main routes added to section 3.2.

No.	Section of ITA report	Comment (received from AT and AFC on 30-04-2020)	Response	Action
4	4.2 Predicted mode share and trip generation	▪ See attached Excel spreadsheet.	▪ Refer to table below for modelling comments regarding estimated trip generation and mode share.	▪ Refer to table below for actions.
5	5.3 Walking and cycling effects	▪ AT's internal specialists have concerns about the suitability of the site for access by walking and cycling, as it is considered that the surrounding environment would be unsafe for primary school students. ▪ With regard to walking, the footpaths leading to the school are narrow (i.e. on Clark Street) and the surrounding roads contain high traffic volumes as well as a large amount of Heavy Commercial Vehicle traffic (see comments above). The ITA should address how these issues might be mitigated, particularly in relation to Clark Street and these should also be carried through as conditions in the NOR. For instance, removing the proposed planting easement and instead widening the footpath could be one mitigation.	▪ Noted - it is considered that there are some potential safety issues with the existing transport environment; however, measures are recommended to mitigate these impacts. ▪ Noted and actioned.	▪ Further detail will be provided in the updated report on mitigation measures including kerb build outs, footpath widening and provision of alternative site access points (separate to the main vehicle accessway).
		▪ The ITA correctly identifies that Clark Street is not suitable for large numbers of students to cycle to school. However, it does not address how students who cycle might access the school from surrounding cycling infrastructure, such as the New Lynn to Avondale shared path. The ITA should address this. ▪ Concern about adequacy of the crossing points at Cambridge Lane / Clark Street intersection. The ITA identifies issues with narrow footpaths where signal poles are accommodated. Need for monitoring of traffic signals and pedestrian phases identified - how will this be addressed in conditions. Clarify what is meant by this statement: 'Two additional pedestrian/cyclist access points are provided from Great North Road and from Clark Street (refer to Figure 4-1),…' It is not clear where these are located.	▪ The crossing points at the intersection have been identified as pinch points due to signal poles and narrow existing footpaths. Two additional site access points have been proposed to separate students walking and cycling from the main vehicle access and to reduce the numbers of students waiting at the signalised intersection. ▪ Mitigation measures can be addressed as part of the ITA in the establishment outline plan as per the proposed conditions.	▪ The location of the two additional site access points (accessible by walking and cycling only), is highlighted in Figure 4.1. ▪ Map of walking and cycling facilities along main routes added to section 3.2.

No.	Section of ITA report	Comment (received from AT and AFC on 30-04-2020)	Response	Action
		▪ The final paragraph (p32/94) suggests that the school is well-placed to achieve high numbers of students cycling - but the previous paragraph identifies that Clark Street is unsuitable. Clarification needed.		
6	5.5.1 Traffic speeds	▪ Note suggestion of variable 40km/h speed limit and kerb buildouts at Cambridge Road / Clark Street - this should be identified in conditions as a potential mitigation.	▪ The Ministry of Education will engage with Auckland Transport as the road controlling authority on implementing a 40km/h variable speed limit at the Outline Plan of Works stage.	▪ Consideration of a 40km/h speed limit has been retained as a recommendation for consideration between the Ministry and Auckland Transport at the Outline Plan of Works stage.
7	5.5.3 TDM	▪ Support development of School Travel Plan prior to opening.	▪ Noted. The development of an STP is included in the conditions.	▪ Reference to the Form 18 (NOR conditions) has been added.
8	5.5.4 Construction Traffic Management Plan	▪ The requirement for a CTMP needs to be covered in a condition.	▪ Agreed – this is included in the conditions which have been prepared as a separate document.	▪ Reference to the Form 18 (NOR conditions) has been added.
9	6. Consistency with relevant transport plans and strategies	▪ Focus is on E27 Transport, when there are higher level objectives and policies in the AUP of relevance. These are likely to be addressed in the planning report accompanying the NOR. The ITA should explicitly acknowledge and indicate broad agreement with the planning assessment - otherwise it appears that the ITA hasn't considered higher level AUP objectives and policies.	▪ Actioned.	▪ References to the AUP's wider objectives and policies has been added to section 6.
10	6.1.2 Trip generation	▪ Trip generation - suggest it is worth noting that the trip generation control does not apply because the AUP recognises that the Metropolitan Centre zone is an appropriate location for high trip generating activities.	▪ Noted and actioned.	▪ Note added to updated section 6.2.2.
11	6.1.3.1 Carparking	▪ Some explanation of why the AUP does not have minimum parking requirements in this zone would be helpful -	▪ Actioned.	▪ Explanation of the lack of minimum parking rates for

No.	Section of ITA report	Comment (received from AT and AFC on 30-04-2020)	Response	Action
		particularly as site specific controls are sought, based on the AUP approach. ▪ Note the recommended site-specific designation conditions - these need to be re-iterated in Section 7 of the ITA.	▪ Proposed site specific designation conditions have been prepared as a separate document. ▪ Mitigation measures can be addressed as part of the ITA in the establishment outline plan as per the proposed conditions.	Metropolitan Centre zones has been added to section 6.2.3.1 to provide context. ▪ Reference to the Form 18 (NOR conditions) has been added.
12	6.1.3.2 Accessible vehicle parking	▪ Assume that MOE will provide accessible parking even if no other parking is provided. The relevant legislation may not require accessible parking if no standard parking is provided.	▪ Noted and actioned – the provision of accessible carparking should not be affected by the numbers of standard carparking spaces.	▪ Addressed in section 6.2.3.
13	6.2 Auckland Plan 2050	▪ The reference to the New Lynn Strategic Growth Special Housing Area (SHA) is confusing - clarify the origin of this term, and the extent to which this is still relevant as it may have been overtaken by AUP zonings and provisions.	▪ Noted and actioned.	▪ Section has been clarified to refer to AUP zones.
14	6.3 New Lynn Precinct Plan	▪ It would be useful to identify the activity status applying to education facilities under the zoning and the precinct plan. Though MOE is using a designation approach, the underlying zoning provides context, which in this case would support this as an appropriate location.	▪ Noted and actioned.	▪ Further context and reference of activity status added to section 6.3.
15	7.1 Conclusions	▪ The 'high quality' nature of the existing and proposed walking and cycling connections has been overemphasised and is not consistent with the feedback received from AT's internal specialists. ▪ Clarify how the suggestion that the Clark Street / Cambridge Lane intersection will need to be optimised will be addressed in conditions.	▪ Noted. ▪ Actioned. Proposed site specific designation conditions have been prepared as a separate document. Mitigation measures can be addressed as part of the ITA in the establishment outline plan as per the proposed conditions.	▪ Further explanation of mitigation measures to provide a safer environment for students to walk and/or cycle to school. ▪ Reference to the Form 18 (NOR conditions) has been added.
16	7.2 Transport recommendations summary	▪ Desirable to have a condition limiting vehicle accessway to Cambridge Lane via Clark Street.	▪ This is included in the proposed designation conditions.	▪ Reference to the Form 18 (NOR conditions) has been added.

No.	Section of ITA report	Comment (received from AT and AFC on 30-04-2020)	Response	Action
17	7.3 Recommended transport mitigation measures	▪ Need to see the proposed designation conditions relevant to transport matters so that these can be considered in conjunction with the ITA. ▪ Extension of the right turn bay should also be identified in conditions as a matter to be considered. ▪ Conditions should also identify possibility of reduced speed limit - variable 40km/h. ▪ MOE usually offers or agrees to conditions about crossing facilities and the school travel plan - and would expect to see these covered in the proposed conditions. Note that the ITA identifies that the travel plan should be developed prior to the opening of the school - AT supports early development of the travel plan.	▪ Designation conditions are being prepared as a separate document but are informed by the ITA – Form 18 (NOR conditions ▪ Adjustments to existing signal phasing for the Cambridge Lane intersection are also recommended as a mitigation measure. Propose to include a broader reference to traffic signal phasing and/or intersection design improvements (to mitigate vehicle queues developing back from the site access and impacting on the operations of adjacent intersections), in the designation conditions. ▪ Actioned. The draft conditions require the development of an STP prior to the opening of the school in consultation with Auckland Transport (either directly or through the School Board of Trustees); and specific consideration of crossing facilities to support safe access to the entry points to the school.	▪ Mitigation measure for the Cambridge Lane / Clark Street intersection to be included in conditions as a matter to be considered during the Outline Plan of Works phase. ▪ Consideration of reduced 40km/h speed limit to be included in designation conditions.
18	Appendix D. SIDRA Modelling Memorandum	▪ See attached Excel spreadsheet.	▪ Refer to table below for comments on the SIDRA modelling memorandum.	▪ Refer to table below for actions.

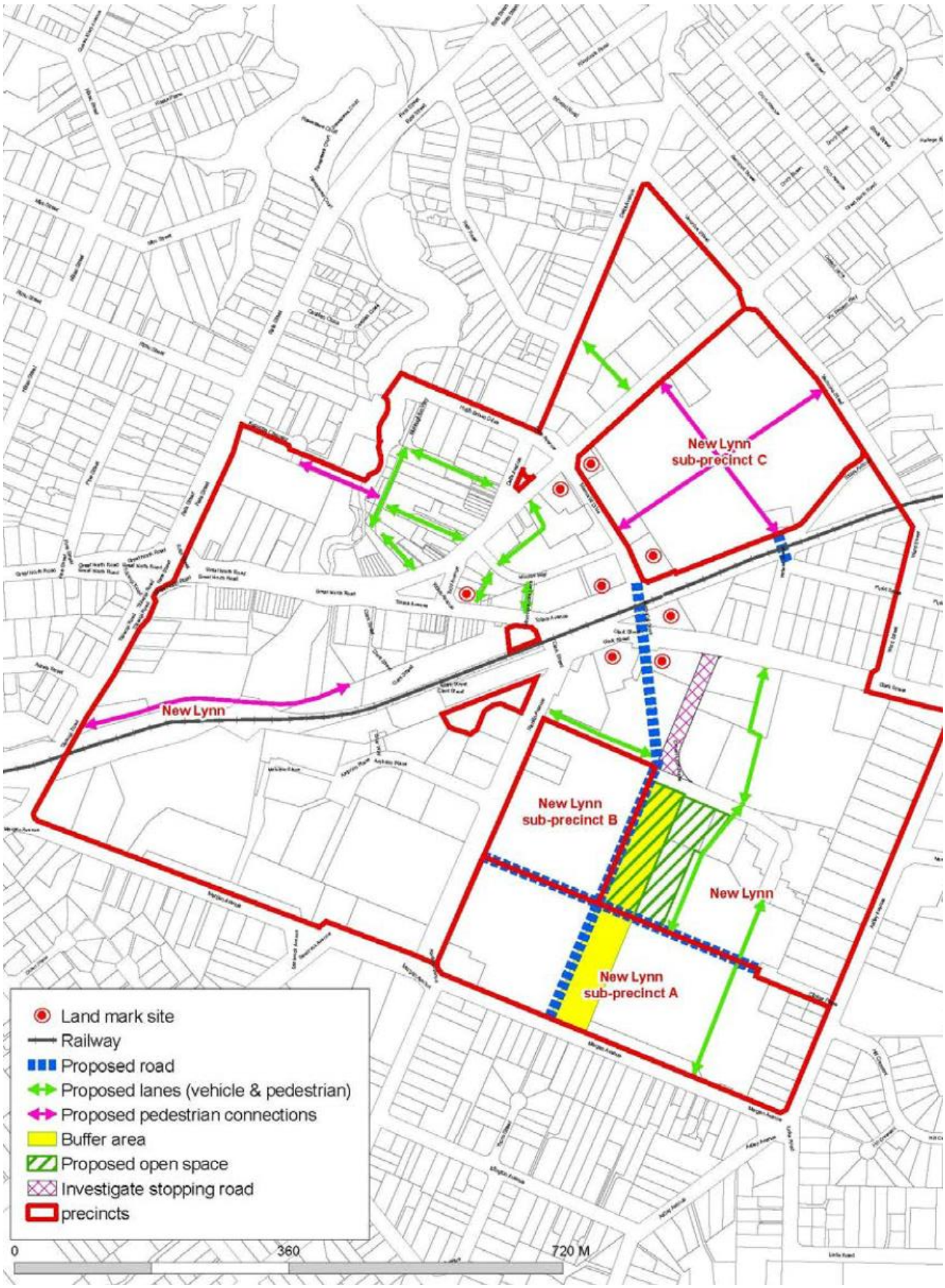
SIDRA modelling memorandum comment register

No.	Section of ITA report	Comment	Response	Action
1	Main Report (Traffic Generation)	▪ Predicted traffic generation looks ok. ▪ Were the existing trips from the subject site removed from the SCATS count data before the school trips were added or was the site abandoned at the time of the SCATS counts?	▪ Noted. ▪ The existing trips to the site were not removed prior to the addition of the trips generated by the school. The distribution of vehicles entering the site could not be accurately determined due to the shared LT/TH lane on the Clark Street south approach. Video footage was not available for the intersection to determine the movement splits. ▪ 'Number of vehicles in = number of vehicles out' could have been assumed in absence of this information – however, volumes entering / existing the site were small. ▪ Based on a typical week of SCATS data, the average volumes for the school AM peak hour (8 – 9am) are 2 vehicles/h for the shared LT/RT Cambridge Lane access; 212 vehicles/h for the shared TH/LT Clark Street south approach; and 7 vehicles/h for the RT Clark Street northern approach. ▪ Based on a typical week of SCATS data, the average volumes for the school PM peak hour (2:30 – 3:30pm) are 17 vehicles/h for the shared LT/RT Cambridge Lane access; 302 vehicles/h for the shared TH/LT Clark Street south approach; and 11 vehicles/h for the RT Clark Street northern approach.	▪ N/A.
2	SCATS data	▪ This was provided for Monday, 12 August 2019. Is this the date that was specifically requested or the only data that was available? Typically, the average of the Tue, Wed & Thu of a week is requested from SCATS for analysis. AFC can look to see if this data is available.	▪ Average weekday data was used for the modelling, from 12 – 16 August 2019. This week was during the school term and did not contain public holidays. ▪ A large amount of data for more recent weeks contained 'bad data', and a number of weeks were affected by strike action and data was not considered to be representative of a typical week.	▪ To be clarified in the Modelling Memorandum Draft Revision 3.0.

No.	Section of ITA report	Comment	Response	Action
3	Traffic distribution	▪ There appears to be discrepancies between the values calculated in the traffic generation Table 4-2 and the values in the traffic distribution Figures 4-3 to 4-8. There also appears to be errors when following the traffic flows from intersection to intersection in both the AM and PM Figures. I have highlighted the areas where Jacobs need to check their workings. Please refer to the 'Traf Gen & Dist Checks' tab	▪ AM peak traffic distributions have been reviewed and are correct in the SIDRA model. ▪ PM peak traffic distributions have been reviewed and actioned.	▪ Memo updated to include revised diagrams for the AM peak. ▪ SIDRA model and outputs updated to include revised traffic flows for the PM peak.
4	Appendix D - SIDRA Modelling Comments	▪ SCATS data and SIDRA output files haven't been provided, so the flows used in the models can't be checked.	▪ Noted.	▪ N/A
5	Clark St / Cambridge Lane	▪ The predicted 95th %ile queue lengths on Cambridge Lane and on the Clark St (north) right turn are over 100m in both peak hours. The distance along Clark St between Cambridge Ln and Great Nth Road is about 90m. The right turn into Cambridge Ln and onto Great Nth Road share the centre flush median as overflow. This will limit any lengthening of the right turn lane road markings into Cambridge Lane that was suggested in the report. ▪ The Clark St / Cambridge Ln and Clark St / Great Nth Rd intersections need to be modelled together in a SIDRA network to fully understand how these 2 intersections, in particular the right turns, will interact. ▪ The Cambridge Lane approach delay results are missing from Tables 4.9 and 4.10. I wasn't able to find	▪ Actioned – will clarify in the report that the ability of this measure to mitigate queuing impacts is limited due to the proximity of the two intersections. ▪ Further investigation will need to be undertaken during the outline plan of works stage which is included within the proposed conditions. ▪ Cambridge Lane approach delays have not been reported - Google travel time data was used to validate the model (due to the absence of travel time survey data). Google travel time / delay data was not available in a useable form for the Cambridge Lane link.	▪ Further clarification regarding extension of right turn bay and delay results to be added to the revised report.

No.	Section of ITA report	Comment	Response	Action
		the SIDRA delay results for this approach anywhere in the report. These should be added somewhere.		
6	Clark St / Great North Rd	▪ There is a significant increase predicted to the queue length on the Great Nth Road (west) approach in the AM peak (Table 4.5). It is likely that the right turn queue will overflow into the through lane at times and reduce the capacity of the through traffic lanes. This may also happen in the PM peak (Table 4.6), but to a lesser extent. The right turn data for Clark St is missing from the AM Table.	▪ Noted and actioned.	▪ Table updated to include RT data.
7	Great North Rd / Rata St / Titirangi Rd	▪ There is a significant increase predicted to the right turn queue length from Great Nth Road (east) in the AM peak. It is likely that there may not be sufficient storage at times during this peak hour, resulting in an overflow to the adjacent through lane. However, it does appear that the right turn lane could be lengthened if required.	▪ Noted.	▪ N/A.

Appendix B. I607 New Lynn Precinct Plan



Appendix C. Crash site details report

Untitled query

Crash year

2015 — 2020

Saved sites

3094 Great North Road

Site details report

Fatal crashes: 0 | **Injury crashes:** 2 | **Non-injury crashes:** 20 | **Total crashes:** 22

Overall crash statistics

Crash severity

Crash severity	Number	%	Social cost($m)
Fatal	0	0	TBC
Serious	0	0	TBC
Minor-injury	2	9.09	TBC
Non-injury	20	90.91	TBC
TOTAL	22	100	TBC

Crash numbers

Year	Fatal	Serious	Minor	Non-injury
2015	0	0	0	4
2016	0	0	1	6
2017	0	0	0	3
2018	0	0	0	5
2019	0	0	1	2
TOTAL	0	0	2	20
Percent	0	0	9.1	90.91

Crash type and cause statistics

Crash type

Crash type	Crash numbers	% All crashes
Overtaking crashes	4	18.18
Straight road lost control/head on	1	4.55
Bend - lost control/Head on	3	13.64
Rear end/obstruction	12	54.55
Crossing/turning	2	9.09
Pedestrian crashes	0	0
Miscellaneous crashes	0	0
TOTAL	22	100

Overall casualty statistics

Injury severity

Injury severity	Number	% all casualties
Fatal	0	0.00
Serious Injured	0	0.00
Minor Injured	4	100.00
TOTAL	4	100.00

Casualty numbers

Year	Fatal	Serious Injured	Minor Injured
2015	0	0	0
2016	0	0	1
2017	0	0	0
2018	0	0	0
2019	0	0	3
2020	0	0	0
TOTAL	0	0	4
Percent	0.00	0.00	100.00

Note: Last 5 years of crashes shown (unless query includes specific date range).

Casualty types

Casualty types	Fatalities	Serious injuries	Minor injuries
Cyclists	0	0	0
Drivers	0	0	3
Motorcycle pillions	0	0	0
Motorcycle riders	0	0	0
Passengers	0	0	1
Pedestrians	0	0	0
Other	0	0	0
TOTAL	0	0	4

Note: Motorcycle stats include Mopeds.

Crash factors

Crash factors	Crash numbers	% All crashes
#N/A	2	9.09
Alcohol	4	18.18
Disabled, old age or illness	1	4.55
Failed to give way or stop	3	13.64
Fatigue	2	9.09
Incorrect lanes or position	4	18.18
Miscellaneous factors	1	4.55
Overtaking	0	0.00
Pedestrian factors	0	0.00
Poor handling	2	9.09
Poor judgement	6	27.27
Poor observation	8	36.36
Position on Road	0	0.00
Road factors	0	0.00
Travel Speed	3	13.64
Unknown	0	0.00
Vehicle factors	2	9.09
Weather	0	0.00
TOTAL	38	172.73

Crashes with:

Factor groups	Crash numbers	% All crashes
All road user factors	10	45.45
Driver only factors	18	81.82
Pedestrian factors	0	0.00
Vehicle factors	2	9.09
Road factors	0	0.00
Environment factors	0	0.00
No identifiable factors	0	0.00
Retired codes - no future use	0	0.00
TOTAL	30	136.36

Notes: Factors are counted once against a crash - i.e. two fatigued drivers count as one fatigue crash factor.

Driver/vehicle factors are not available for non-injury crashes for Northland, Auckland, Waikato and Bay of Plenty before 2007. This will influence numbers and percentages.

% represents the % of crashes in which the cause factor appears.

Number of parties in crash

Party type	All crashes	% All crashes
Single party	2	9.09
Multiple party, including pedestrian	0	0.00
Multiple party, excluding pedestrian	20	90.91
TOTAL	22	100

Driver and vehicle statistics

Drivers at fault or part fault in injury crashes - by age

Age	Male	Female	Unknown	Total	Percentage (%)
0-4	0	0	0	0	0.00
5-9	0	0	0	0	0.00
10-14	0	0	0	0	0.00
15-19	1	0	0	1	50.00
20-24	0	0	0	0	0.00
25-29	0	0	0	0	0.00
30-34	0	0	0	0	0.00
35-39	0	0	0	0	0.00
40-44	0	0	0	0	0.00
45-49	0	0	0	0	0.00
50-54	0	0	0	0	0.00
55-59	0	0	0	0	0.00
60-64	0	0	0	0	0.00
65-69	0	0	0	0	0.00
70-74	1	0	0	1	50.00
75-79	0	0	0	0	0.00
80-84	0	0	0	0	0.00
85-89	0	0	0	0	0.00
90-94	0	0	0	0	0.00
95-99	0	0	0	0	0.00
100+	0	0	0	0	0.00
Unknown	0	0	0	0	0.00
TOTAL	2	0	0	2	–
Percent	100.00	0.00	0.00	100.00	–

Note: Driver information is not calculated for non-injury crashes.

Drivers at fault or part fault in injury crashes - by licence

Licence	Male	Female	Unknown	Total	Percentage (%)
Full	0	0	0	0	0.00
Learner	0	0	0	0	0.00
Restricted	1	0	0	1	50.00
Overseas	0	0	0	0	0.00
Wrong class	0	0	0	0	0.00
Never Licensed	0	0	0	0	0.00
Unknown	1	0	0	1	50.00
Forbidden	0	0	0	0	0.00
TOTAL	2	0	0	2	–
Percent	100.00	0.00	0.00	100.00	–

Note: Driver information is not calculated for non-injury crashes.

Vulnerable road users

Crash types	Number	Percentage (%)
Cyclist crashes	0	0.00
Pedestrian crashes	0	0.00
Motorcycle crashes	0	0.00
All other crashes	22	100.00

Note: Some crashes involve more than one vulnerable road user type.

Note: Motorcycle stats include Mopeds.

Road environment statistics

Road type

Road type	State highway	Local road	Unknown	N/A	Total	Percentage (%)
Urban	0	21	0	0	21	95.45
Open	0	1	0	0	1	4.55
Unknown	0	0	0	0	0	0.00
TOTAL	0	22	0	0	22	–
Percent	0.00	100.00	0.00	0.00	100.00	–

Natural light conditions

Conditions	Injury	Non-injury	Total	%
Light/overcast	1	14	15	68.18
Dark/twilight	1	5	6	27.27
Unknown	0	1	1	4.55
TOTAL	2	20	22	100

Conditions

Conditions	Injury	Non-injury	Total	%
Dry	1	11	12	54.55
Ice or Snow	0	0	0	0.00
Wet	1	8	9	40.91
Null	0	1	1	4.55
TOTAL	2	20	22	100

Intersection/midblock

Intersection/mid-block	Total	%
Intersection	20	90.91
Midblock	2	9.09
TOTAL	22	100

Vehicles involved in injury crashes (vehicle count)

Vehicle type	No. of vehicles	% of vehicles in injury crashes
Unknown	0	0.00
Car/Wagon	11	100.00
SUV	0	0.00
Van	0	0.00
Ute	0	0.00
Truck	0	0.00
Truck HPMV	0	0.00
Bus	0	0.00
Motorcycle	0	0.00
Moped	0	0.00
Train	0	0.00
Cycle	0	0.00
Other	0	0.00
Unknown	0	0.00
50 Max	0	0.00
Left scene	0	0.00
Uncoupled towed vehicle	0	0.00
TOTAL	11	100.00

Vehicles involved in injury crashes (crash count)

Vehicle type	Injury crashes	% of injury crashes
Unknown	0	0.00
Car/Wagon	2	100.00
SUV	0	0.00
Van	0	0.00
Ute	0	0.00
Truck	0	0.00
Truck HPMV	0	0.00
Bus	0	0.00
Motorcycle	0	0.00
Moped	0	0.00
Train	0	0.00
Cycle	0	0.00
Other	0	0.00
Unknown	0	0.00
50 Max	0	0.00
Left scene	0	0.00
Uncoupled towed vehicle	0	0.00
TOTAL	2	100.00

Objects struck

Objects struck	Injury crashes	%	Non-injury crashes	%
Crashes w/obj struck	2	9.09	3	13.64

Object struck	Injury crashes	%	Non-injury crashes	%
Animals	0	0.00	0	0.00
Bridges/Tunnels	0	0.00	0	0.00
Cliffs	1	4.55	1	4.55
Debris	0	0.00	0	0.00
Embankments	0	0.00	0	0.00
Fences	0	0.00	1	4.55
Guide/Guard rails	1	4.55	1	4.55
Houses	0	0.00	0	0.00
Traffic Islands	0	0.00	1	4.55
Street Furniture	0	0.00	0	0.00
Kerbing	0	0.00	1	4.55
Landslips	0	0.00	0	0.00
Parked vehicle	1	4.55	0	0.00
Trains	0	0.00	0	0.00
Sight Rails	0	0.00	0	0.00
Poles	0	0.00	1	4.55
Stationary Vehicle	0	0.00	0	0.00
Roadwork	0	0.00	0	0.00
Traffic Sign	0	0.00	0	0.00
Trees	0	0.00	0	0.00
Drainage Structures	0	0.00	0	0.00
Ditches	0	0.00	0	0.00
Other	0	0.00	0	0.00
Thrown or dropped objects	0	0.00	0	0.00
Water	0	0.00	0	0.00
TOTAL	3	–	6	–

Note: % represents the % of crashes in which the object is struck.

Vehicle usage in injury crashes

Vehicle usage	Fatal Crash	Serious Crash	Minor Crash	Total	Percentage (%)
Private	0	0	9	9	81.82
Attenuator Truck	0	0	0	0	0.00
Agricultural	0	0	0	0	0.00
Ambulance	0	0	0	0	0.00
Campervan	0	0	0	0	0.00
Concrete mixer	0	0	0	0	0.00
Fire	0	0	0	0	0.00
Logging truck	0	0	0	0	0.00
Mobile crane	0	0	0	0	0.00
Police	0	0	0	0	0.00
Rental	0	0	1	1	9.09
Road Working	0	0	0	0	0.00
Scheduled service Bus	0	0	0	0	0.00
School bus	0	0	0	0	0.00
Tanker	0	0	0	0	0.00
Taxi	0	0	0	0	0.00
Tour Bus	0	0	0	0	0.00
Trade person	0	0	0	0	0.00
Work travel	0	0	0	0	0.00
Work vehicle	0	0	0	0	0.00
Other	0	0	0	0	0.00
Null	0	0	1	1	9.09
TOTAL	0	0	11	11	–
Percent	0.00	0.00	100.00	100.00	–

Time period statistics

Month by injury/ non-injury crashes

Month	Injury crashes	%	Non-injury crashes	%	Total	%
Jan	0	0	3	15	3	13.64
Feb	0	0	0	0	0	0
Mar	1	50	1	5	2	9
Apr	0	0	1	5	1	4.55
May	0	0	2	10	2	9
Jun	0	0	2	10	2	9
Jul	1	50	0	0	1	4.55
Aug	0	0	2	10	2	9
Sep	0	0	3	15	3	13.64
Oct	0	0	1	5	1	4.55
Nov	0	0	1	5	1	4.55
Dec	0	0	4	20	4	18.18
TOTAL	2	100	20	100	22	100

Day/period

Day/Period	All crashes	% All crashes
Weekday	16	72.73
Weekend	6	27.27
TOTAL	22	100

Day/period by hour

Day/Period	00:00 - 02:59	03:00 - 05:59	06:00 - 08:59	09:00 - 11:59	12:00 - 14:59	15:00 - 17:59	18:00 - 20:59	21:00 - 23:59	Total
Weekday	1	0	3	3	6	1	2	0	16
Weekend	0	1	1	1	1	1	1	0	6
TOTAL	1	1	4	4	7	2	3	0	22

Day/period by hour DOW

Day/Period	00:00 - 02:59	03:00 - 05:59	06:00 - 08:59	09:00 - 11:59	12:00 - 14:59	15:00 - 17:59	18:00 - 20:59	21:00 - 23:59	Total
Mon	0	0	1	0	2	1	1	0	5
Wed	1	0	1	2	2	0	1	0	7
Thu	0	0	0	1	1	0	0	0	2
Fri	0	0	1	0	1	0	1	0	3
Sat	0	1	0	1	0	1	0	0	3
Sun	0	0	1	0	1	0	0	0	2
TOTAL	1	1	4	4	7	2	3	0	22

Appendix D. Parking analysis for New Lynn Primary School and Early Childhood Education Centre at 3094 Great North Road memorandum

Jacobs

Memorandum

Carlaw Park
12-16 Nicholls Lane, Parnell
Auckland 1010
PO Box 9806, Newmarket
Auckland 1149
New Zealand
T +64 9 928 5500

Subject	**Parking analysis for New Lynn Primary School and Early Childhood Education Centre at 3094 Great North Road**	**Project Name**	Engineering Review and Transport Services Advice for Designation of New Lynn Primary School
Attention	James Puketapu (Ministry of Education), Chris Horne (Incite Auckland Limited)	**Project No.**	IZ131900
Date	05 December 2019		
Copies to	**Achini Liyanagama, Terri Bell, Andrew Prosser (Jacobs New Zealand Limited)**		

1. Executive summary of car and bicycle parking requirements

A site at 3094 Great North Road, New Lynn has been identified for potential redevelopment as a primary school and Early Childhood Education (ECE) centre.

Based on the assumptions and reference documents noted in this memorandum, an initial estimate of the parking numbers to serve the proposed primary school and Early Childhood Education centre (ECE) is summarised in Table 1-1. These parking rates have been refined based on the information detailed in this memorandum, such as proximity to public transport and alternative parking facilities for employees.

Table 1-1 Summary of parking rates as required by the AUP(OP) and based on the stated assumptions

Activity	Parking type and numbers	
Early childhood education centre	Carparking	10 carparking spaces ▪ Nine standard spaces ▪ One accessible parking space
	Bicycle parking	Three spaces ▪ Two short-stay spaces ▪ One long-stay space
Primary school	Carparking	38 carparking spaces to guide the bulk and location plan (any remaining space can potentially be allocated to staff carparking): ▪ 35 standard visitor carparking spaces ▪ Three accessible spaces
	Drop-off / pick-up zone	Five short-stay spaces

Activity	Parking type and numbers	
	Bicycle parking	39 spaces ▪ Four short-stay spaces ▪ 35 long-stay spaces

These estimated parking requirements are considered appropriate to guide the architectural bulk and location plan and it is recommended that parking requirements are further considered during the Outline Plan of Works phase when further details regarding the school and ECE are known.

2. Introduction

A new primary school is required to accommodate growth from intensification and planned development within and surrounding the New Lynn metropolitan town centre. A site at 3094 Great North Road, New Lynn has been identified for potential redevelopment as a primary school and Early Childhood Education (ECE) centre. Jacobs is currently developing an *Integrated Transportation Assessment* (ITA)[1] to support a Notice of Requirement (NOR) designation for the school.

The *3094 Great North Road – New Lynn Primary School Feasibility Study*[2] was undertaken in April 2019 which proposed a three-storey 'metro-style' school and included a playing field, hard courts and outdoor learning areas. The *Feasibility Study* included 30 car parking spaces, based on the school requirements which were assumed at the time. The network requirements of the school have changed since the *Feasibility Study* was completed to include the provision of an ECE centre and an increase to the masterplan school roll.

The purpose of this memorandum is to set out any assumptions and review the number of carparking spaces for the primary school and ECE as required by the Auckland Unitary Plan (Operative in Part) (AUP(OP)). The conclusions noted in this memorandum will be used to guide parking inputs to ASC Architect's bulk and location plan for the site. It is recommended that the parking assessment is reconfirmed during the Outline Plan of Works stage.

2.1 School catchment

The proposed primary school is to be designed to accommodate an ultimate masterplan roll of 800 primary school students between years 1 – 6. An Early Childhood Education (ECE) centre will also be provided which will accommodate 50 children. The proposed opening date for the school is 2025; however, this date will be driven by the timing and scale of development in New Lynn and generated demand.

The educational facilities are expected to serve students living within the catchment area highlighted in Figure 2-1. As shown in Figure 2-2, the catchment or area of interest for the Primary School covers the following areas:

- New Lynn Business Metropolitan Centre;

[1] This memorandum is to be read in conjunction with the *New Lynn Primary School – Integrated Transportation Assessment Report* Jacobs, unissued to date: *IZ131900-0000-GN-RPT-00001 New Lynn Primary School Integrated Transport Assessment Report.*

[2] ASC Architects, April 2019. *3094 Great North Road – New Lynn Primary School Feasibility Study.*

- Areas to the north, south and west of the school site which are zoned for Terrace Housing and Apartment Buildings (THAB), which permits higher-density living and intensification; and
- General business and light industrial-zoned areas to the north-east of the school site, bounded by the Whau River.

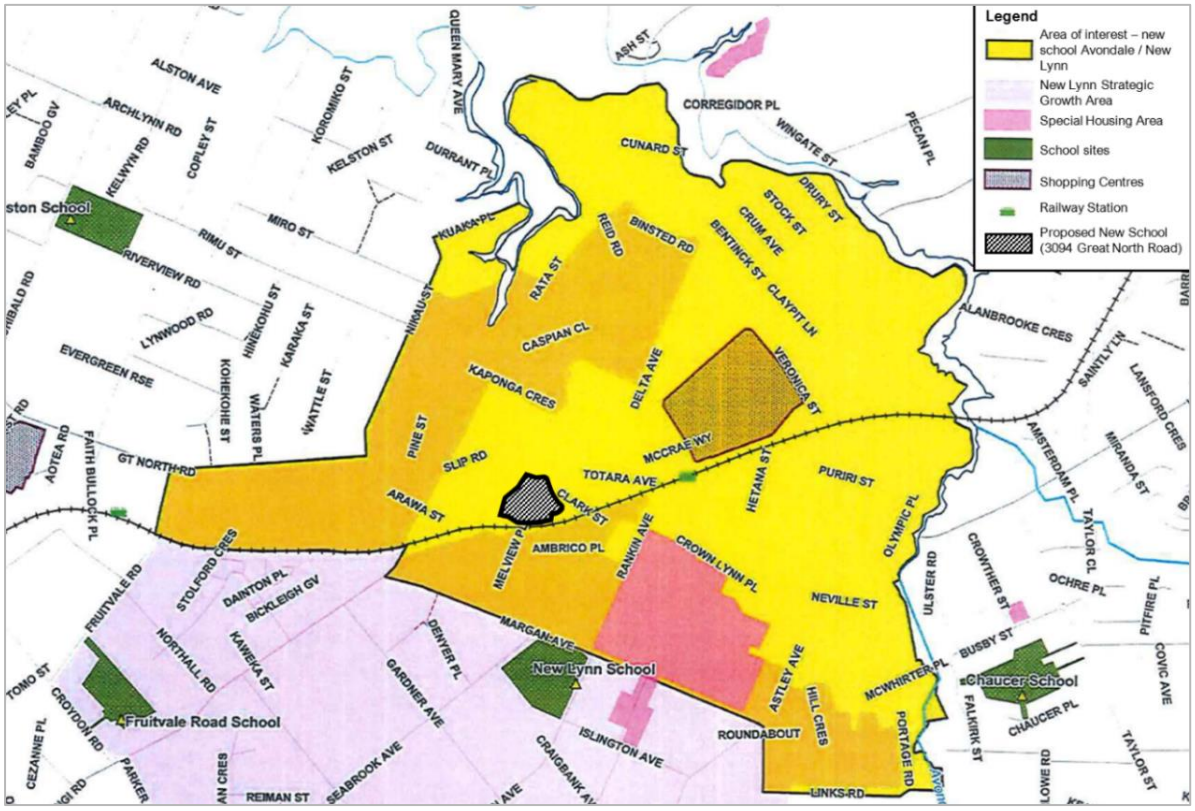


Figure 2-1 Area of interest (catchment) for the proposed New Lynn Primary School[3]

[3] Student catchment area provided by the Ministry of Education, 19th November 2019.

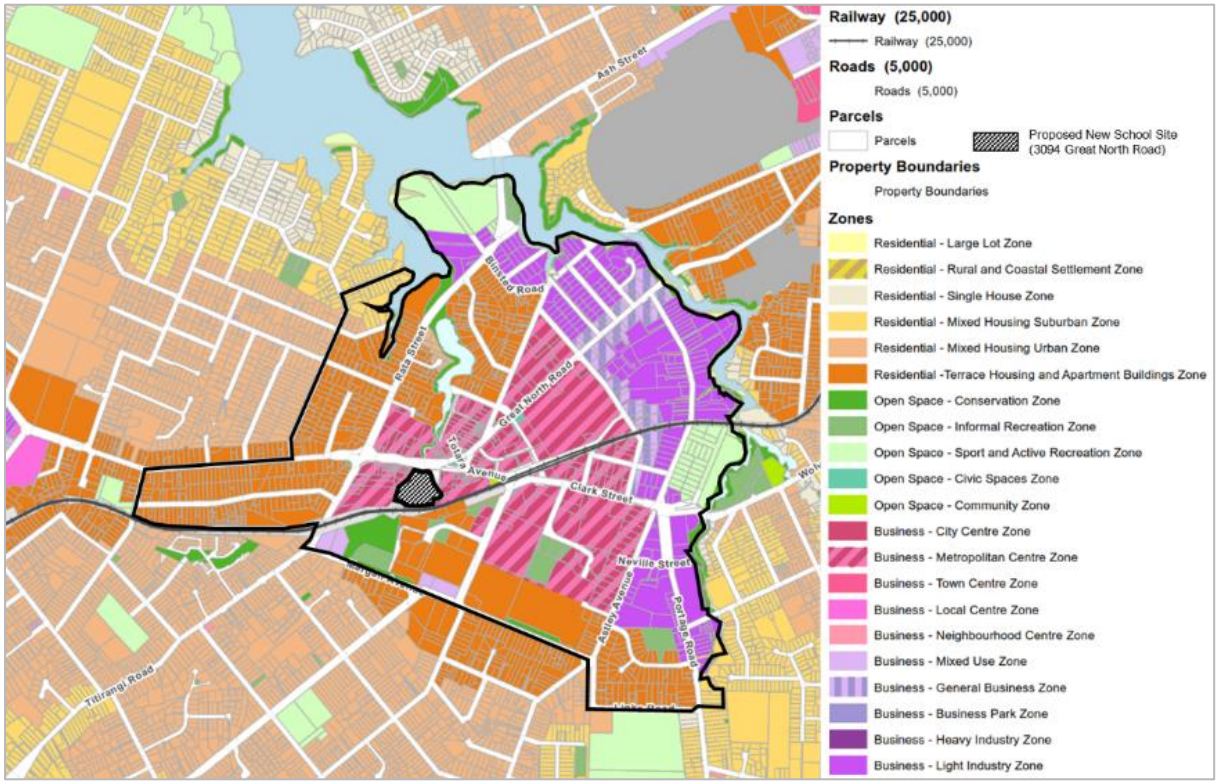


Figure 2-2 AUP(OP) zoning surrounding the proposed school site (3094 Great North Road) [4]

2.2 Parking requirements

Car and bicycle parking spaces (including dedicated accessible parking spaces), will be required on-site for the primary school and the ECE and it is recommended that these facilities are provided in separate locations.

Providing pick-up and drop-off facilities within the site is essential for caregivers who choose to quickly drop-off and pick up students from school. It is recommended that a drop-off and pick-up area is provided within the site and these spaces will be provided in addition to standard carparking spaces. This zone should be clearly marked with passenger loading or 'P2' (two-minute parking) signage so that caregivers are aware they have a maximum time to drop off or collect their children, and that parking or waiting in the zone is not permitted[5]. The pick-up and drop-off zone provides a safe location to quickly set down and pick up students and should be located near the school entrance (on the left-hand side), so that students do not need to cross any roads. These spaces should be monitored between the hours of 8:00 – 9:00am and 2:30 – 3:30pm to ensure that parents are using the pick-up and drop-off zone spaces as intended.

[4] Auckland Council, 2019. *Auckland Council – GeoMaps.* Site retrieved from https://geomapspublic.aucklandcouncil.govt.nz/viewer/index.html

[5] 'P2' or passenger loadings zones are commonly used for pick-up and drop-off zones for Auckland primary schools. These zones keep traffic moving as caregivers can quickly pick-up or drop-off their children; faster than if they were to park and walk into the school grounds. The passenger loading time limit and signage is to be confirmed during the Outline Plan of Works stage.

Provision for an on-site bus bay and turnaround arrangement is required to transport students on school trips, even if no school bus route is provided. Advice on bus vehicle tracking will be provided separately as part of updating the ASC Architects' feasibility plans for the school and access for refuse collection services will also be incorporated. It is proposed that a bus bay arrangement is provided such that conflicts between bus circulation, vehicle movements and the pick-up and drop-off zone, are minimised. One-way vehicle flows through the carpark are also considered desirable for safety and efficiency.

The design of the parking area will be developed at the Outline Plan of Works stage in consultation with Auckland Transport and the Ministry of Education.

3. Primary school parking requirements

3.1 Car parking

3.1.1 Standard carparking requirements

The site at 3094 Great North Road is located within a Business – Metropolitan Centre zone. The minimum and maximum carparking rates which apply to a primary school facility in a Business – Metropolitan Centre zone under the AUP(OP) are summarised in Table 3-1.

Table 3-1 AUP (OP) Parking rate requirements for primary school activities[6]

Activity			Minimum rate	Maximum rate
(T24)	Education facilities	Primary and secondary schools	No minimum	0.5 per FTE employee plus 1 visitor space per classroom

The number of staff / employees and number of classrooms are required to estimate the parking rate requirements for a new primary school.

Staffing requirements are calculated based on the number of students at each year level and the roll type (Māori immersion and non-immersion rolls), as summarised in Table 3-2. This level of detail is not known at this stage; therefore, the following assumptions have been made:

- Carparking requirements are estimated for an ultimate masterplan roll of 800 primary school students;
- A year one teacher-to-student ratio of 1:15 has been adopted for the entire masterplan roll to calculate the curriculum staffing as a conservative estimate which allows for some full-time equivalent (FTE) support staff; and
- The numbers of students are approximately distributed between Years 1 – 6. The student breakdown is also summarised in Table 3-2.

[6] Auckland Council, November 2015. *Auckland Unitary Plan Operative in Part Chapter E – Auckland Wide: E27 Transport.* Table E27.6.2.4 Parking rates – area 2

Based on the conservative teacher to student ratio of one teacher to every 15 students, it is assumed that the primary school will have approximately 54 FTE staff which includes some allowance for support staff members.

Table 3-2 Teacher to student ratios for calculating curriculum staffing[7]

Year of schooling	Number of students (estimated)	Māori immersion roll type teacher to student ratio	Non-Māori immersion roll type teacher to student ratio
Year 1	132	1:15	1:15
Years 2 – 3	268	1:18	1:23
Years 4 – 6	400	1:18	1:29

The number of school classrooms will likely be less than the total number of FTE staff. Based on the Ministry of Education's School Property Guide Calculator, approximately 35 classrooms / teaching spaces will be required for a roll of 800 students.

Based on the assumed number of FTE employees and classrooms required for the proposed primary school, it is estimated that a maximum carparking rate would be 62 spaces (as summarised in Table 3-3).

Table 3-3 Maximum carparking rate requirement for proposed primary school

Parking type	Number of staff / classrooms	Rate	Parking requirement
Staff parking	54 FTE staff	0.5 per FTE employee	27 spaces
Visitor parking	35 classrooms	1 visitor space per classroom	35 spaces
Total primary school standard carparking requirement			**62 spaces**

3.1.2 Drop-off and pick-up zones

Five additional carparking spaces should be provided and designated as a pick-up / drop-off zone. The pick-up / drop-off zone is to be designed to enable efficient traffic circulation and minimise queuing into and within the site.

3.1.3 Accessible carparking requirements

Accessible carparking spaces will be required in addition to the number of standard carparking spaces provided. *AS / NZS 2890.6:2009* requires that the school parking facilities shall provide the number of parking spaces for people with disabilities as specified in Table 3-4.

In addition to the maximum rate of 62 carparking spaces for the primary school, it is recommended that no less than three accessible carparking spaces are provided.

[7] Ministry of Education. *Primary curriculum staffing for Years 1 – 8.* Site accessed at https://www.education.govt.nz/school/funding-and-financials/resourcing/school-staffing/entitlement-staffing/curriculum-staffing/#Primary

Table 3-4 Accessible car parking space requirement[8]

Total number of car spaces	Number of accessible car spaces
1 – 20	Not less than 1
21 – 50	Not less than 2
For every additional 50 car spaces or part thereof	Not less than 1

3.1.4 Summary

The AUP(OP) includes additional standard conditions for primary school parking requirements for school designations. These conditions are typically maintained by the Ministry of Education across all school sites unless there is a site-specific constraint or reason why a modified standard is appropriate.

The conditions for a primary school require on-site carparking to be provided at a standard rate of two parking spaces per new classroom; except in the case where a parking study determines that a lesser level is appropriate.

Table 3-5 provides a summary of the parking rates permitted by the AUP(OP). It can be seen that applying the standard designation conditions for parking would result in the largest number of carparking spaces.

Table 3-5 Summary of primary school carparking rates permitted by the AUP(OP)

Parking type and condition	Number of spaces
Standard carparking spaces - minimum rate	0 spaces[9]
Standard carparking spaces – maximum rate	62 spaces and no less than three accessible spaces
Standard education designation conditions rate for carparking	70 spaces and no less than three accessible spaces

3.2 Bicycle parking facilities

The minimum bicycle parking rates required for a primary school activity under the AUP(OP) are summarised in Table 3-6.

Table 3-6 Required primary school bicycle parking rates[10]

Activity			Minimum rate	Maximum rate
(T94)	Educational facilities	Primary and intermediate schools	1 space plus 1 space per 400 students and FTE employees	1 per 30 students in Year 1 to 5 plus 1 per 15 students in Year 6 to 8 plus 1 per 20 employees

[8] Standards New Zealand, October 2009. *Australian / New Zealand AS / NZS 2890.6:2009 Parking Facilities Part 6: Off-street parking for people with disabilities*
[9] It is noted that al
[10] Auckland Council, November 2016. *Auckland Unitary Plan Operative in Part Chapter E – Auckland Wide: E27 Transport.* Table E27.6.2.5 Required bicycle parking rates

For the purposes of calculating long-stay bicycle parking requirements, it is assumed that the students are evenly distributed between Years 1 – 6 (i.e. approximately 134 students per year group) as this level of detail is not yet known.

3.2.1 Summary

Based on an estimate of 54 FTE staff members and an even distribution of students between Years 1 – 6, it is estimated that four short-stay bicycle parking spaces and 35 long-stay spaces will be required for the proposed primary school, as shown in Table 3-7.

Table 3-7 Secure long-stay bicycle parking requirements for primary school students and staff

Type	Number of staff / students	Rate	Bicycle parking requirement
Short-stay parking	800 students + 54 FTE employees	1 space plus 1 space per 400 students and FTE employees	4 spaces
Years 1 – 5 (long-stay)	667	1:30	23 spaces
Year 6 (long-stay)	133	1:15	9 spaces
School staff (long-stay)	54	1:20	3 spaces
Total bicycle parking requirement for primary school			**4 + 35 = 39 spaces**

4. Early Childhood Education centre parking requirements

4.1 Car parking facilities

4.1.1 Standard carparking requirements

The site at 3094 Great North Road is located within a Business – Metropolitan Centre zone. The parking rate requirements for an ECE centre as required by the AUP(OP) are summarised in Table 4-1, based on a 'care centre' activity.

Table 4-1 AUP (OP) parking rate requirements for ECE activities[11]

Activity		Minimum rate	Maximum rate
(T64)	Care centres	No minimum	No maximum

The following assumptions have been made to calculate the number of early childhood staff / employees:

- All-day early childhood education services (as opposed to sessional care services), to provide a conservative estimate;
- A maximum number of 50 children attending at any one time; and

[11] Auckland Council, November 2015. *Auckland Unitary Plan Operative in Part Chapter E – Auckland Wide: E27 Transport.* Table E27.6.2.3 Parking rates - area 1

- No more than 25 children under two years at any one time are permitted, therefore 25 children will be two years and above[12].

Based on these assumptions and as required by the adult-to-child ratios shown in Table 4-2, it is estimated that a minimum of eight staff members will be required for the ECE centre at any one time.

Table 4-2 Minimum adult-to-child ratios for all-day early childhood education and care centres[13]

Age of children attending	Number of children attending	Minimum staffing
Under 2 years old	1 – 5	1
	6 – 10	2
	11 – 15	3
	16 – 20	4
	21 – 25	**5**
2 years old and over	1 – 6	1
	7 – 20	2
	21 – 30	**3**
	31 – 40	4

There are no minimum or maximum parking rates within this zone set out in the AUP(OP), as shown in Table 4-1. In the absence of parking rate requirements, the following minimum rate (refer to Table 4-3), is considered appropriate and has been adopted for the ECE centre. These rates apply to locations which are not zoned as Business – Metropolitan Centre, Town Centre, Local Centre or Mixed Use zones or are not specified in Standard E27.6.2(5).

Table 4-3 Parking rate requirements for ECE activities for locations not specified by Standard E27.6.2(5)[14]

Activity		Minimum rate	Maximum rate
(T64)	Care centres	0.10 per child or other person, other than employees, plus 0.5 per full-time equivalent (FTE) employee	No maximum

The minimum requirement for eight staff and 50 children is a total of nine carparking spaces as summarised in Table 4-4.

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[12] New Zealand Government, 2008. *Education (Early Childhood Services) Regulations 2008: Schedule 3 – Service-size (maximum).* Site accessed at: http://www.legislation.govt.nz/regulation/public/2008/0204/latest/DLM1412642.html#DLM1412642

[13] New Zealand Government, 2008. *Education (Early Childhood Services) Regulations 2008: Schedule 2 – Adult-to-child ratios (minimum).* Site accessed at: http://www.legislation.govt.nz/regulation/public/2008/0204/latest/DLM1412637.html#DLM1412637

[14] Auckland Council, November 2015. *Auckland Unitary Plan Operative in Part Chapter E – Auckland Wide: E27 Transport.* Table E27.6.2.4 Parking rates – area 2

Table 4-4 Total carparking requirement for the proposed ECE activity

Parking type	Number of staff / children	Rate	Parking requirement
Child drop off / pick up	50 children	0.10 per child or other person (other than employees)	5 spaces
Staff parking	8 staff	0.5 per FTE employee	4 spaces
Total carparking requirement for ECE			**9 spaces**

4.1.2 Accessible carparking requirements

Accessible carparking spaces will be required in addition to the number of standard carparking spaces provided for the ECE centre. *AS / NZS 2890.6:2009 Parking Facilities Part 6: Off-street parking for people with disabilities*[15] requires that facilities shall provide the number of parking spaces for people with disabilities as specified in Table 4-5.

Based on a total requirement for nine carparking spaces for the ECE centre, it is recommended that one accessible carparking space is provided (in addition).

Table 4-5 Accessible car parking space requirement[16]

Total number of car spaces	Number of accessible car spaces
1 – 20	Not less than 1
21 – 50	Not less than 2
For every additional 50 car spaces or part thereof	Not less than 1

4.1.3 Summary

The AUP(OP) also includes additional standard conditions for ECE parking requirements for education designations. Similarly, these conditions are typically maintained by the Ministry of Education across all school sites unless there is a site-specific constraint or reason why lesser level is appropriate.

These conditions require that on-site carparking is provided at a rate of one space per every 10 children that the facility is designed or licensed to accommodate (50 children), plus one space per each full time equivalent staff member required (eight staff members) for the license or design capacity of the centre. In this case, the ECE is designed to accommodate 50 children and based on child to teacher ratios summarised in section 4.1.1, it is assumed that eight full-time staff would be required.

Table 4-6 provides a summary of the parking rates permitted by the AUP(OP). It can be seen that applying the standard designation conditions for ECE carparking would result in the largest number of carparking spaces.

[15] Standards New Zealand, October 2009. *Australian / New Zealand AS / NZS 2890.6:2009 Parking Facilities Part 6: Off-street parking for people with disabilities.*
[16] Standards New Zealand, October 2009. *Australian / New Zealand AS / NZS 2890.6:2009 Parking Facilities Part 6: Off-street parking for people with disabilities.*

Table 4-6 Summary of ECE carparking rates permitted by the AUP(OP)

Parking type and condition	Number of spaces
Standard carparking spaces - minimum rate	0 spaces[17]
Standard carparking spaces – maximum rate (Note: no maximum rate for a care facility within a Business – Metropolitan Centre zone)	Nine standard spaces and no less than one accessible space (total of 10 spaces)
Standard education designation conditions rate for carparking	13 standard spaces and no less than one accessible space (total of 14 spaces)

4.2 Bicycle parking facilities

The minimum bicycle parking requirements as set out in the AUP(OP) are summarised in Table 4-7.

Table 4-7 Bicycle parking rates required for early childhood education activities[18]

Activity		Visitor (short-stay) minimum rate	Secure (long-stay) minimum rate
(T93)	Care centre	1 space plus 1 space per 50 people to be accommodated	1 space per 10 FTE employees

4.2.1 Summary

Based on an estimate of eight FTE staff members and an ECE roll of 50 children, it is estimated that two short-stay bicycle parking spaces and one long-stay space will be required for the proposed ECE, as shown in Table 4-8.

Table 4-8 Secure long-stay bicycle parking requirements for ECE staff members and caregivers

Parking type	Number of staff / children	Rate	Bicycle parking requirement
Short-stay parking	50 children	1 space plus 1 space per 50 people to be accommodated	2 spaces
Long-stay parking	8 FTE staff	1 space per 10 FTE employees	1 space
Total bicycle parking requirement for ECE			**3 spaces**

5. Refinement of standard carparking requirements

Based on the available site area and the previous *3094 Great North Road – New Lynn Primary School Feasibility Study*[19], providing up to 73 carparking spaces for the primary school, 13 spaces for the ECE

[17] It is noted that although no standard carparking spaces would be provided with adopting the minimum parking rate, accessible carparking spaces would still be provided.
[18] Auckland Council, November 2016. *Auckland Unitary Plan Operative in Part Chapter E – Auckland Wide: E27 Transport.* Table E27.6.2.5 Required bicycle parking rates
[19] ASC Architects, April 2019. *3094 Great North Road – New Lynn Primary School Feasibility Study.*

as well as a school pick-up and drop-off zone would severely impact on the ability to provide fields, hardcourts and outdoor learning spaces within the site boundary.

There is the potential to reduce the number of carparks provided on-site (to some extent), by improving the walking and cycling accessibility of the school and due to the site's proximity to the New Lynn public transport hub. This is considered greater than the potential to reduce the parking requirements of the ECE centre as walking school buses, bike trains and other school travel management plans are typically targeted for older students. It is strongly recommended that any refinements to the numbers of carparks are not applied to accessible parking spaces or pick-up and drop-off zones.

A pre-application meeting was held on the 27th November 2019 with representatives from the Ministry of Education, Auckland Council, Auckland Transport and the project team and the parking requirements for the Primary School and ECE were discussed. Auckland Council and Auckland Transport were generally supportive of reducing the number of carparks provided on-site under the AUP(OP), with justification.

Parking requirements for the primary school and ECE can be broadly grouped as follows:

- Parking for staff members / employees – typically long-stay or all-day parking;
- Parking for school visitors – typically short-stay (not all-day) parking for parents, service and loading vehicles; and
- Pick-up and drop off zones – typically very short-stay (P2)[20] parking for parents and caregivers to pick-up or drop-off students.

All students within the catchment zone for the school and ECE will live within 1.5km of the site (as shown in Figure 2-1) and as such, walking to school is likely to be feasible for a large proportion of students. This has the potential to reduce school-related vehicular trips, traffic impacts and visitor parking requirements.

It is considered that the greatest potential for reducing the number of carparks is to restrict the number of long-stay spaces allocated to staff parking. The New Lynn Metropolitan Centre is highly accessible by public transport (train and bus) services, with the New Lynn Transport Hub located only 450m or a 6-minute walk from the school site (see Figure 5-1). Based on 2013 Census data for the Whau Local Board Area, approximately 8% of the population working within the 'education and training' ANZSIC06 industry division used public transport as their main means of travel to work (refer to Table 5-1). Given the location of the school site, it is considered reasonable to assume that a higher public transport mode share for staff members could be achieved.

[20] The passenger loading time limit and signage is to be confirmed during the Outline Plan of Works stage.

Table 5-1 Mode share for main means of travel to school for students and staff members[21,22]

Staff / students	Main means of travel (% mode share)				
	Vehicle – driver	Vehicle – passenger	Public transport	Walk/cycle	Other
Primary school students (800 students)	-	54%	3%	42%	1%
Education industry employees within the Whau Local Board area (70 employees)	70%	4%	8%	6%	12%[23]

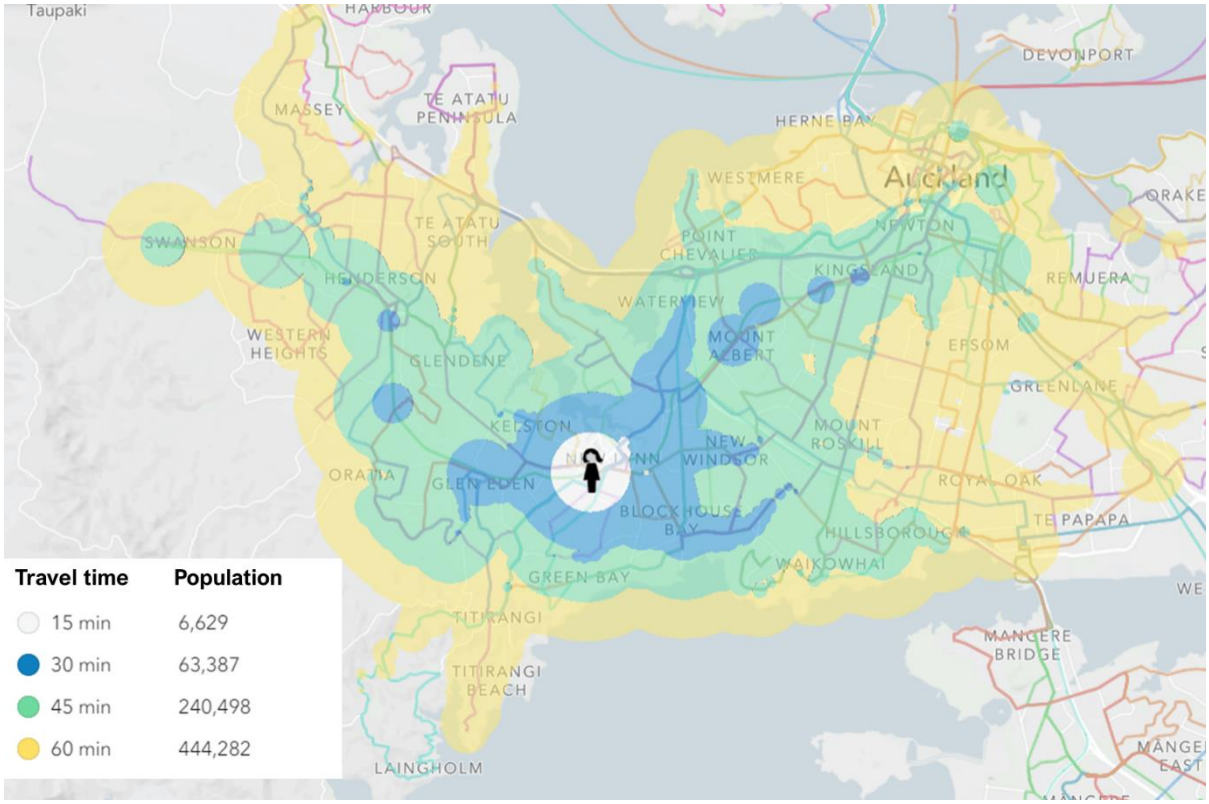

Figure 5-1 Accessibility of the site by existing public transport services[24]

[21] Ministry of Transport, 2014. *New Zealand Household Travel Survey: HD013 - Mode share of journeys to school by region, aged 5-12 - 2010/14 (%).*
[22] Statistics New Zealand, 2013. *Main means of travel to work by industry (ANZSIC06 division), for the employed census usually resident population count aged 15 years and over, 2013 Census.*
[23] 'Other' includes 'worked from home', 'did not work today' and 'motor cycle or power-bike' travel modes.
[24] Auckland Transport, 2019. *New Network – accessibility by public transit.* Site retrieved from https://platform.remix.com/map/

For these reasons, it is proposed that that a reduced level of staff parking spaces, and the maximum number of visitor parking spaces for a primary school (as set out in the AUP(OP)), are adopted for the purposes of developing the bulk and location study (i.e. 35 standard carparking spaces). Any additional space available within the site could then be allocated to long-stay staff parking.

There are several alternative parking facilities for employees who choose to travel by private vehicle which are located within close proximity to the site. The majority of parking within the central New Lynn area is time-restricted or paid parking (as shown in Figure 5-2), and free, all-day on-street parking is provided on the edge of the town centre.

Figure 5-2 Off-street public carparking facilities within the New Lynn central area[25]

6. Summary of car and bicycle parking requirements

Based on the assumptions and reference documents noted in this memorandum, an initial estimate of the parking numbers to serve the proposed ECE and primary school activities is summarised in Table 6-1.

These estimated parking requirements are considered appropriate to guide the development of an architectural bulk and location plan and it is recommended that parking requirements are further

[25] Auckland Transport, March 2013. *New Lynn Parking Guide.* Retrieved from https://at.govt.nz/media/312464/new-lynn-parking-guide.pdf (site accessed 27/11/2019).

considered during the Outline Plan of Works phase when further details regarding the school and ECE are known.

Table 6-1 Summary of parking rates as required by the AUP(OP) and based on the stated assumptions

Activity	Parking type and numbers	
Early childhood education centre	Carparking	10 carparking spaces ▪ Nine standard spaces ▪ One accessible parking space
	Bicycle parking	Three spaces ▪ Two short-stay spaces ▪ One long-stay space
Primary school	Carparking	38 carparking spaces to guide the bulk and location plan (any remaining space can potentially be allocated to staff carparking): ▪ 35 standard visitor carparking spaces ▪ Three accessible spaces
	Drop-off / pick-up zone	Five short-stay spaces
	Bicycle parking	39 spaces ▪ Four short-stay spaces ▪ 35 long-stay spaces

Appendix E. SIDRA Modelling Memorandum

New Lynn Primary School - 3094 Great North Road Designation

Integrated Transportation Assessment (ITA) - SIDRA Modelling Memorandum

IZ131900-0000-CT-MEM-0002 | Revision 3.0

15 May 2020

Ministry of Education

Document history and status

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New Lynn Primary School - 3094 Great North Road Designation

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Contents

1. Introduction

1.1 Background

Jacobs has been engaged by the Ministry of Education (MOE) to prepare an Integrated Transportation Assessment (ITA) for a proposed new primary school and early childhood education center (ECE) at 3094 Great North Road, New Lynn, Auckland, as shown in Figure 2-1.

As part of the ITA, SIDRA modelling was undertaken to assess the impact of the development on the site's proposed access way and the performance of three surrounding intersections as listed below:

- Clark Street/ Cambridge Lane (site accessway);
- Clark Street/ Rankin Avenue/ Totara Avenue;
- Clark Street/ Great North Road; and
- Great North Road/ Titirangi Road / Rata Road.

Jacobs has proposed to model the site's access and surrounding three intersections as highlighted in Figure 2-1 due to the existing traffic volumes; the complex nature of the intersections; and close proximity of the intersections to each other and to the site. The modelling assessment was undertaken to confirm the operational performance of the existing intersections for existing and post-development conditions ('masterplan roll scenario').

The modelling of the intersections has been undertaken using SIDRA INTERSECTION Version 8.0. The SIDRA model, once developed, was calibrated using SCATS data (including traffic counts and signal phasing / timings) and validated against travel time data extracted from the Google's Direction API. The validated base models have been used to assess the impacts of additional traffic generated by the proposed development on the site access and surrounding three major intersections. For this purpose, the base year model results were compared with the future masterplan results. Queue lengths, journey time, average delay and level of service (LoS) performance parameters were used to assess the network performance among base model and future scenario models.

This memorandum summarises the SIDRA traffic modelling, methodology, assumptions used and results of the anticipated performance of the junctions. These junctions have been assessed against existing 2019 demands and estimated demands generated by the future masterplan scenario for the proposed development.

1.2 Base Model Objectives

The objectives of this base model development are outlined as follows:

1) Build the base year (2019) SIDRA models for weekday AM and PM school peak hours (8.00am - 9.00am and 2.30pm - 3.30pm);
2) Analyse the SCATS data to obtain the intersections turning proportions and use Auckland Transport's video footage of intersections (where available), to obtain turning proportions for lanes with shared movements;
3) Calibrate and validate the SIDRA models to provide a baseline for the future scenario assessment; and
4) Use the validated model to assess the impact of the proposed development with future traffic flows. i.e. analyse traffic generation from the proposed school and ECE development and model predicted demands in the future year scenario and likely distributions onto the local road network for the AM and PM school peak hours.

1.3 Scope of the Report

The report comprises five chapters and is structured as follows:

- Chapter 2: Base Model Development;
- Chapter 3: Base Model Calibration and Validation;

- Chapter 4: Future Scenario Assessment; and
- Chapter 5: Summary and Conclusions.

2. Base Model Development

Figure 2-1 shows the proposed primary school and ECE site and key intersections within the study area.

The purpose of this analysis is to examine the impact of the proposed development (new primary school and ECE) at 3094 Great North Road, New Lynn, on the site's proposed accessway and performance of three surrounding intersections. The intersection assessment has been undertaken using SIDRA INTERSECTION Version 8. The base models were developed and validated based on 2019 weekday AM and PM school peak hours and then used to assess the future operational performance with the proposed development in place.

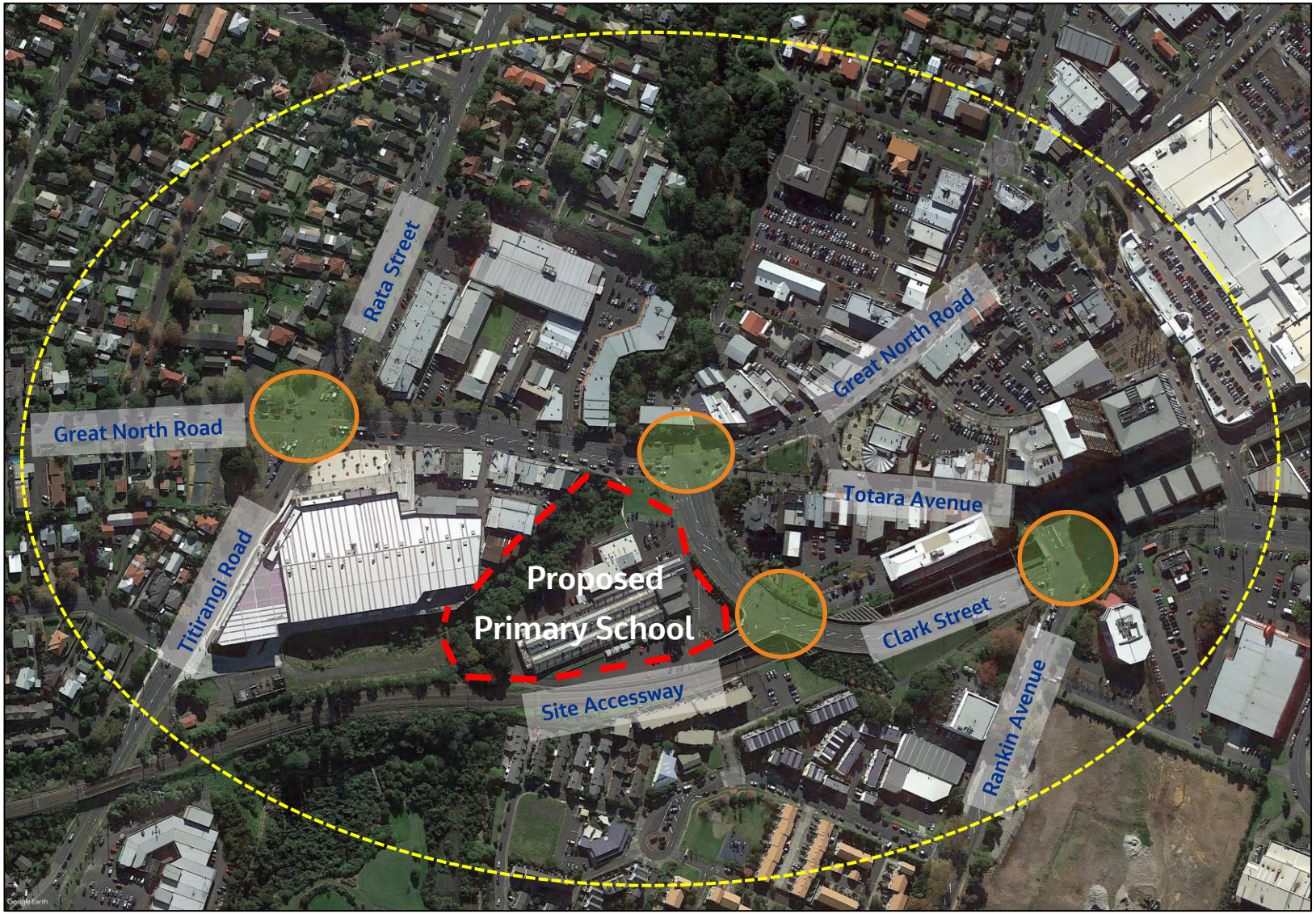

Figure 2-1: Proposed primary school site and key intersections

2.1 Methodology

Figure 2-2 presents a flowchart detailing the methodology used for the SIDRA model build.

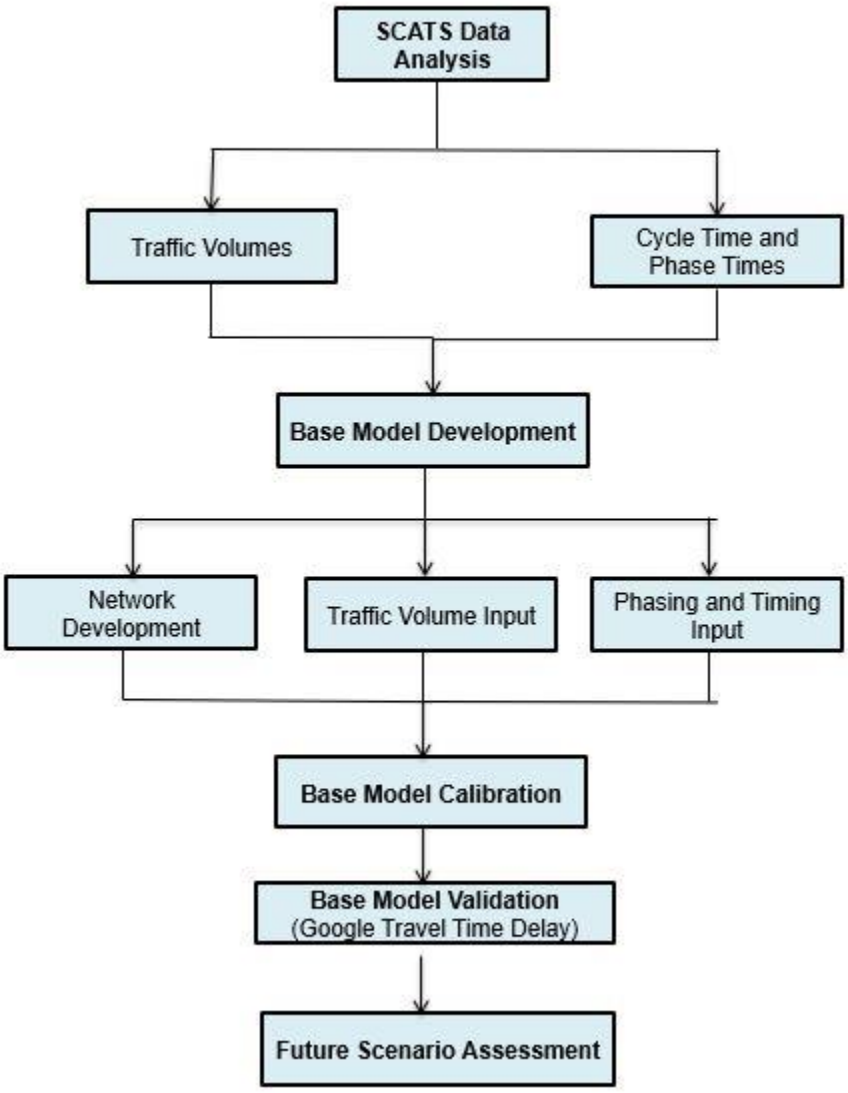

Figure 2-2: Methodology adopted for the model development

2.2 Model Development

All four intersections have been modelled in detail using SIDRA to provide a representation of traffic conditions for the 2019 year which provides a reliable reference for assessing the future scenario. The models have been built to simulate the weekday AM and PM school peak hours (8:00am - 9:00am and 2:30pm -3:30pm, respectively), when school traffic is typically at its highest. Figures 2-3, 2-4, 2-5 and 2-6 show the SIDRA intersection layouts for the following intersections:

- Clark Street / Cambridge Lane (site accessway);
- Clark Street / Rankin Avenue / Totara Avenue;
- Clark Street / Great North Road; and
- Great North Road/ Titirangi Road / Rata Road.

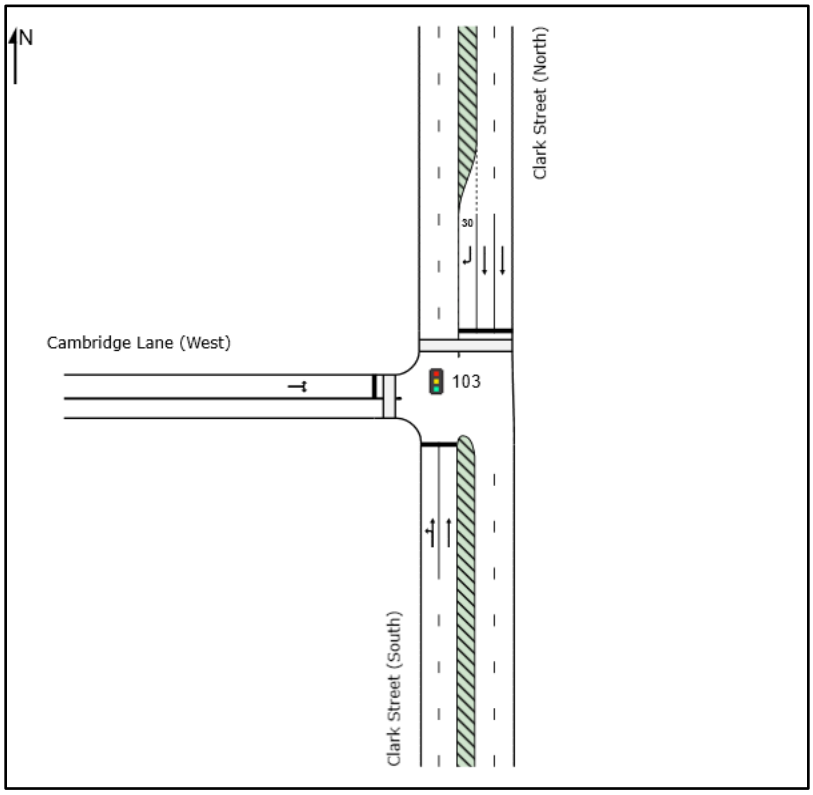

Figure 2-3: SIDRA intersection layout - Clark Street / Cambridge Lane (site accessway)

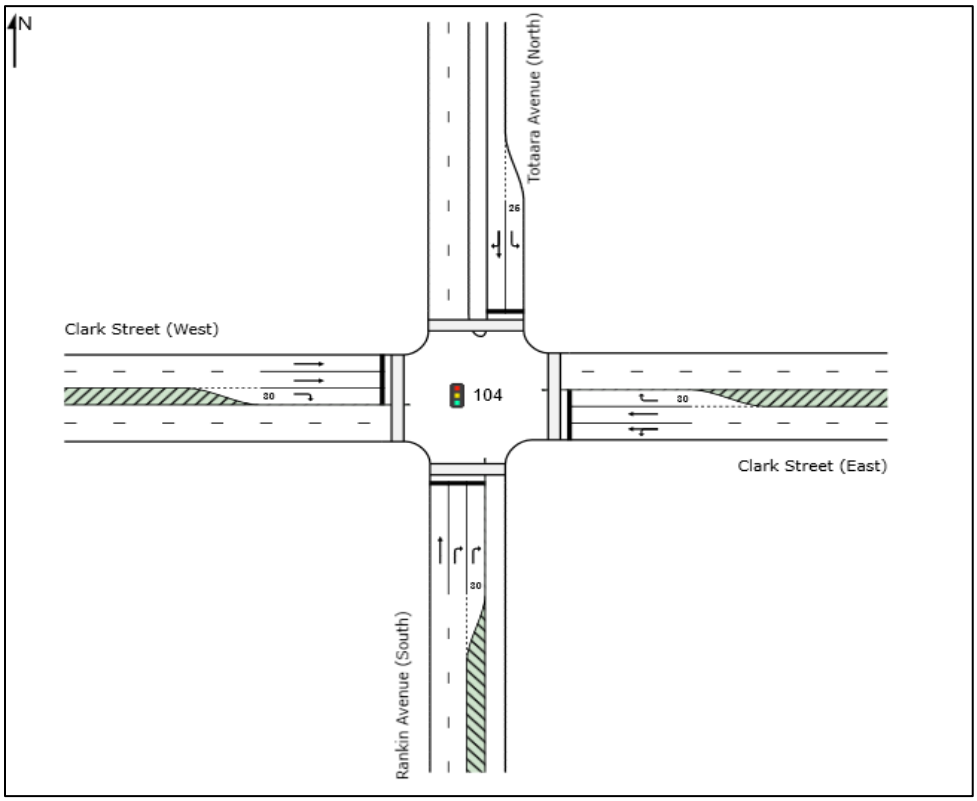

Figure 2-4: SIDRA intersection layout - Clark Street / Rankin Avenue / Totara Avenue

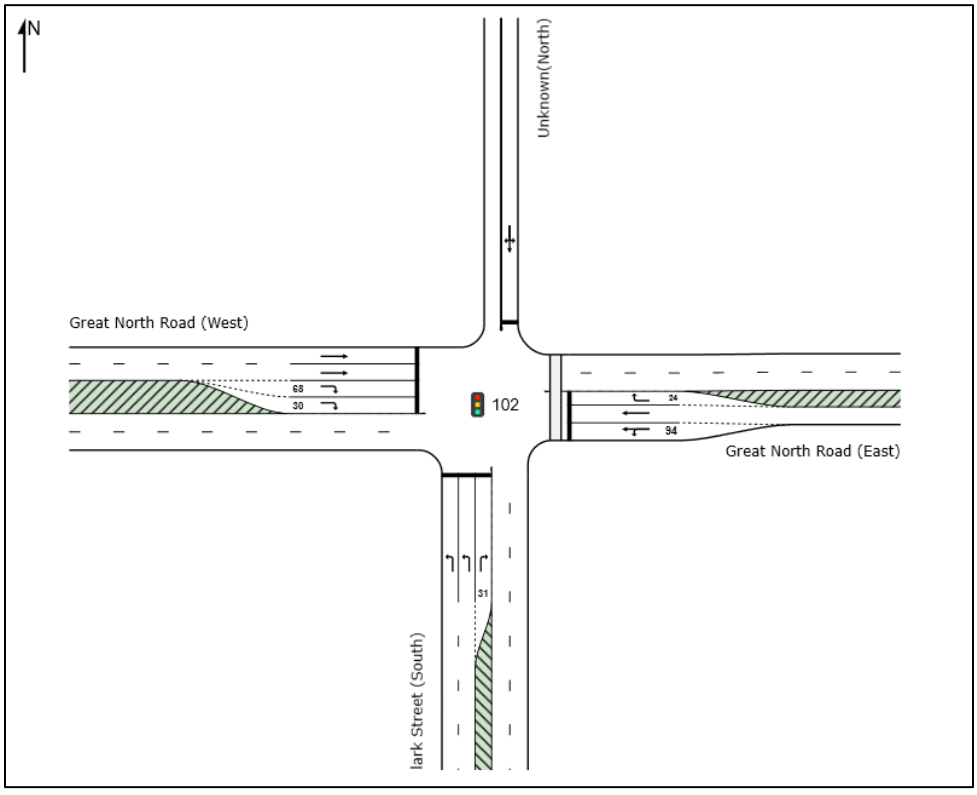

Figure 2-5: SIDRA intersection layout - Clark Street / Great North Road

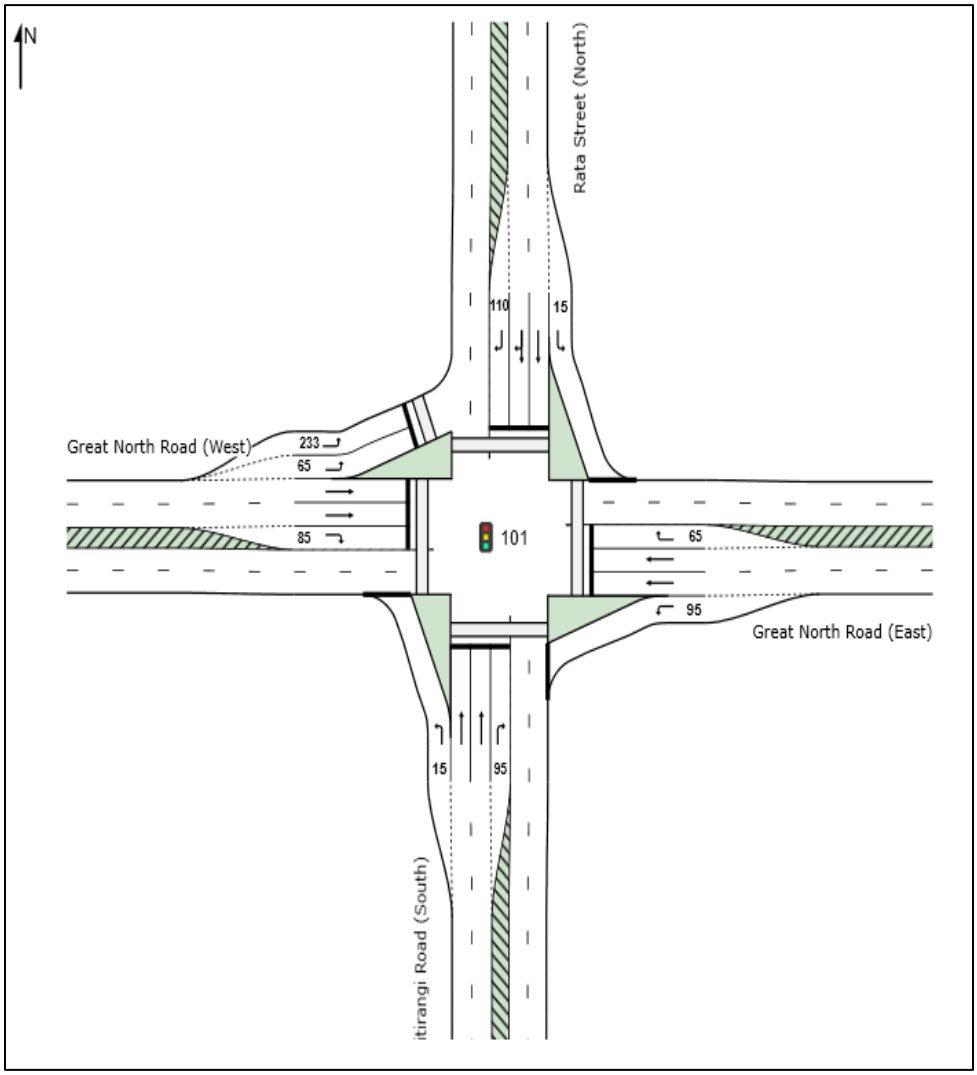

Figure 2-6: SIDRA intersection layout - Great North Road / Titirangi Road / Rata Road

2.3 Traffic Demand

SCATS data was available for all the four intersections, which consists of detector traffic counts and signal phasing / timing details and was used as an input into the base SIDRA models. Video footage was also available for two of the four intersections (including the Great North Road / Titirangi Road / Rata Street intersection and the Clark Street / Great North Road intersection), which was used to obtain turning proportions for lanes with shared movements, listed below.

- Rata Road / Great North Road (Rata Road north-approach right turn movement);
- Clark Street / Great North Road (Great North Road east-approach left turn movement);
- Clark Street / Cambridge Lane (Clark Street south-approach left turn and Cambridge Lane left turn / right turn); and
- Clark Street / Rankin Avenue/ Totara Avenue (Totara Avenue north-approach right turn, and Clark Street east-approach left turn).

2.4 Signal Timings

Phasing and timings were extracted from the SCATS data provided by Auckland Transport. The SCATS data was provided for the work week from Monday, 12 August 2019 – Friday, 16 August 2019 and the average volumes were used. The data includes:

- Detector traffic counts;
- Phasing diagram; and
- Signal timings summary for 15 minutes interval.

15-minute interval SCATS data was summarised to get the average hourly phase timings and phase frequencies for both AM and PM peaks. Figure 2-6 to Figure 2-9 show the adopted phasing for the SIDRA modelling for the four intersections. Yellow and all-red times were calculated as per Austroads guidelines. User-given phase times were used for the base modelling.

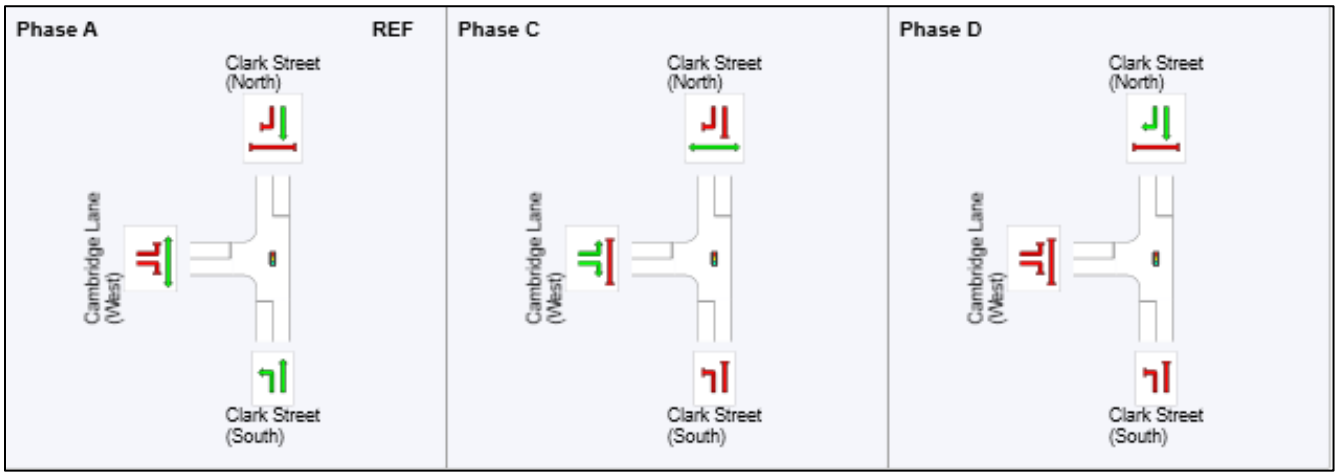

Figure 2-6: SIDRA intersection - Clark Street / Cambridge Lane – adopted phasing arrangement

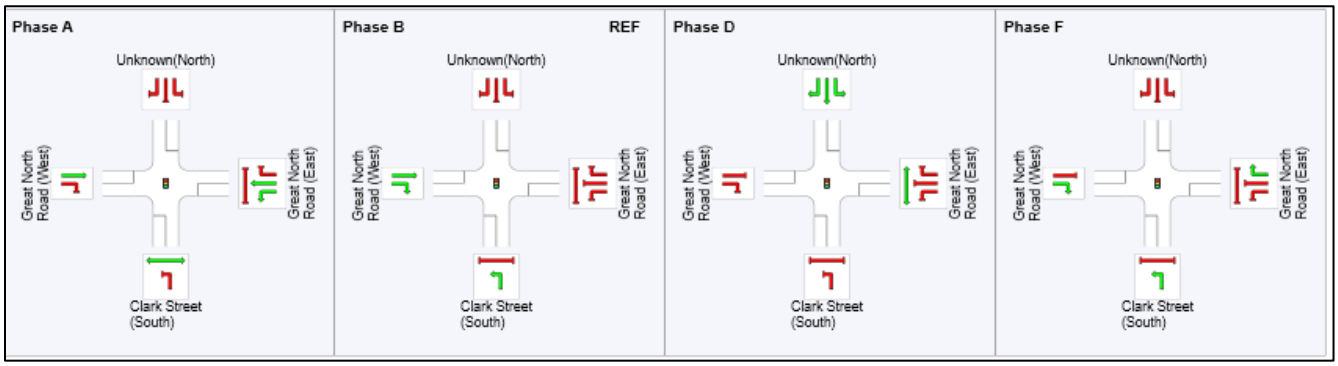

Figure 2-7: SIDRA intersection - Clark Street / Great North Road – adopted phasing arrangement

Figure 2-8: SIDRA intersection - Clark Street / Rankin Avenue / Totara Avenue – adopted phasing arrangement

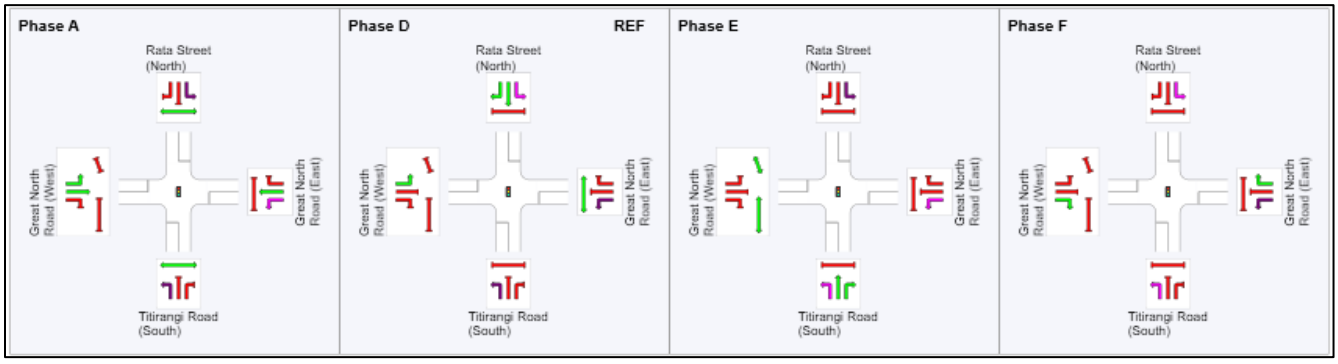

Figure 2-9: SIDRA intersection - Great North Road / Titirangi Road / Rata Street – adopted phasing arrangement

2.5 Base Model Assumptions

Assumptions made for the base model development and calibration / validation are as follows:

- SCATS detector counts show the total, uncategorised number of vehicles for each lane. Hence, the percentages of heavy commercial vehicles (HCVs) were obtain from Auckland Transport's traffic survey data (https://at.govt.nz/about-us/reports-publications/traffic-counts/). Table 2.1 presents the % of heavy vehicles for each approach of the intersections.
- From the intersection video footage, percentages of left or right turning volumes were calculated for the shared lanes.
- From the SCATS data, it has been identified that detector 6 on the slip lane is faulty at the Great North Road / Titirangi Road / Rata Street intersection. Hence, manual traffic counts were undertaken for both AM and PM peak periods and were used in place of the counts shown in the SCATS data.
- From the intersection detector maps, it was identified that the north and south approaches at the Clark Street/ Rankin Avenue/ Totara Ave intersection have two detectors in each lane. Following an inspection of the site it was noted that the rear detector for each lane lay outside the vehicle turning path (i.e. vehicles would not necessarily pass over the detector and the SCATS data was reporting unusually low traffic volumes). Therefore, the traffic volumes reported by the detector located closest to the limit line have been used in the analysis.
- For the base modelling, user given phase times were used.
- Due to the intersections being close to each other and the presence of other minor intersections and pedestrian crossings in the vicinity; queue lengths would be unlikely to be usable. Therefore, the models were not intended to be validated against queue lengths and were instead validated against Google delayed travel times extracted from the Directions API.
- The rest of the model parameters were kept as default values.

Table 2.1: % of heavy commercial vehicles (HCV) summary

Intersection Name	Approach Name	Heavy Vehicles (%)
Great North Road / Titirangi Road / Rata Road	Great North Road	8%
	Rata Street	6%
	Titirangi Road	5%
Clark Street / Cambridge Lane (site accessway)	Clark Street	8%
	Cambridge Lane (site access)	10%
Clark Street / Rankin Avenue / Totara Avenue	Rankin Avenue	5%
	Totara Avenue	31%
	Clark Street	8%
Clark Street / Great North Road	Great North Road	8%
	Clark Street Extension	8%

3. Base Model Validation

3.1 Model Calibration

Calibration is the process of adjusting the model network parameters such that it reflects the observed site conditions. Average phasing / timings from SCATS were adjusted to reflect site conditions.

3.2 Model Validation

The base model was validated based on travel time. As there were no travel time surveys carried out, it was decided to validate the base models against Google travel time, extracted from the Google Directions API.

The sum of modelled average approach delays and free flow travel time was compared with Google travel times to validate the model for the four intersections. As per criteria from the Transport Model Development Guidelines developed by the NZ Transport Agency[1] (for models Type F – Intersection / Short Corridor), 90% of the approaches should have a difference between observed and modelled travel times of less than 15% or 60 seconds (if higher) to be fit for purpose. Table 3.1 to Table 3.8 presents the comparison between the modelled and observed travel times for both AM and PM peak models. Given the short approaches and small travel times for all junctions, the 60 seconds criterion was used as some approaches showed large difference in relative % terms, but with absolute differences only amounting to a few seconds.

The results below indicate that the journey times for all the approaches during AM and PM peaks meet the requirements set out in the validation criteria.

Table 3.1: Travel time summary for Clark Street/ Cambridge Lane (site accessway) – AM peak

Approach Name	Travel Distance	Observed Travel Time (sec)	Approach Delay (sec)	Free Flow Travel Time (sec)	Modeled Travel Time (sec)	Diff < 60 sec (modelled – observed)
Clark Street (North)	89	10	2	6	9	-1
Clark Street (South)	209	23	4	15	19	-4

Table 3.2: Travel time summary for Clark Street/ Cambridge Lane (site accessway) – PM peak

Approach Name	Travel Distance	Observed Travel Time (sec)	Approach Delay (sec)	Free Flow Travel Time (sec)	Modeled Travel Time (sec)	Diff < 60 sec (modelled – observed)
Clark Street (North)	89	11	6	6	12	1
Clark Street (South)	209	29	5	15	20	-9

[1] https://www.nzta.govt.nz/assets/resources/transport-model-development-guidelines/docs/tmd.pdf

Table 3.3: Travel time summary for Clark Street/ Rankin Avenue/ Totara Avenue – AM peak

Approach Name	Travel Distance	Observed Travel Time (sec)	Approach Delay (sec)	Free Flow Travel Time (sec)	Modeled Travel Time (sec)	Diff < 60 sec (modelled – observed)
Rankin Avenue (South)	451	82	69	32	101	19
Totara Avenue (North)	223	52	48	16	64	12
Clark Street (East)	99	18	18	6	23	5
Clark Street (West)	199	36	35	12	47	11

Table 3.4: Travel time summary for Clark Street/ Rankin Avenue/ Totara Avenue – PM peak

Approach Name	Travel Distance	Observed Travel Time (sec)	Approach Delay (sec)	Free Flow Travel Time (sec)	Modeled Travel Time (sec)	Diff < 60 sec (modelled – observed)
Rankin Avenue (South)	451	81	49	32	82	1
Totara Avenue (North)	223	73	52	16	68	-5
Clark Street (East)	99	23	34	6	40	17
Clark Street (West)	199	31	30	12	42	11

Table 3.5: Travel time summary for Clark Street/ Great North Road – AM peak

Approach Name	Travel Distance	Observed Travel Time (sec)	Approach Delay (sec)	Free Flow Travel Time (sec)	Modeled Travel Time (sec)	Diff < 60 sec (modelled – observed)
Clark Street (South)	101	12	8	7	15	3
Great North Road (East)	590	135	67	42	110	-25
Great North Road (West)	70	9	6	5	11	2

Table 3.6: Travel time summary for Clark Street/ Great North Road – PM peak

Approach Name	Travel Distance	Observed Travel Time (sec)	Approach Delay (sec)	Free Flow Travel Time (sec)	Modeled Travel Time (sec)	Diff < 60 sec (modelled – observed)
Clark Street (South)	101	17	12	7	20	3

Approach Name	Travel Distance	Observed Travel Time (sec)	Approach Delay (sec)	Free Flow Travel Time (sec)	Modeled Travel Time (sec)	Diff < 60 sec (modelled – observed)
Great North Road (East)	590	199	113	42	155	-44
Great North Road (West)	70	12	8	5	13	1

Table 3.7: Travel time summary for Great North Road/ Titirangi Road/ Rata Road – AM peak

Approach Name	Travel Distance	Observed Travel Time (sec)	Approach Delay (sec)	Free Flow Travel Time (sec)	Modeled Travel Time (sec)	Diff < 60 sec (modelled – observed)
Titirangi Road (South)	143	67	105	9	114	47
Rata Street (North)	221	43	57	13	70	27
Great North Road (East)	156	31	34	9	43	12
Great North Road (West)	655	114	92	39	131	17

Table 3.8: Travel time summary for Great North Road/ Titirangi Road/ Rata Road – PM peak

Approach Name	Travel Distance	Observed Travel Time (sec)	Approach Delay (sec)	Free Flow Travel Time (sec)	Modeled Travel Time (sec)	Diff < 60 sec (modelled – observed)
Titirangi Road (South)	143	42	40	9	48	6
Rata Street (North)	221	50	50	13	63	13
Great North Road (East)	156	47	42	9	51	4
Great North Road (West)	655	74	36	39	76	2

4. Future Model Assessment

The proposed development includes a proposed new primary school and ECE at 3094 Great North Road, New Lynn. The objective of the assessment is to assess the impact of the proposed development on the site's proposed accessway and performance of three surrounding intersections.

The future models were tested using existing 2019 demands and post development conditions used estimated demands based on traffic generation from the proposed development and likely distribution onto the local road network in AM and PM school peak hours. Refer to the Draft New Lynn Primary School ITA report[2] for further details on the traffic distribution and trip generation assumptions.

4.1 Performance Evaluation and Results Comparison

Average delays, LOS and 95% back of queue length parameters were used to assess the overall operational performance of the intersections for existing and post development conditions.

Table 4.1 to Table 4.8 presents the 95% back of queue and LOS performance comparison for AM and PM peaks (respectively) for the base and future model ('Scenario 1') scenarios. The observations made from the comparison of results are noted in the following sections.

4.1.1 Clark Street / Cambridge Lane intersection (site access)

The base models are operating with a LOS A for both AM and PM peaks, whereas the future model scenario is operating with a LOS D during both peak hours. The intersection is experiencing the maximum traffic impact from the development traffic as this is the access to the school. Currently, the signal is running with a higher cycle length during the peak periods which contributes to the delay for non-pivot phase movements (Cambridge Lane and right turn for southbound Clark Street movements). For the future model scenarios, the timings for the pivot phase were reduced and optimised which eventually reduced the delays for these Cambridge Lane and Clark Street right turn movements. Overall, the intersection is performing within desired LOS D.

Table 4.1: 95% back of queue lengths and LOS comparison for Clark Street/ Cambridge Lane (site accessway) – AM peak

Approach Name	Lane No.	95% Queue (Veh)		Level of Service (LoS)	
		Base Model	Scenario 1	Base Model	Scenario 1
Clark Street (South)	Lane 1 LT	4	18	LOS A	LOS E
	Lane 2 TH	4	19	LOS A	LOS E
Clark Street (North)	Lane 2 TH	4	13	LOS A	LOS B
	Lane 3 RT	1	18	LOS F	LOS D
Cambridge Lane (West)	Lane 1 TH	0	25	LOS F	LOS D
	Lane 3 RT	0	25	LOS F	LOS D
Overall Intersection		**4**	**25**	**LOS A**	**LOS D**

Table 4.2: 95% back of queue lengths and LOS comparison for Clark Street/ Cambridge Lane (site accessway) – PM peak

Approach Name	Lane No.	95% Queue (Veh)		Level of Service (LoS)	
		Base Model	Scenario 1	Base Model	Scenario 1
Clark Street (South)	Lane 1 LT	5	20	LOS A	LOS D
	Lane 2 TH	5	21	LOS A	LOS D

[2] Jacobs NZ Limited, May 2020.

Approach Name	Lane No.	95% Queue (Veh)		Level of Service (LoS)	
		Base Model	Scenario 1	Base Model	Scenario 1
Clark Street (North)	Lane 2 TH	3	6	LOS A	LOS B
	Lane 3 RT	1	14	LOS E	LOS D
Cambridge Lane (West)	Lane 1 TH	1	23	LOS D	LOS D
	Lane 3 RT	1	23	LOS D	LOS D
Overall Intersection		**5**	**23**	**LOS A**	**LOS D**

4.1.2 Clark Street / Rankin Avenue / Totara Avenue intersection

The base models are operating at a LOS D in both the AM and PM peaks, whereas the future scenario models are operating at LOS C and LOS D during the AM and PM peaks, respectively. Currently, the signal is running with the same cycle length in the base and scenario 1 during the peak periods which contributes to the longer delays for few movements. For the future scenario models, the signal timings were optimised which reduced the delays and the intersection is performing slightly better in the future models. There was no significant impact on the queue lengths.

Table 4.3: 95% back of queue lengths and LOS comparison for Clark Street/ Rankin Avenue/ Totara Avenue – AM peak

Approach Name	Lane No.	95% Queue (Veh)		Level of Service (LoS)	
		Base Model	Scenario 1	Base Model	Scenario 1
Rankin Avenue (South)	Lane 1 TH	10	8	LOS D	LOS D
	Lane 3 RT	13	9	LOS E	LOS D
Clark Street (East)	Lane 1 TH	8	15	LOS B	LOS C
	Lane 2 TH	8	15	LOS B	LOS C
	Lane 3 RT	2	2	LOS E	LOS E
Totara Avenue (North)	Lane 1 TH	3	4	LOS D	LOS D
	Lane 2 TH	3	3	LOS D	LOS E
	Lane 3 RT	3	3	LOS E	LOS E
Clark Street (West)	Lane 1 TH	13	17	LOS C	LOS C
	Lane 3 RT	5	2	LOS F	LOS E
Overall Intersection		**13**	**17**	**LOS D**	**LOS C**

Table 4.4: 95% back of queue lengths and LOS comparison for Clark Street/ Rankin Avenue/ Totara Avenue – PM peak

Approach Name	Lane No.	95% Queue (Veh)		Level of Service (LoS)	
		Base Model	Scenario 1	Base Model	Scenario 1
Rankin Avenue (South)	Lane 1 TH	5	5	LOS D	LOS E
	Lane 3 RT	6	7	LOS D	LOS E
Clark Street (East)	Lane 1 TH	21	22	LOS C	LOS C
	Lane 2 TH	21	22	LOS C	LOS C
	Lane 3 RT	2	3	LOS D	LOS E
Totara Avenue (North)	Lane 1 TH	5	5	LOS C	LOS D
	Lane 2 TH	10	8	LOS E	LOS D
	Lane 3 RT	10	8	LOS E	LOS D

Approach Name	Lane No.	95% Queue (Veh)		Level of Service (LoS)	
		Base Model	Scenario 1	Base Model	Scenario 1
Clark Street (West)	Lane 1 TH	8	10	LOS C	LOS C
	Lane 3 RT	2	2	LOS D	LOS E
Overall Intersection		**21**	**22**	**LOS D**	**LOS D**

4.1.3 Clark Street / Great North Road intersection

The base models are operating with a LOS B and LOS D in the AM and PM peaks, respectively. The future model scenario is operating with a LOS C and LOS D during the AM and PM peaks, respectively. The future model is showing marginal impacts in terms of queues and delays for both the AM and PM peaks; however, queues were reduced for the Great North Road (east) approach during the PM peak through timing optimisation.

Table 4.5: 95% back of queue lengths and LOS comparison for Clark Street/ Great North Road – AM peak

Approach Name	Lane No.	95% Queue (Veh)		Level of Service (LoS)	
		Base Model	Scenario 1	Base Model	Scenario 1
Clark Street (South)	Lane 1 LT	3	5	LOS A	LOS A
	Lane 2 RT	1	4	LOS F	LOS E
Great North Road (East)	Lane 1 TH	8	8	LOS E	LOS D
	Lane 2 TH	8	8	LOS E	LOS E
	Lane 3 RT	1	0	LOS E	LOS D
Unknown Road (North)	Lane 1 TH	0	0	LOS E	LOS E
	Lane 2 TH	0	0	LOS E	LOS E
	Lane 3 RT	0	0	LOS E	LOS E
Great North Road (West)	Lane 1 TH	7	27	LOS A	LOS D
	Lane 2 RT	5	15	LOS A	LOS C
Overall Intersection		**8**	**27**	**LOS B**	**LOS C**

Table 4.6: 95% back of queue lengths and LOS comparison for Clark Street/ Great North Road– PM peak

Approach Name	Lane No.	95% Queue (Veh)		Level of Service (LoS)	
		Base Model	Scenario 1	Base Model	Scenario 1
Clark Street (South)	Lane 1 LT	5	8	LOS B	LOS B
	Lane 2 RT	1	3	LOS F	LOS D
Great North Road (East)	Lane 1 TH	27	20	LOS F	LOS E
	Lane 2 TH	27	20	LOS F	LOS E
	Lane 3 RT	0	0	LOS E	LOS D
Unknown Road (North)	Lane 1 TH	0	0	LOS E	LOS E
	Lane 2 TH	0	0	LOS E	LOS E
	Lane 3 RT	0	0	LOS E	LOS E
Great North Road (West)	Lane 1 TH	5	12	LOS A	LOS C
	Lane 2 RT	4	13	LOS B	LOS D
Overall Intersection		**27**	**20**	**LOS D**	**LOS D**

4.1.4 Clark Street / Titirangi Road / Rata Street intersection

In both the base and future scenarios, the models are operating with LOS F and LOS D in AM and PM peaks, respectively. The future model is showing marginal improvements in terms of queue lengths for the AM peak; particularly for the Great North Road (west) approach were queues are seen to be reduced through timing optimisation.

Table 4.7: 95% Back of queue lengths and LOS comparison for Great North Road / Titirangi Road / Rata Street – AM peak

Approach Name	Lane No.	95% Queue (Veh)		Level of Service (LoS)	
		Base Model	Scenario 1	Base Model	Scenario 1
Titirangi Road (South)	Lane 1 LT	3	3	LOS B	LOS B
	Lane 2 TH	41	43	LOS F	LOS F
	Lane 3 RT	15	25	LOS D	LOS E
Great North Road (East)	Lane 1 TH	1	2	LOS B	LOS B
	Lane 2 TH	12	11	LOS C	LOS C
	Lane 3 RT	5	23	LOS E	LOS F
Rata Street (North)	Lane 1 TH	2	8	LOS C	LOS D
	Lane 2 TH	11	19	LOS D	LOS F
	Lane 3 RT	11	19	LOS E	LOS F
Great North Road (West)	Lane 1 LT	20	21	LOS C	LOS C
	Lane 2 TH	81	74	LOS F	LOS F
	Lane 3 RT	10	8	LOS F	LOS E
Overall Intersection		**81**	**74**	**LOS F**	**LOS F**

Table 4.8: 95% Back of queue lengths and LOS comparison for Great North Road / Titirangi Road / Rata Street – PM peak

Approach Name	Lane No.	95% Queue (Veh)		Level of Service (LoS)	
		Base Model	Scenario 1	Base Model	Scenario 1
Titirangi Road (South)	Lane 1 LT	8	9	LOS C	LOS C
	Lane 2 TH	11	14	LOS D	LOS E
	Lane 3 RT	7	14	LOS D	LOS E
Great North Road (East)	Lane 1 TH	3	5	LOS B	LOS B
	Lane 2 TH	24	28	LOS D	LOS E
	Lane 3 RT	5	15	LOS E	LOS E
Rata Street (North)	Lane 1 TH	1	4	LOS B	LOS B
	Lane 2 TH	23	26	LOS D	LOS D
	Lane 3 RT	23	26	LOS E	LOS E
Great North Road (West)	Lane 1 LT	5	6	LOS B	LOS B
	Lane 2 TH	20	20	LOS D	LOS D
	Lane 3 RT	9	9	LOS E	LOS E
Overall Intersection		**24**	**28**	**LOS D**	**LOS D**

4.2 Performance Summary

Table 4.9 to Table 4.16 presents the delay and travel time comparison for the base and future scenarios models for the AM and PM peaks. Below are the observations made from the comparison of results:

- There was a significant increase in delay between the base year and the future scenario at the Clark Street / Cambridge Lane intersection (site accessway).
- The future model shows that the Cambridge Lane / Clark Street intersection would be operating under LOS D, while in the base scenario it is operating under LOS A for both AM and PM peaks. The 95% queue for the overall intersection is increased from four vehicles in the base scenario to 25 vehicles in the future AM peak scenario, and from five vehicles in the base scenario to 23 vehicles in the future scenario for the PM peak.
- The future model shows that the Great North Road / Clark Street intersection would be controlling under LOS C, while in the base scenario, it is working under LOS B for the AM peak. For the PM peak, the intersection is performing at a LOS D for both scenarios. The 95% queue length for the overall intersection is increased from eight vehicles in the base model to 27 vehicles in the future scenario for the AM peak.
- There is no significant increase in 95% queue and reduction in LOS for the Great North Road / Rata Street / Titirangi Road intersection for the future scenario compared to the base scenario.
- There is no significant increase in 95% queue and reduction in LOS for the Clark Street / Rankin Avenue / Totara Avenue intersection for the future scenario compared to the base scenario.

Table 4.9: Delay and travel time comparison for Clark Street / Cambridge Lane (site accessway) – AM peak

Approach Name	Travel Distance (m)	Free Flow Travel Time (sec)	Approach Delay (sec)		Travel Time (sec)	
			Base Year	Scenario 1	Base Year	Scenario 1
Clark Street (North)	89	6	2	23	9	29
Clark Street (South)	209	15	4	38	19	53

Table 4.10: Delay and travel time comparison for Clark Street / Cambridge Lane (site accessway) – PM peak

Approach Name	Travel Distance (m)	Free Flow Travel Time (sec)	Approach Delay (sec)		Travel Time (sec)	
			Base Year	Scenario 1	Base Year	Scenario 1
Clark Street (North)	89	6	6	26	12	32
Clark Street (South)	209	15	5	48	20	63

Table 4.11: Delay and travel time comparison for Clark Street / Rankin Avenue / Totara Avenue – AM peak

Approach Name	Travel Distance (m)	Free Flow Travel Time (sec)	Approach Delay (sec)		Travel Time (sec)	
			Base Year	Scenario 1	Base Year	Scenario 1
Rankin Avenue (South)	451	32	69	43	101	75
Totara Avenue (North)	223	16	48	28	64	44
Clark Street (East)	99	6	18	58	23	63
Clark Street (West)	199	12	35	29	47	41

Table 4.12: Delay and travel time comparison for Clark Street / Rankin Avenue / Totara Avenue – PM peak

Approach Name	Travel Distance(m)	Free Flow Travel Time (sec)	Approach Delay (sec)		Travel Time (sec)	
			Base Year	Scenario 1	Base Year	Scenario 1
Rankin Avenue (South)	451	32	49	60	82	93
Totara Avenue (North)	223	16	52	30	68	46
Clark Street (East)	99	6	34	43	40	49
Clark Street (West)	199	12	30	35	42	47

Table 4.13: Delay and travel time comparison for Clark Street / Great North Road – AM peak

Approach Name	Travel Distance (m)	Free Flow Travel Time (sec)	Approach Delay (sec)		Travel Time (sec)	
			Base Year	Scenario 1	Base Year	Scenario 1_2025
Clark Street (South)	101	6	8	15	14	21
Great North Road (East)	590	35	67	45	103	80
Great North Road (West)	70	4	6	22	10	26

Table 4.14: Delay and travel time comparison for Clark Street / Great North Road – PM peak

Approach Name	Travel Distance (m)	Free Flow Travel Time (sec)	Approach Delay (sec)		Travel Time (sec)	
			Base Year	Scenario 1	Base Year	Scenario 1
Clark Street (South)	101	7	12	16	20	23
Great North Road (East)	590	42	113	48	155	90
Great North Road (West)	70	5	8	28	13	33

Table 4.15: Delay and travel time comparison for Great North Road / Titirangi Road / Rata Street – AM peak

Approach Name	Travel Distance (m)	Free Flow Travel Time (sec)	Approach Delay (sec)		Travel Time (sec)	
			Base Year	Scenario 1	Base Year	Scenario 1
Titirangi Road (South)	143	9	105	98	114	107
Rata Street (North)	221	13	57	61	70	74
Great North Road (East)	156	9	34	98	43	108
Great North Road (West)	655	39	92	88	131	127

Table 4.16: Delay and travel time comparison for Great North Road / Titirangi Road / Rata Street – PM peak

Approach Name	Travel Distance (m)	Free Flow Travel Time (sec)	Approach Delay (sec)		Travel Time (sec)	
			Base Year	Scenario 1	Base Year	Scenario 1
Titirangi Road (South)	143	9	40	56	48	64
Rata Street (North)	221	13	50	49	63	62
Great North Road (East)	156	9	42	51	51	61
Great North Road (West)	655	39	36	36	76	75

5. Summary and Conclusions

This memorandum has been prepared to document the SIDRA model development and subsequent validation for the four intersections likely to be impacted by a new primary school and ECE centre proposed for the site at 3094 Great North Road, New Lynn.

The base models showed adequate levels of calibration based on SCATS data (traffic counts and signal phasing/timings) and have been accurately validated against Google travel time. The base models therefore provide a robust representation of the existing conditions and can therefore be used with confidence to assess the impact of the proposed development on the site's proposed accessway and performance of three surrounding intersections.

In the future scenario, the proposed development has resulted in additional traffic and contributed to an increase in queues, delay and LOS for the surrounding intersections, especially for the Clark Street / Cambridge Lane (site accessway) intersection. Below are the key observations and recommendations:

- In the future AM and PM peak models, the Clark Street / Cambridge Lane intersection is operating with LOS D compared to LOS A in the base model for the AM and PM peaks.
    - To minimise the delay and queues in southbound traffic at Clark Street, it is recommended that the better optimised timing plan would reduce the delay and queues for the north approach.
    - The potential queue lengths estimated for the future model scenario at the site access could be minimised by reducing the cycle lengths. The intersection is currently operating with a relatively high cycle time which contributes to the 95% queue lengths for non-pivot phase movements, including the right turn into the site and vehicle movements from Cambridge Lane.
- The future model shows that the Great North Road / Clark Street intersection would be performing under a similar LOS as the base scenario.
- For the future scenario, Great North Road / Rata Street / Titirangi Road intersection is still operating with almost the same 95% queue and LOS as the base scenario.
- For the future scenario, Clark Street / Rankin Avenue / Totara Avenue Road intersection is still operating with almost the same 95% queue and LOS as the base scenario.

Appendix F

Engineering Review Report

New Lynn Primary School – 3094 Great North Road

Engineering Review Report

IZ131900-0000-GN-RPT-00001 | Final Revision 2.0

16 March 2020

Ministry of Education

Client Reference No. 11061

Document history and status

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New Lynn Primary School – 3094 Great North Road Engineering Review Report

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Contents

Executive Summary

The Ministry of Education has commissioned Jacobs to undertake an engineering review with regard to a proposed designation of land at 3094 Great North Road, for a new primary school and Early Childhood Education (ECE) centre in New Lynn, Auckland.

A civil infrastructure, geotechnical and land contamination desktop review of engineering reports was undertaken by Jacobs as part of the assessment of existing information, along with a high-level cross check against Geographic Information System (GIS) and other online available information, in order to determine if there are any limitations preventing the site being used as a school.

Civil infrastructure review findings

The findings for the review of civil infrastructure information for the site concluded that whilst the previous infrastructure report[1] is out of date and since then, a new entrance has been provided, the flood model has been updated, and the use of the site has been changed, the report remains a valid assessment of the site. There were no fundamental civil infrastructure limitations that would preclude the site from being used for educational purposes.

However, it should be noted that the demand on the existing water and wastewater network could potentially increase for firefighting, wastewater and drinking water supply, as a result of the school development. This has not been assessed as part of this review. It is recommended that a network capacity assessment is undertaken to confirm whether there are any fundamental capacity constraints.

Geotechnical review findings

The review of the existing geotechnical information for the site concluded that there were no fundamental limitations that would preclude the site from being used for educational purposes. However, the following key points have been noted from the review and recommendations proposed:

- A set-back is most likely required to ensure any instability of the stream bank does not encroach on the site and to meet Auckland Council requirements. The proposed site plan shows the buildings and outdoor learning area to be close to the slope crest and potentially this will need to be moved back to ensure stability. If a set-back cannot be accommodated by the proposed design, then the stream slope could be retained or strengthened to ensure improved stability to reduce the set-back distance;
- The provided Geotechnical Appraisal Report (GAR) has deemed the variable existing fill located at the north-western extent of the site as not suitable to support multi-storey buildings due to variability in both composition and engineering properties. Therefore, it has been suggested that deep foundations, such as piles would be required for the proposed development; and
- Additional geotechnical investigations and lab testing has been proposed, as noted in section 3.6, prior to progressing concept design.

Land contamination review findings

The findings for the review of contaminated land information associated with the site concluded that there were no fundamental findings that would preclude the proposed land use change to a school from occurring. However, the following key points have been noted in the review:

[1] 3094-3096 Great North Road, Infrastructure Investigation and Report, Blue Barn Consulting Engineers, 16 June 2016

- It is important to note that the roofs of the warehouses, internal walls, guttering and stormwater downpipes are reported to contain asbestos;
- Further characterisation of the 'non-engineered' fill is recommended to determine appropriate reuse and / or disposal options as noted in Section 4.4 of this assessment;

- Although clothing manufacturing activities are not classified as a Hazardous Activities or Industries List (HAIL) activity, petroleum storage tanks are classified as HAIL A17. Due to the presence of the historical underground storage tanks (UST), there is the potential for the site to be classified as a HAIL as a result of this. Therefore, there is a possibility that the change in use could trigger the requirement for a Detailed Site Investigation (including soil sampling), with the potential requirement for resource consent and associated management plans under the National Environmental Standards (NES).

Summary

The Engineering Review of the provided site investigation reports identified that while the reports require updating and further investigation is required, there were no identified civil infrastructure, geotechnical or land contamination concerns that would preclude the site from being used for education purposes.

Important note about your report

The sole purpose of this report and the associated services performed by Jacobs is to undertake a review of engineering reports prepared and provided by others to identify any concerns that would preclude the site from being used for educational purposes. This review relies on information prepared by others and has been undertaken in accordance with the scope of services set out in the contract between Jacobs and the Client (Ministry of Education). That scope of services, as described in this report, was developed with the Client.

In preparing this report, Jacobs has relied upon, and presumed accurate, any information (or confirmation of the absence thereof) provided by the Client and/or from other sources. Except as otherwise stated in the report, Jacobs has not attempted to verify the accuracy or completeness of any such information. If the information is subsequently determined to be false, inaccurate or incomplete then it is possible that our observations and conclusions as expressed in this report may change.

Jacobs derived the data in this report from information sourced from the Client (if any) and/or available in the public domain at the time or times outlined in this report. The passage of time, manifestation of latent conditions or impacts of future events may require further examination of the project and subsequent data analysis, and reevaluation of the data, findings, observations and conclusions expressed in this report. Jacobs has prepared this report in accordance with the usual care and thoroughness of the consulting profession, for the sole purpose described above and by reference to applicable standards, guidelines, procedures and practices at the date of issue of this report. For the reasons outlined above, however, no other warranty or guarantee, whether expressed or implied, is made as to the data, observations and findings expressed in this report, to the extent permitted by law.

This report should be read in full and no excerpts are to be taken as representative of the findings. No responsibility is accepted by Jacobs for use of any part of this report in any other context. This report has been prepared on behalf of, and for the exclusive use of, Jacobs's Client, and is subject to, and issued in accordance with, the provisions of the contract between Jacobs and the Client. Jacobs accepts no liability or responsibility whatsoever for, or in respect of, any use of, or reliance upon, this report by any third party.

1. Introduction

The Ministry of Education has commissioned Jacobs to undertake a civil infrastructure, geotechnical and land contamination desktop review of engineering reports with regards to a proposed designation of land at 3094 Great North Road in New Lynn, Auckland. This review of existing reports has been undertaken within the context of the site being used for a new primary school and ECE.

The proposed site is shown in Figure 1 and is currently occupied by a several uses including factory, offices, warehouses and retail. The site currently is utilised as a car warehouse storage / sales facility and Cambridge Clothing Company and impervious carparking area. The Rewarewa Stream, a Significant Ecological Area (SEA), borders the site's western boundary.

Figure 1 Proposed new primary school site at 3094 Great North Road, New Lynn

1.1 Methodology

Previously, a number of assessments and reports have been prepared by others in relation to 3094 Great North Road, New Lynn. This review has focused on whether the previous assessments have identified any limitations to the proposal to develop the site as a primary school and ECE. It is not the intent to repeat the information contained in the previous reports but rather comment on its relevance and identify whether the site can be used for educational purposes. No site walkover has been undertaken by the engineering specialists as part of this review. This review relies on the information prepared and provided by others.

The review covers the following technical areas:

- Civil infrastructure;
- Geotechnical; and
- Land contamination, covering asbestos.

The following documents have been reviewed within the context of the site being used for education purposes:

- 3094 Great North Road New Lynn Primary School Feasibility Study; ASC Architects, 12 April 2019;
- Preliminary Site Investigation 3094-3096 Great North Road, New Lynn, 4Sight Consulting, 2016;
- Preliminary Geotechnical Appraisal 3094-3096 Great North Road, New Lynn, Soil&Rock Consultants, 2016;
- 3094-3096 Great North Road Infrastructure Investigation and Report, Blue Barn Consulting Engineers, 2016;
- Cambridge Clothing Ltd – Background Air Tests, Dowdell & Associates LTD, 2016;
- Auckland Council GIS Database[2]; and
- Google Earth® Aerial Images; 2019.

[2] Auckland Council. Auckland Council Geomaps. Site retrieved from https://geomapspublic.aucklandcouncil.govt.nz/viewer/index.html

2. Civil Infrastructure Review

This section outlines the civil infrastructure engineering review of the report prepared by Blue Barn Consulting Limited[3] (Blue Barn report).

The review noted that the GIS image referred in the report has since been updated with the Clark Road extension, as shown in Figure 2 and that while the topography has been adequately described, it is recommended that a full topographical survey is carried out prior to any concept design commencing.

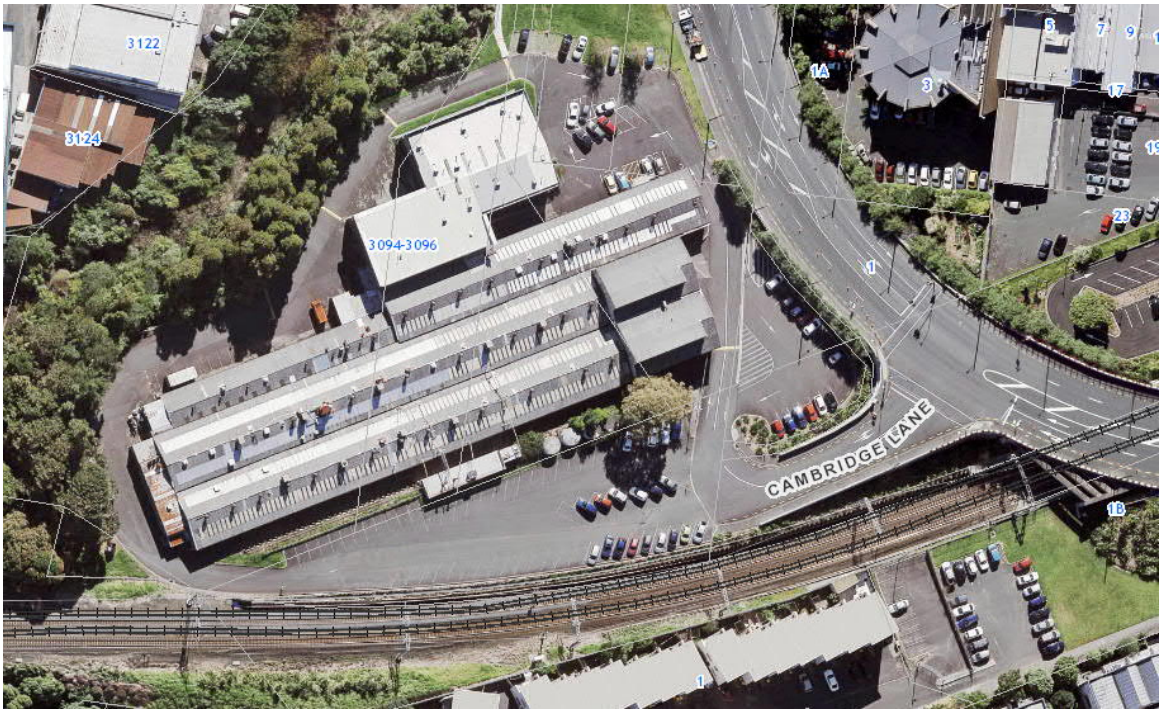

Figure 2 Updated aerial of site to include the Clark Road extension and Cambridge Lane[4]

2.1 Flooding

There is a risk of flooding in the 100-year average recurrence interval (ARI) event, as shown by GIS flood modelling that was carried out in 2009. However, the report states that due to developments in the area the overland flow paths may no longer be accurate. It was recommended that up to date flood modelling is carried out to determine appropriate finished surface levels to avoid ponding in storm events.

There was no conclusion about how the overland flow paths could have changed or what the impact could be at that time. However, the latest GIS map shown in Figure 3 below, which was updated, shows the area subject to redevelopment appears to be outside of the flood plain / flood prone area, which suggest there is minimal flooding risk to the proposed school site.

[3] 3094-3096 Great North Road, Infrastructure Investigation and Report, Blue Barn Consulting Engineers, 16 June 2016
[4] Auckland Council, 2017. Auckland Council Geomaps. Site retrieved from https://geomapspublic.aucklandcouncil.govt.nz/viewer/index.html

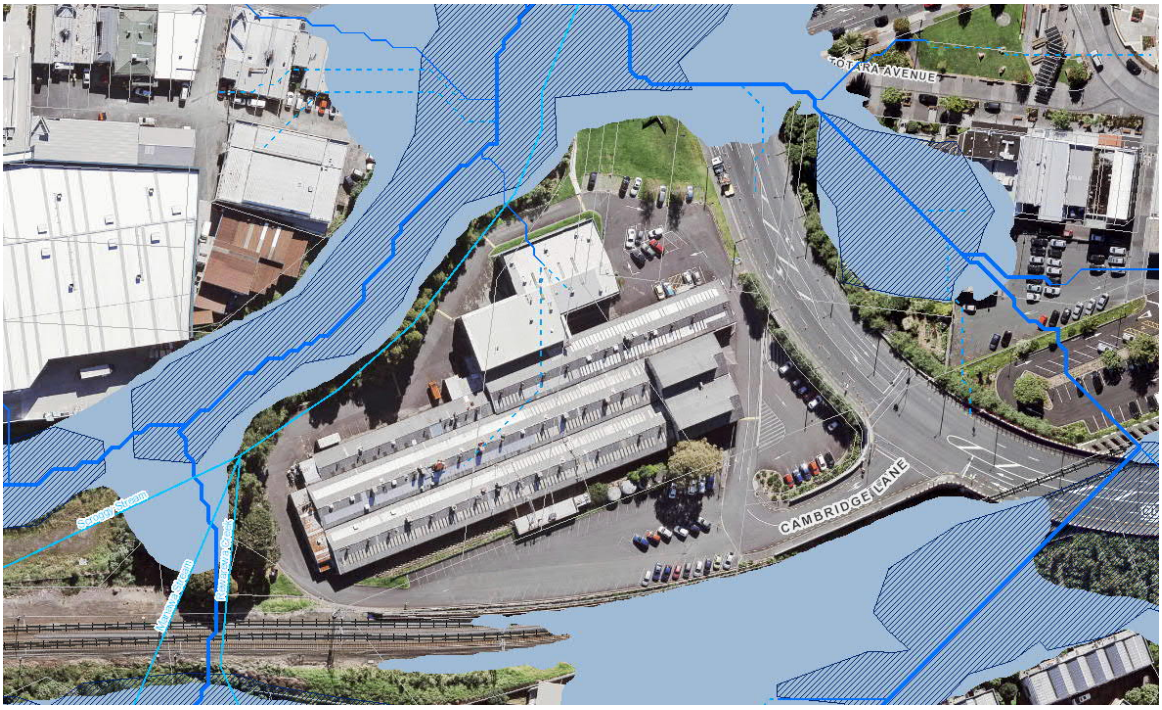

Figure 3 GIS map showing flood plain near site[5]

2.2 Services

2.2.1 Stormwater

The existing stormwater infrastructure information in the Blue Barn report was taken from Auckland Council's GIS. The report advises that depending on the type of development, this may have enough capacity, but the downstream network capacity must be determined. There was no conclusive recommendation based on required discharges, other than the potential for a slight increase in stormwater flows and the need to provide treatment.

Since, the proposed school development looks to be increasing the permeable areas, it is unlikely that the stormwater flows will increase. Whilst there are sufficient connections available, it is recommended that a full infrastructure survey is carried out prior to concept design commencing to confirm all lid levels and pipe gradients.

A recommendation for the infrastructure required to manage the stormwater off site would be required during the concept design for stormwater management for a future school development. However, the following is a high-level evaluation based on what has been provided to date.

The Rewarewa Stream that runs along the western boundary is a SEA, primarily due to short-finned eels which inhabit the stream. Recent aerial photos show the stream area around the site, particularly the sections of the stream on either side of Great North Road, has been improved.

The concept design could consider using the existing manholes, pipes and outlet to the stream given that the existing outlets in this area may have already been upgraded. It is recommended that post-development flows are kept below the predevelopment flows.

[5] Source: Auckland Council Geomaps

If new connections are required to the stream, the design would ensure that post development flows, considering the steep drop-off from the site to the stream; are provided with appropriate outlet protection to prevent erosion and scouring. Potential options include riprap, stormwater retention on-site and water reuse.

2.2.2 Wastewater

The existing wastewater infrastructure information from Blue Barn report is taken from GIS. The Blue Barn report advised that depending on the type of development, this may have enough capacity, but the downstream network capacity must be determined. There was no conclusive recommendation based on required discharges.

Whilst there are sufficient connections available, it is recommended that a full infrastructure survey is carried out prior to concept design commencing.

2.2.3 Water

The existing water infrastructure information in the Blue Barn report taken from GIS advised that there are two supplies to the site. There was no conclusion as to whether this would be suitable for future developments.

For fire-fighting, it was advised that there is likely to be more supply required depending on the required flow-rate of the largest fire cell in the new development.

Additional testing of flow rates and hydrants will be required if the site is used as a school.

2.2.4 Power, Gas and Telecommunications

The Blue Barn report listed the existing connections and concluded the redeveloped site could utilise these existing services. There is no reason to assume that these would not be sufficient for the school development.

2.3 KiwiRail Land Exchange

At the time of the Blue Barn report the exchange of land between Cambridge Clothing Company and KiwiRail had not yet been formalised and surveyed. The designation plan will need to reflect the current land ownership.

2.4 Summary

Whilst the Blue Barn report is out of date and since then, a new entrance has been provided, the flood model has been updated, and the use of the site has been changed, the report remains a valid assessment of the site.

The review of the Blue Barn report concluded that there were no fundamental findings that would preclude the proposed land use change to education purposes from occurring.

3. Geotechnical Review

This section outlines the findings from a geotechnical and geological review of the Geotechnical Appraisal Report[6] (GAR), prepared by Soil & Rock Consultants relating to 3094 Great North Road, New Lynn.

The scope of the GAR was to undertake a geotechnical desktop study to assist a due diligence process for an unknown property redevelopment. The assessment included:

- A detailed walkover inspection;
- Review of geological maps;
- Review of existing geotechnical data within the vicinity of the site;
- Review of historical aerial photographs;
- Geotechnical investigations comprising three hand auger holes to a target depth of 5.0 m; and
- Report the preliminary geotechnical assessment.

3.1 Geological Setting

The GAR describes the site as being underlain by Pliocene to Pleistocene aged alluvial sediments belonging to the Puketoka Formation, which overlie variably weathered Waitemata Group rock.

The Puketoka Formation alluvial sediment is described comprising of clays, silts and sands with highly variable lesser fractions of each, frequently saturated at depth. Black, organic clay and peat may also be present. The Waitemata Group is described as alternating sandstone and mudstone with variable volcanic content and interbedded volcaniclastic grits.

Site-specific intrusive investigations indicated that approximately 0.1 – 1.5 m of topsoil and existing fill overlie the Puketoka Formation alluvial and Waitemata Group sediments. The fill is described on the hand auger logs as non-engineered and variable with topsoil inclusions.

Alluvial deposits, which are part of the Puketoka Formation were encountered underlying the topsoil and/or fill to the top of the weathered Waitemata Group soils encountered between 2.2 m and 4.4 m depth. The alluvial sediments were described as light orange to light grey stiff to hard, non-plastic to slightly plastic silts and slightly plastic to moderately plastic clays. The vertical and lateral continuity of the Puketoka Formation was variable, consistent with its alluvial origin.

Weathered Waitemata Group soils were encountered below the Puketoka Formation. Where the Puketoka Formation was absent, these materials were encountered directly below the topsoil and/or existing fill closer to Rewarewa Stream located at the western boundary of the site. There is a possibility that localised reworking by Rewarewa Stream has eroded the Puketoka Formation out, with the stream incised into Waitemata Group sediments. The weathered Waitemata Group soils were described as very stiff to hard silts and clays with occasional layers of loose to medium dense sands.

Sandstone and siltstone of the Waitemata Group was encountered in the two machine boreholes at depths of 7.0 m and 7.4 m.

Shallow groundwater was encountered at depths between 0.2 m to 5.3 m depth, with local base levels being controlled by water levels in Rewarewa Stream.

[6] Preliminary Geotechnical Appraisal, 3094-3096 Great North Road, New Lynn, Soil & Rock Consultants, 12 August 2016

3.2 Slope Instability

Rewarewa Stream borders the site's western boundary. The GAR has identified potential land instability and shallow soil creep on and near the stream banks. A plan showing areas at risk of instability under high groundwater conditions is provided in their assessment (DWG No. 0923314). This assessment was based on undertaking a number of slope stability analyses at various locations to understand the risk for slope instability adjacent to Rewarewa Stream.

Risk zones are outlined on the plan. The risk zones are interpreted by Jacobs being:

- Risk Zone I: Slope stability factor of safety > 1.5;
- Risk Zone II: 1.0 < Slope stability factor of safety < 1.5; and
- Risk Zone III: Slope stability factor of safety < 1.0.

No specific details are included in the GAR outlining the slope stability assessment including site contour references and the geotechnical design parameters used. The only details given relate to the stream bank slope, which is shown to be approximately 9.0 m high ranging from a stream bed level of 4.0 m RL and a top of slope crest level of 13.0m RL. Consequently, Jacobs are unable to verify the validity of the of the risk zone definitions.

A set-back is most likely required to ensure any instability of the stream banks does not encroach on the site and to meet Auckland Council requirements. This will need further assessment, which is likely to include additional geotechnical investigations and slope stability analyses.

The current proposed site plan shows the buildings and outdoor learning area to be close to the slope crest and potentially will need to be moved back to ensure stability. If a set-back cannot be accommodated by the proposed design, then the stream slope could be retained or strengthened to ensure improved stability to reduce the set-back distance.

3.3 Foundation Assessment

The GAR has deemed the variable existing fill located at the north-western extent of the site as not suitable to support multi-storey buildings due to variability in both composition and engineering properties.

The GAR has outlined that piled foundations are the most appropriate foundation solution due to slope instability, presence of fill and building loads. Buildings constructed nearby the site are all supported by piled foundations. Soil & Rock have stated that the piles are likely to embed into the Waitemata Group rock at approximately 7.0 m – 7.4 m depth. Limited data is provided about the depth to rock but is assumed to decrease in depth from the east to west.

No bearing capacity assessments or expected settlement have been provided for shallow foundations but is expected to be exceeded for multi-storey buildings. This further suggests deep foundations, such as piles would be required for the proposed development.

3.4 Seismic Assessment

No seismic assessment has been conducted for the site. No subsoil site class was determined for the site.

3.5 Expansive Soils

Puketoka soils are known to be typically moderately to highly expansive. The GAR did not mention or assess the expansiveness of the site.

3.6 Relevance of Existing Information

The existing information provides a preliminary overview of the site geology and geotechnical characteristics. From the high-level information provided about the proposed school development, additional investigations and assessment will be required for a preliminary geotechnical assessment of the proposed school development.

The preliminary geotechnical assessment should cover the following:

- Seismic assessment;
- Extent and properties of the existing fill;
- Extent and properties of the Puketoka Formation;
- Extent and properties of the Waitemata Group soils;
- Extent and properties of the Waitemata Group rock for the design of the foundation piles;
- Slope instability; and
- Additional geotechnical investigations and lab testing.

The additional investigations recommended for further geotechnical assessment are to address the geotechnical risks and uncertainties associated with the site which are summarised as:

- Variability of the site geology;
- Uncertainty of the geotechnical properties of the site geology;
- Slope instability of Rewarewa Stream slope; and
- Seismic assessment of the site.

3.7 Summary

The review of the existing geotechnical information for the site concluded that there were no fundamental limitations that would preclude the site from being used for educational purposes. However, the following key points have been noted from the review and recommendations proposed:

- A set-back is most likely required to ensure any instability of the stream bank does not encroach on the site and to meet Auckland Council requirements. The proposed site plan shows the buildings and outdoor learning area to be close to the slope crest and potentially this will need to be moved back to ensure stability. If a set-back cannot be accommodated by the proposed design, then the stream slope could be retained or strengthened to ensure improved stability to reduce the set-back distance.
- The provided Geotechnical Appraisal Report (GAR) has deemed the variable existing fill located at the north-western extent of the site as not suitable to support multi-story buildings due to variability in both composition and engineering properties. Therefore, it has been suggested that deep foundations, such as piles would be required for the proposed development.
- Additional geotechnical investigations and lab testing has been proposed in section 3.6.

4. Land Contamination Review

This section outlines whether contaminated soils and asbestos pose a risk to the proposed redevelopment of the site and change of use to a primary school.

The following documents/resources have been reviewed as part of the assessment of existing information:

- Preliminary Site Investigation 3094-3096 Great North Road, New Lynn, 4Sight Consulting, 2016;
- Cambridge Clothing Ltd – Background Air Tests, Dowdell & Associates LTD, 2016
- Preliminary Geotechnical Appraisal 3094-3096 Great North Road New Lynn; Soil&Rock Consultants, 2016;
- 3094 Great North Road New Lynn Primary School Feasibility Study; ASC Architects, 12 April 2019;
- Auckland Council GIS Database[7]; and
- Google Earth® Aerial Images; 2019.

4.1 Contaminated Land

Two previous soil sampling investigations were reported in the 4Sight Consulting PSI (2016). Only limited soil sampling and analysis have been undertaken comprising sampling of shallow fill materials below the site at six locations.

Sampling undertaken by Soil & Rock Consultants in 2010 included three locations on or immediately adjacent to the eastern boundary of the site. Results showed concentrations of heavy metals where within natural background levels. Concentrations of total petroleum hydrocarbons (TPH) and DDT were below laboratory detection limits.

The PSI undertaken by Focus Environmental Services Ltd in 2010 included six soil sampling locations across the site. Results showed elevated (above background concentration) levels of heavy metals, TPH and polycyclic aromatic hydrocarbons (PAH). Additionally, in one location TPH and PAH concentrations were elevated above commercial and industrial land use guidelines.

4.2 Preliminary Site Investigation

The PSI undertaken by 4Sight in 2016 involved a review of all available information relating to the site, including review of the two reports outlined above, and a site inspection. No sampling was undertaken as part of the PSI.

Interviews from former employees of the Cambridge Clothing Company in the 4Sight report revealed the following information:

- Boilers:
  - Two boilers on site are utilised for the generation of steam with one of the boilers historically fueled by heavy oil (ceased 20 years earlier).
  - Oil for use in the boiler was stored in a partially buried underground storage tank (UST).
  - It was reported that at the former location of the UST, pipework utilised for the transfer of oil between the UST and boiler was visible and exposed pipe ends had been sealed.
  - The UST was decommissioned and removed in approximately 2010.

[7] Auckland Council. Auckland Council Geomaps. Site retrieved from https://geomapspublic.aucklandcouncil.govt.nz/viewer/index.html

- Soil Disturbance:
  - At the time of initial development, the site was levelled, and this involved cut material from the eastern side of the site and this material was placed along the western boundary, adjacent to the Manawa Stream.
  - Interviews with site management personnel indicated that no fill was known to have been imported as part of the process.
  - Earthworks associated with stabilising the carpark and hardstand areas on the western boundary of the site were undertaken in 2010. These works were reported to have included placement of additional hardfill and resealing of hard stand areas on site.
- Asbestos Containing Material:
  - The roofs of the warehouses are asbestos (Super 6) and guttering and stormwater downpipes in a number of locations are also reported to contain asbestos material. Numerous internal walls were also reported to contain asbestos.
  - Asbestos fragments were not evident on hardstand surfaces or within soils during the site walkover undertaken by 4Sight personnel.

4.3 Asbestos

The Dowdell & Associates information relates to compliance air quality testing for asbestos within the buildings due to the warehouses containing asbestos material. Routine air testing was undertaken at the site and the information includes results from 2003, 2005 and 2016. Results from the monitoring were reported to be less than detection limits for the method 0.01 fibres/ml.

An attached letter from Worksafe dated 25 August 2016 identified the absence of an asbestos management plan as required by the Health and Safety at Work (Asbestos) regulations 2016.

4.4 Fill

The Soil & Rock geotechnical report identified the presence of ‘non-engineered fill’ comprising variable amounts of gravel, sands and clays intermixed with top soil inclusions, generally between 0.5 and 1.5 m thick. Non engineered fill to depths of 5.3 m and 4.7 m were identified in two locations. The report states that non-engineered fill is unsuitable for the support of permanent structures. The fill was not tested for contaminants.

4.5 Relevance of Existing Information

The existing information provides an overview of land contamination issues associated with the site. It is inferred that soil disturbance will be required, including in relation to removal or strengthening of non-engineered fill on the site. Shallow portions of this fill in some locations of the site are likely to contain metals and other contaminants above back ground concentrations.

The lateral and vertical distribution of contaminated fill has not been established. Further testing will be required to asses this.

The presence of widespread contamination of soils by asbestos derived from site building is considered to be unlikely, given the general absence of non-paved areas and the reported general condition of the asbestos materials in the buildings. During demolition of these buildings, a licensed asbestos removalist will be required to be present on site, and an approved, licensed asbestos surveyor will be required to be engaged to provide clearance of the site once the demolition is completed.

Review of the available information associated with the site indicates that a change in use from its current use to a primary school is unlikely to result in significant risks to human health of users of the developed site in relation to contaminated soils.

4.6 Potential Regulatory Implications

Although clothing manufacturing activities are not classified as a Hazardous Activities or Industries List (HAIL) activity, petroleum storage tanks are classified as HAIL A17. Due to the presence of the historical UST, there is the potential for the site to be classified as a HAIL as a result of this. Therefore, there is a possibility that the change in use could trigger the requirement for a Detailed Site Investigation (including soil sampling), with the potential requirement for resource consent and associated management plans under the NES.

4.7 Summary

The findings for this review of contaminated land information associated with the site at 3094-3096 Great North Road, New Lynn concluded that there were no fundamental findings that would preclude the proposed land use change from occurring. However, as noted in section 4.4 of this assessment, further characterisation of the 'non-engineered' fill is recommended to determine appropriate reuse and/or disposal options.

5. Summary

The findings for the review of civil infrastructure information for the site concluded that whilst the previous infrastructure report[8] is out of date and since then, a new entrance has been provided, the flood model has been updated, and the use of the site has been changed, the report remains a valid assessment of the site. There were no fundamental civil infrastructure limitations that would preclude the site from being used for educational purposes.

However, it should be noted that the demand on the existing water and wastewater network could potentially increase for firefighting, wastewater and drinking water supply, as a result of the school development. This has not been assessed as part of this review. It is recommended that a network capacity assessment is undertaken to confirm whether there are any fundamental capacity constraints.

The review of the existing geotechnical information for the site concluded that there were no fundamental limitations that would preclude the site from being used for educational purposes. However, the following key points have been noted from the review and recommendations proposed:

- A set-back is most likely required to ensure any instability of the stream bank does not encroach on the site and to meet Auckland Council requirements. The proposed site plan shows the buildings and outdoor learning area to be close to the slope crest and potentially this will need to be moved back to ensure stability. If a set-back cannot be accommodated by the proposed design, then the stream slope could be retained or strengthened to ensure improved stability to reduce the set-back distance;
- The GAR has deemed the variable existing fill located at the north-western extent of the site as not suitable to support multi-storey buildings due to variability in both composition and engineering properties. Therefore, it has been suggested that deep foundations, such as piles would be required for the proposed development; and
- Additional geotechnical investigations and lab testing has been proposed as noted in section 3.6 prior to progressing the concept design.

The review of the existing information relating to contaminated land associated with the site concluded that there were no fundamental findings that would preclude the proposed land use change from occurring. However, the following key points have been identified from the review:

- It is important to note that the roofs of the warehouses, internal walls, guttering and stormwater downpipes are reported to contain asbestos;
- Further characterisation of the ‘non engineered’ fill is recommended to determine appropriate reuse and / or disposal options as noted in Section 4.4 of this assessment; and
- Although clothing manufacturing activities are not classified as a Hazardous Activities or Industries List (HAIL) activity, petroleum storage tanks are classified as HAIL A17. Due to the presence of the historical UST, there is the potential for the site to be classified as a HAIL as a result of this. Therefore, there is a possibility that the change in use could trigger the requirement for a Detailed Site Investigation (including soil sampling), with the potential requirement for resource consent and associated management plans under the NES.

[8] 3094-3096 Great North Road, Infrastructure Investigation and Report, Blue Barn Consulting Engineers, 16 June 2016

Appendix G

Ecological Assessment

MORPHUM ENVIRONMENTAL LTD

Engineers & Consultants

Ecological Impact Assessment

3094 – 3096 Great North Road, New Lynn

Final

Prepared for Incite by Morphum Environmental Ltd
2019

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Engineers & Consultants

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Executive Summary

Morphum Environmental Ltd was engaged by Incite to prepare an Ecological Impact Assessment to support the Ministry of Education in the lodgment of a Notice of Requirement for the construction and operation of a school at 3094 - 3096 Great North Road, New Lynn. This Ecological Impact Assessment report is required to identify the ecological values of the site, describe the potential and actual effects that the construction and operation of a school on the site may have on those values and recommend measures to address adverse effects, including possible designation conditions.

The subject site is located in an urban environment currently used for a range of commercial activities, including a panel beaters/car-repair workshop and sales yard, as well as, laser-tag facility and associated carparking. The Manawa Stream flows through the site and features steep (approximately 45 degrees), high (approximately 8 meters) and densely vegetated riparian margins.

This riparian vegetation is recognised in the Auckland Unitary Plan as a Significant Ecological Area due to providing habitat for threatened species. The construction and operation of the school is not expected to require activities within the SEA and accordingly this area is not proposed to be included within the designation. Other vegetation onsite is limited to amenity garden species or grassland. Pest and weed plants are prevalent throughout. Whilst no detailed fauna surveys have been undertaken as part of this study, the Significant Ecological Area vegetation could act as habitat for native birds, lizards and bats that may utilise the subject site on an intermittent basis. The current ecological values of the site have been described using the Environment Institute of Australia and New Zealand (EIANZ) 2018 Ecological Impact Assessment guidelines.

The vegetation onsite is considered to be of Low botanical value. However, considered to be of High ecological value due to the paucity of native vegetation within the urban catchment, the SEA overlay and the native fauna that may utilise the area as potential habitat. Onsite fauna observations were limited to common species, the use of this area by threatened species such as long-tailed bats and native herpetofauna, whilst considered unlikely, cannot categorically be ruled out. 'At Risk - Declining' native freshwater fish have historically been noted in the wider catchment.

The construction and operation of a school has the potential to result in adverse effects on the identified ecological values. The redevelopment of the subject site would likely require the demolition and construction activities involving land disturbance and potentially minor vegetation clearance along with associated noise and vibrations. Land disturbance activities, such as the potential construction of new stormwater outfalls or walking tracks, has the potential to cause sediment discharges to the receiving environment of Manawa Stream. Vegetation clearance could result in the direct mortality of individuals, displacement of nesting sites, and potentially impacting reproductive success. Noise and vibration could lead to mobile individuals avoiding the site during construction.

The redevelopment of the site provides the opportunity to reduce the impervious coverage and provided stormwater management in-line with current industry best practice thereby improving water quality in the receiving environment.

Operational activities, including traffic, have the potential to reduce habitat quality through deterring the use of the subject site as foraging and nesting habitat; however, operational noise generating activities for the school are unlikely to be above the existing levels of the wider urban landscape.

The magnitude of the effect of the construction and operation of a school has been considered. The magnitude of effect considers the degree of effects the likely activities would have above the current urban baseline. The assessment considers the identified effects as either Low or Negligible, being of no discernible to a minor shift away from the baseline. Low and Negligible magnitude of effect was in part based on the existing environmental condition of the subject site, being in a largely urban catchment and in close proximity to a major road. Fauna that utilise the subject site would already be accustomed to a high level of traffic, noise and vibration, as well as, reflect the fragmentation and lack of connectivity of the subject site with other areas of suitable habitat.

Taking into account both the ecological values and the magnitude of effect; the overall level of effect anticipated ranges from Moderate to Very Low.

For all fauna-related effects it is considered that the regional planning provisions of the Auckland Unitary Plan, that would still apply should the Designation be granted provided sufficient provision to ensure any effects of the identified activities are appropriately managed. Regional consents would be required for land disturbance and vegetation clearance activities within the Significant Ecological Area greater than 25 meters square, as such conditions could be placed on the consent requiring any identified effects to be mitigated once those effects are fully established.

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.

As such it is not considered necessary to recommend that any condition be imposed on the Designation to address any of the identified effects.

Contents

Figures

Tables

1.0 Introduction

1.1 Scope

Morphum Environmental Limited (Morphum) was engaged by Incite to prepare an Ecological Impact Assessment (EcIA) to support the lodgment of a Notice of Requirement for the construction and operation of a school at 3094 - 3096 Great North Road, New Lynn.

It is our understanding that the construction and operation of a school could potentially involve activities with the riparian vegetation, that has been noted as a Significant Ecological Area (SEA) in the Auckland Unitary Plan (AUP). It is yet to be deemed if The Ministry of Education would seek to undertake any activities in the SEA; however, any activities would be limited to low impact activities, possibly pathways and minor infrastructure installation (such as stormwater outfalls).

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.

It is recommended that this EcIA is reviewed and revised or an addendum prepared, following any changes to the envisioned activities or designs to ensure the recommendations herein remain relevant.

1.2 Site Overview

The subject site is located at 3094 - 3096 Great North Road, New Lynn. The site is approximately 1.87 ha; bound to the north by Great North Road, to the east by Clarke Street, South by the Western Heavy Rail Line and to the west by the riparian margins of the Manawa Stream. The subject site is zoned Business – Metropolitan Centre Zone under the AUP and is currently used for a range of commercial activities.

Figure 1: Subject Site and SEA Overlay

2.0 Current Ecological Values

The following outlines a high-level assessment of these existing features based on a desktop study and a site visit undertaken on 31 October 2019.

2.1 Site Description

The site is comprised of a series of large, commercial buildings currently occupied by a panel beaters/car-repair workshop and sales yard, as well as, a laser-tag facility. A proportionally large area of the subject site is given over to artificial, impervious surfaces mainly carparking, car storage or buildings. The most significant area of vegetation is located on the banks of the Manawa Stream, this riparian vegetation has been identified as SEA (SEA_T_4711) in the AUP.

Figure 2: Indicative Site Photographs

2.2 Catchment and Receiving Environment

The Manawa Stream catchment above Great North Road is approximately 400 ha of primarily low-density residential land. Immediately upstream of the subject site, south of the railway line; the Manawa Stream converges with the Rewarewa Creek at the Manawa Stormwater Wetland (Auckland Council SAP ID: 3000029553). Immediately north of the railway line, within the subject site, the Manawa Stream converges with Scroggy Stream.

The catchment has significant (more than 25%) impervious surface. Landcare Research (2017) Land Cover Database (LCDB) version 4 describes the land cover as "built up area". Built up areas are considered as commercial, industrial or residential buildings, including associated infrastructure and amenities; having less than 10% indigenous cover and thus "acutely threatened". The reason for this is that "very little native biodiversity remains in these environments." This places the site within the Ministry for the Environment National Priority 1 for Biodiversity Protection – to protect indigenous vegetation associated with land environments at Level IV that have <20% remaining indigenous cover. Biodiversity loss increases dramatically when native vegetation cover drops below 20%.

The exact location of stormwater discharges from the subject site is unknown, although two stormwater outfalls (Auckland Council SAP IDs: 2000782963 and 2000705608) are located within the riparian margins of the Manawa stream immediately upstream and downstream of the subject site.

The Manawa Stream discharges into the Whau Estuary and subsequently the Waitematā Harbour and Hauraki Gulf.

These catchment features are shown on Figure 3 below.

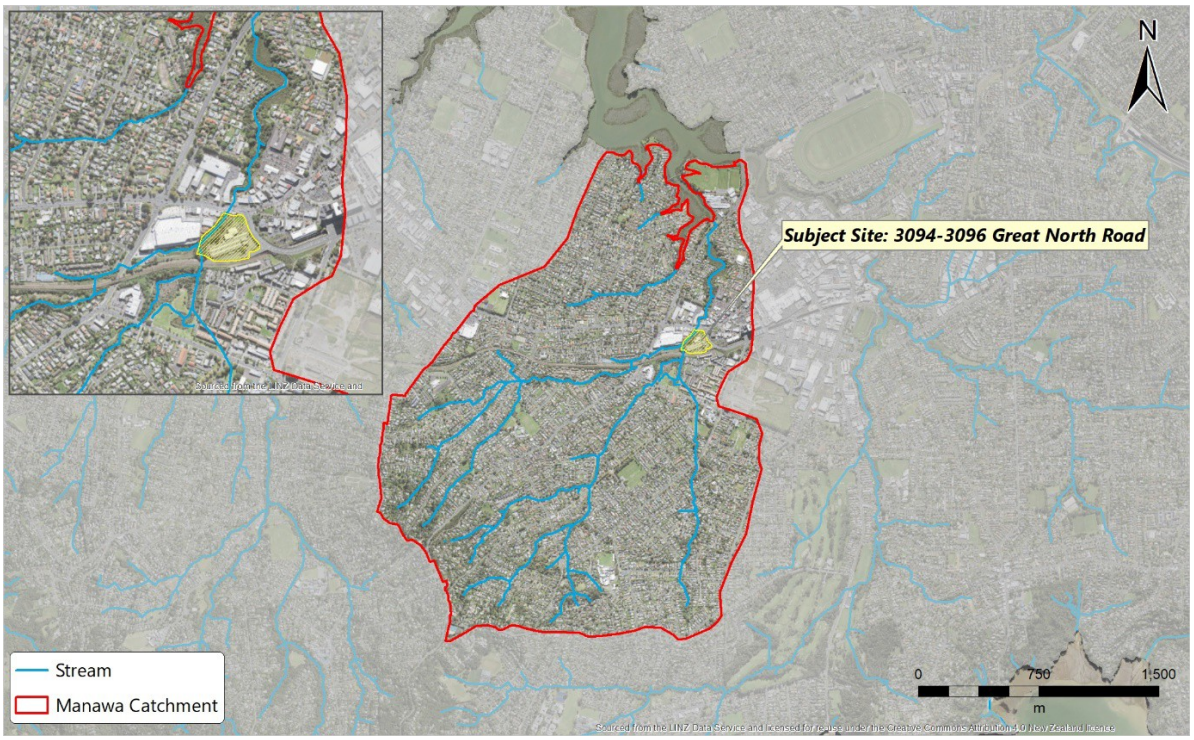

Figure 3: Overview of the Manawa Stream Catchment

2.3 Ecological Context

The subject site is within the Tamaki Ecological District. Only 6.9% of the Tamaki Ecological District remains in indigenous cover, with the original vegetation having been highly modified from early Polynesian occupation through to more recent urban development (Lindsay *et al.* 2009).

The subject site is recorded as having an Ecosystem Potential Extent of WF7, Pūriri forest (Auckland Council, 2019a). Potential extent in this context denotes the predicted representation of native ecosystem as they would occur in today's environment in the absence of humans. WF7, Pūriri forest, has a Regional IUCN threat status of Critically Endangered (Singers *et al.,* 2017). The subject site would prehistorically been represented by sub-category WF7.3, being on alluvial terraces on recent fluvial soils. WF7.3 is typically characterised by abundant Pūriri (*Vitex lucens*); with occasional kahikatea (*Dacrycarpus dacrydiodes)*, kohekohe (*Dysoxylum spectabile)* and nīkau (*Rhopalostylis sapida*).

2.4 Stream

An approximately 185 m reach of the Manawa Stream flows through the site, indicative site photos are shown in Figure 4 below. The wetted width, at the time of survey, was approximately 3.8 m. The reach was characterised by steep, high banks; the banks were approximately 45^0 and 8 m high.

In-stream substrate includes natural gravels with additional diversity in substrate provided by anthropogenic construction debris and refuse. Habitat diversity includes undercut banks, and areas of woody debris. The flow diversity includes run, riffle, and pool sequences. The stream is shaded by the surrounding typography and existing vegetation with comprised mixed exotic and native vegetation. The reach also exhibits benches of deposited fine, sediment and gravels which are sparsely vegetated.

Figure 4: Manawa Stream (Clockwise from top left: Outlet of the Manawa Stream culvert beneath Railway line; typical stream reach through the site; confluence of Manawa and Scroggy streams; Inlet of the Manawa Stream culvert beneath Great North Road)

2.5 Existing Vegetation

During the site visit all vegetated areas were physically inspected by a suitably qualified and experienced ecologist. During these surveys all vegetation types within the subject site were surveyed, described and mapped.

The existing vegetation has been conceptually divided into 3 broad descriptive categories to reflect the dominant ecological values associated with each Zone. Where relevant, broad descriptive zones have been broken down into sub-categories where there are unique vegetation features within each Descriptive Category. Vegetation Categories, Sub-categories and Zones are shown in Table 1 below, and mapped Appendix 1. Further detail for each Zone can be found in the corresponding sections below.

Table 1: Vegetation Zones

Zone Number	Descriptive Category	Sub-category Vegetation Type
1	SEA Vegetation	Recent Riparian Planting
2	SEA Vegetation	Juvenile Native Trees
3	SEA Vegetation	Vegetation Dominated by Pines
4	Exotic Grassland	Exotic Grassland
5	Common Garden Mix	Amenity Garden Mix 1
6	Common Garden Mix	Amenity Garden Mix 2
7	Common Garden Mix	Amenity Garden Mix 3

Auckland Council GeoMaps database identifies no notable or otherwise scheduled trees across the subject site.

2.5.1 Zones 1 – 3: Significant Ecological Areas

Zones 1 – 3 are subject to a SEA overlay. Under the AUP, an area is considered to have significant ecological value if it meets one or more of the sub-factors identified in Schedule 3 of the AUP. The SEA Information Sheet has been obtained from Auckland Council; SEA_T_4711 has been scheduled for meeting Criteria 2: Threat Status and Rarity, sub-factor 2b. Criteria 2, sub-factor 2b is used to describe habitat that supports the occurrences of a plant, animal or fungi that has been assess by the Department of Conservation and determined to have national conservation status of threatened or at risk; or it assed as having a regional threatened conservation status.

The threatened species identified from the SEA Information Sheet are: Longfin eel (*Anguilla dieffenbachii),* Inanga *(Galaxias maculatus)* and Redfin Bully *(Gobiomorphus huttoni).* These species are all native freshwater fish, and as such are discussed further in Section 2.6.4 below.

It is our understanding that Auckland Council was approached regarding the land subject to the SEA being vested in Council. To this end, Auckland Council assessed the area and determined that there was no benefit in public ownership of the land given the protections afforded to it as a SEA in the AUP. The construction and operation of the school is not expected to require activities within the SEA and accordingly this area is not proposed to be included within the designation, as shown on figure 1.

Zone 1

The vegetation categorised as Zone 1 is comprised of recent native re-vegetation planting. A series of flood events beginning on 12th March 2017 led to extensive damage to the Manawa Stream culvert beneath Great North Road. Emergency works to re-instate the culvert required approximately 400 m^2 of vegetation clearance around the culvert inlet. Retrospective resource consent, referred to by Auckland Council as BUN60314909 was sought, and granted. BUN60314909 includes a condition requiring the consent holder to undertake remedial riparian planting of this area.

The replanting works associated with BUN60314909 occurred in September 2018. The planting mix comprises of toe toe (*Austroderia fulvida*), karamu (*Coprosma robusta*), cabbage tree (*Cordyline australis*), flax (*Phormium tenax*), manuka (*Leptospermum scorparium*), mahoe (*Melicytus ramiflorus*), rata (*Metrosideros robusta*), kowhai (*Sophora fulvida).*

Zone 2

The vegetation categorised as Zone 2 is dominated by a mixture of juvenile native vegetation.

The mix comprises of karamu, cabbage tree, flax, manuka, mahoe , mapou (*Myrsine australis)* and nīkau (*Rhopalostylis sapida*). The area also contains a number of pest plants, which are described further below.

Zone 3

The vegetation categorised as Zone 3 is dominated by canopy of mature Monterey Pines (*Pinus radiata)*. Beneath the Pines, sub-canopy is generally lacking and there is a thick groundcover layer of fallen pine needles and bark. Towards the edge of the vegetation, on the stream banks, a limited number of Lemonwood (*Pittosporum eugenioides*), Mamaku (*Cyathea medullaris)* and Mahoe are found, along with a wide variety of pest plants.

Zones 1 – 3: Pest Plants

There is a significant incursion of pest and weed plants throughout Zones 1 - 3. Pest and weed establishment is particularly prevalent in light-wells, where sun light reaches the ground, notably the new area of planting within the Zone 1 and along the stream margins. Table 2 below contains a full list of the pest plants identified during the site visit. In addition to the pest plants identified in Table 2,

bindweed (*Convolvulus spp.),* taiwan cherry (*Prunus campanulate),* onionweed (*Allium triquetum) and* butter cup *(Senna septemtrionalis)* were noted onsite. These species are not officially declared pest species under the Auckland Regional Pest Management Strategy but may compete with or smoother native vegetation.

Table 2: Pest Plants Present

Common name	Scientific name	RPMS status (Auckland Council, 2019b)
Agapanthus	*Agapanthus praecox*	Surveillance – whole region
Arum lilly	*Zantedeschia aethiopica*	Surveillance – whole region
Blackberry	*Rubus fruiticosus agg.*	Surveillance – whole region
Blue morning glory	*Ipomoea indica*	Surveillance – whole region
Brush wattle	*Paraserianthes lophantha*	Surveillance – whole region
Chinese privet	*Ligustrum sinese*	Surveillance – whole region
Climbing asparagus	*Myrsiphyllum scandens*	Surveillance – whole region
Ginger spp.	*Hedychium spp.*	Surveillance – whole region
Ivy	*Hendara helix spp.*	Surveillance – whole region
Japanese honeysuckle	*Lanicera japonica*	Surveillance – whole region
Palm grass	*Setaria palmifolia*	Surveillance – whole region
Pampas	*Cortaderia selloana*	Surveillance – whole region
Scottish thistle	*Cardus acanthoides*	Surveillance – whole region
Tobacco weed / woolly Nightshade	*Solanum mauritianum*	Containment (boundary) – Whole Region
Tradescantia / Wandering jew	*Tradescantia spp.*	Surveillance – whole region
Tree privet	*Ligustrum lucidum*	Surveillance – whole region

2.5.2 Zone 4: Exotic Grassland

The vegetation of Zone 4 is comprised of short, mown, grass as depicted in Figure 5. As observed during the site visit, grassed areas were well maintained for amenity purposes.

Figure 5: Grassland (facing Zone 2)

2.5.3 Zones 5 - 7: Amenity Garden Planting

The vegetation with Zones 5 – 7 is comprised of a limited range amenity garden species. These vegetation areas are generally small areas that provide a landscaping function to the car parking areas as shown by Figure 6 below.

Zone 5 is comprised of juvenile flax (*Tenax spp.),* nīkau and karamu. Zone 5 appears to be relatively well maintained, being free of pest and weeds and with a thick layer of mulch having been recently applied.

Zone 6 is comprised of specimen tree plantings of Birch (*Betula spp.)* with flax planted beneath. Zone 6 has been planted relatively densely, which appears to have limited pest and weed establishment.

Zone 7 features two mature gum trees (*Eucalyptus spp.).* Juvenile flax, tanekaha *(Phyllocladus trichomanoides),* and karamu have established beneath the gums. Vegetation within Zone 7 appears to be ad hoc, unmaintained and has accumulated a dense groundcover of anthropogenic litter.

Figure 6: Amenity Garden Vegetation (Clockwise from top left: Zone 7, Zone 7, Zone 6, Zone 5)

2.6 Fauna

Detailed fauna survey was beyond the scope of the project given the proposed activities and potential habitat on the subject site.

2.6.1 Avifauna

Incidental birdlife was noted during the site visit. Bird species present were common garden species, no threatened or risk species were recorded, refer to Table 3 below. No proximate avifauna observations have been recorded in the citizen science platform ebird. Given the urban nature of the catchment it is considered that a range of other, common, garden species may utilise the area on a temporary basis.

Table 3: Bird Species Observed

Common name	Scientific name	Threat Status (Robertson et al. 2017)
Tui	*Prosthemadera novaeseelandiae novaeseelandiae*	Not Threatened
North Island Fantail	*Rhipidura fulginosa placabilis*	Not Threatened
New Zealand Kingfisher	*Todiramphus sanctus vagans*	Not Threatened
Pukeko	*Porphyrio melanotus melanotus*	Not Threatened
Eurasian Blackbird	*Turdus merula*	Introduced and naturalised
Common Myna	*Acridotheres tristis*	Introduced and naturalised
Rock Pigeon	*Columba livia*	Introduced and naturalised
House Sparrow	*Paser domesticus*	Introduced and naturalised

2.6.2 Herpetofauna

A desktop review was undertaken by EcoGecko (2017) as part of the BUN60314909 resource consenting process. Herpetofauna species found within 5 km radius of the subject site, based on historic records are noted in Table 4 below.

Table 4: Herpetofauna Recorded (within 5 km of the subject site)

Common Name	Scientific name	Threat Status (Hitchmough, 2015)	Preferred Habitat Type
Pacific gecko	*Dactylocnemis pacificus*	At Risk – Relict	Forest
Forest gecko	*Mokopirirakau granulatus*	At Risk - Declining	Forest and scrubland Rock or wood piles, tree hollows, canopy.
Elegant gecko	*Naultinus elegans*	At Risk - Declining	Forest and scrubland Canopy
Copper skink	*Oligosoma aeneum*	Not Threatened	Grasslands, shrubland, forest Waste piles, dense leaf litter, wood or rock piles, compost

The records summarised above may not capture the full extent of lizard distribution or abundance on site as records require physical works to be undertaken onsite and recorded by an appropriately qualified Herpetologist.

Whilst Pacific gecko were recorded within close proximity to the subject site in 1969 and 1980, it is considered unlikely that arboreal lizard species persists in this urban environment.

It is considered possible that terrestrial lizards may be present on site, with copper skinks being the most likely to inhabit the area given the urban context and the available habitat.

2.6.3 Bats

Populations of the native long-tailed bat (*Chalinolobus tuberculatus)* are known in the Waitakere Ranges. Long-tailed bats feed on the wing and often feed on riparian and forest margins where invertebrate life is more abundant. Native bats often utilise streams as movement corridors and can forage over 50 km in a single night along watercourses. Long-tailed bats prefer to roost in larger, older, canopy trees with cavities, epiphytes and loose bark. Such habitat on the subject site is limited to the older pines within Zone 3. It is therefore considered possible, although unlikely given the urban catchment, that long-tailed bats could use the area as habitat on an intermittent basis.

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.

2.6.4 Fish

As noted above, SEA_T_4711 has been scheduled for providing a habitat for threatened native freshwater fish as summarised in Table 5.

Table 5: SEA_T_4711 Threatened Species

Common Name	Scientific Name	Threat Status Dunn *et al.* 2017)	Year of Last Record
Redfin bully	*Gobiomorphus huttoni*	Not Threatened	2004
Longfin eel	*Anguilla dieffenbachii*	At Risk - Declining	2003
Inanga	*Galaxias maculatus*	At Risk - Declining	2004

Table 6 shows addition records from the National Institute of Water and Atmospheric Research (NIWA) New Zealand Freshwater Fisheries Database (NZFFDB) for the Manawa Stream catchment.

One unidentified eel species was observed during field work.

Table 6: NZFFDB Records for the Manawa Stream 1998-2019 (Dunn *et al.* 2017).

Common Name	Scientific Name	Threat Status (Dunn *et al.* 2017)
Shortfin eel	*Anguilla australis*	Not Threatened
Longfin eel	*Anguilla dieffenbachii*	At Risk - Declining
Common bully	*Gobiomorphus cotidianus*	Not Threatened
Redfin bully	*Gobiomorphus huttoni*	Not Threatened
Banded Kokopu	*Galaxias fasciatus*	Not Threatened
Inanga	*Galaxias maculatus*	At Risk - Declining
Mosquitofish	*Gambusia affinis*	Introduced and naturalised
Unidentified eel	-	-
Unidentified galaxiid	-	-

The waterfall at the inlet to the culvert beneath Great North Road is likely to be a partial fish passage barrier.

2.6.5 Pests

No pest animals were noted during the site observation although it is considered likely that, at a minimum, rats (*Rattus rattus, Rattus norvegicus & Rattus exulans)* and mice (*Mus musculus*) survive within the wider urban area.

2.7 Summary of Ecological Values

The current ecological values of the site have been described based from on-site, in-field observations in conjunction with a review of the available literature and databases. A summary of this information is presented in Table 7 based on the Environment Institute of Australia and New Zealand (EIANZ) 2018 Ecological Impact Assessment guidelines set out in Appendix 2 (Tables 11 - 14).

Table 7: Assessment of Current Ecological Values

Impact	Ecological Value (EIANZ, 2018)	Reasoning
Vegetation	**High**	Vegetation has been scheduled for supporting nationally threatened species and is noted as being an "acutely threatened" environment
Avifauna	**Low**	Species presence limited to nationally and locally common indigenous species
Herpetofauna	**High**	Potentially supports At Risk – Declining species
Bats	**Very High**	Potentially supports long-tailed bats which are classified as Threatened – Nationally Critical, notwithstanding actual habitat value in effect are low
Native Freshwater Fish	**High**	The Manawa stream is known to support longfin eel which are classified as Threatened At-Risk - Declining

The onsite vegetation onsite is considered to be of low botanical value. The vegetation with Zones 1 – 3 is comprised of recent native re-vegetation planting; common, juvenile native vegetation or dominated by mature pines. Other vegetation is limited to grass or juvenile amenity plantings. The vegetation onsite is not considered to be consistent with WF7 Pūriri forest and no notable or otherwise scheduled trees are found within the subject site.

Whilst the vegetation is not considered to be of botanical note, it is considered to be of high ecological value due to the paucity of native vegetation within the urban catchment, the SEA overlay and the native fauna that may utilise the area as potential habitat. Riparian vegetation plays an important role in regulating the aquatic environment; diffusing and delaying overland flows, providing organic matter input, shading and regulating the stream temperature which contributes to the values for which the area has been scheduled as a SEA. Although not noted for providing a connectivity function, the riparian vegetation within the SEA overlay is considered likely to support species migrating or foraging across the wider landscape.

Whilst onsite fauna observations were limited to common species, the use of this area by threatened species such as long-tailed bats and native herpetofauna, whilst considered unlikely, cannot categorically be ruled out. Therefore, in preparing an assessment in Table 7, a conservative approach has been taken where it is assumed such species may be found on the subject site.

3.0 Proposed Activities

This EcIA has been prepared to support the lodgment of a Notice of Requirement for the construction and operation of a school site at 3094 - 3096 Great North Road, New Lynn.

The Ministry of Education's (2016) Standard Methodology for Site Evaluations notes that a site on which the construction and operation of a school has the potential to have adverse effects on the ecological environment will score lower than a site where ecological effects are avoided or are very minor.

The types of activities considered to likely be required in the construction and operation of a school are set out below. The nature and scale of these effects are placed in the context of the wider urban environment and the relevant regional planning provisions of the AUP that apply to the likely activities and that will still apply to those likely activities regardless of the outcome of the Notice of Requirement process.

3.1 Construction Activities

The redevelopment of the subject would likely first require the removal of the existing buildings and impervious surfaces.

It is understood that development or large-scale vegetation clearance within the SEA is not proposed. Morphum understands that this area is not considered 'practicably developable' due to the step banks and SEA overlay. Activities that would potentially occur within the SEA overlay would be limited to low impact activities such as pathways and possibly infrastructure installation, such as stormwater outfalls.

3.1.1 Vegetation Clearance

At this stage no vegetation clearance is directly anticipated although the construction activities may necessitate the removal of the grassed and amenity garden planting areas.

The effects of vegetation removal will depend on the species and extent of the removal. While recognising that exotic species can provide habitat functions, the removal of the amenity garden species is not considered to generate adverse environmental effects given the species present and ecological value of these.

Should any vegetation removal occur within the SEA this 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.

3.1.2 Land disturbance

For all land disturbance activities, such as the construction of new stormwater outfalls, walking tracks and building demolition there is a risk of uncontrolled sediment discharge to the Manawa Stream.

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
- Changes to water quality, including physio-chemical indicators pH and clarity
- Reduced amenity and recreational-use values

- Decreased photosynthesis by aquatic plants leading to subsequent decreased levels dissolved oxygen in the stream
- Mobilisation of contaminants (heavy metals) bound to the sediment.

Sediment related effects would not only occur within the adjacent Manawa Stream but could accumulate in the wider receiving environment, in particular the Whau Estuary.

3.1.3 Noise and Vibration

The demolition of the existing buildings and the construction of new school buildings will likely involve the use of machinery and traffic that would generate noise and vibrations. Noise and vibrations have the potential to reduce the quality of retained habitat for the duration of works.

There is little published information on the noise and vibration on the species identified as potentially utilising the area as habitat. It is considered that noise and vibration could lead to mobile individuals avoiding the site during construction.

3.2 Operational Activities

Only conceptual design details have been reviewed as part of the preparation of this EcIA. The information contained no immediate concerns from an ecological perspective. The concept design included the provision for boardwalks within the SEA, as such an assessment of the ongoing use of this area has been included below, otherwise the assessment has drawn on activities considered likely in the school environment.

3.2.1 Stormwater Management

The subject site currently features a high degree of imperviousness. The redevelopment of the site provides the opportunity to reduce the impervious coverage, as shown in the conceptual plans, and provided stormwater management in-line with current industry best practice Water Sensitive Urban Design (WSUD) and the use of inert building materials.

Stormwater discharges can be conceptually separate into two different types of potential effects: hydrological and the effects on water quality in the receiving environment.

The change in hydrology, unless managed, can have a significant adverse effect on streams within the catchment, including accelerating river and stream erosion and bank instability, creating hydrological conditions that do not support healthy aquatic ecosystems.

The building material used, and the type of activities undertaken can also generate a range of contaminants that can be mobilised and discharged offsite with the stormwater. Both point source and diffuse discharges from urban activities, can affect freshwater quality and ecosystem health.

Auckland Council provides guidance on applying WSUD in GD04. WSUD approaches reduces the potential for adverse water quality effects from point-source stormwater discharges to occur.

3.2.2 Traffic

Traffic can create a range of anthropogenic disturbances such as movement, noise and light disturbance. Any traffic related ecological effects would likely be limited to the existing street frontages and the school pick-up/drop-off areas and as such be located away from the SEA vegetation located towards the rear and least accessible parts of the site. Traffic related disturbances may reduce the quality of the site to act as habitat through the determent of nesting sites and foraging, potentially impacting

reproductive success. Although given the location and the habitat in close proximity to street frontages the level of effect may only be slightly above existing levels.

3.2.3 Noise

The ongoing operational of the school may generate noise, through the ringing of the school bell and outdoor activities. Noise may reduce the quality of retained vegetation as habitat for any native species potentially utilising the area as habitat. Noise generating activities are most likely to be undertaken in close proximity to the existing street frontage where site contours are more suited to playgrounds, and therefore be located away from the higher ecological quality habitat of the SEA vegetation.

3.3 Summary of Proposed Activities

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 and potentially minor vegetation clearance and associated noise and vibrations. The operational activities of the school are envisioned to included traffic movements and noise generating activities.

It is yet to be deemed if The Ministry of Education would seek to undertake any activities in the SEA. Activities that would potentially occur within the SEA overlay would be limited to low impact activities such as pathways and possibly infrastructure installation, such as stormwater outfalls that would require minimal vegetation clearance and land disturbance. Any traffic related ecological effects would likely be limited to the existing street frontages and the school pick-up/drop-off areas and as such be located away from the SEA vegetation located towards the rear and least accessible parts of the site. Noise generating activities are most likely to be undertaken in close proximity to the existing street frontage where site contours are more suited to playgrounds, and therefore be located away from the higher ecological quality habitat of the SEA vegetation. Operational noise generating activities for the school are unlikely to be above the existing levels of the wider urban landscape.

The redevelopment of the site provides the opportunity to reduce the impervious coverage, and provided stormwater management in-line with current industry best practice thereby improving water quality in the receiving environment.

4.0 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 2 (Tables 11 – 14).

As part of this assessment it is important to highlight to the reader that this EcIA has been prepared to support Incite and the Ministry of Education in the Notice of Requirement application of the subject site for the construction and operation of a new school. Should the Ministry of Education be successful, the regional provisions of the AUP will still apply. The existing urban environment has also been taken into account. The Wildlife Act (1953) also contains measures that would apply to the ecological values of the subject site. Further details on these relevant matters have been provided below.

4.1 Relevant Planning Provisions

The regional provisions of the AUP that apply to the likely activities that would be undertaken in the construction and operation of a school are set out in Table 8 below. 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.

Table 8: Regional Provisions of the AUP

Activity	Existing provisions within the AUP
Vegetation Clearance	• Rule E15.4.1(A19) *vegetation alteration or removal within 10m of urban streams is* a restricted discretionary activity when undertaken within a SEA overlay. • Rule E15.4.2(A43) *any vegetation removal not otherwise provided for* as a discretionary activity when undertaken within a SEA overlay.
Land disturbance	• Rule E3.4.1 (A39) *A stormwater or wastewater outfall complying with the standard in E3.6.14 is* a discretionary activity when undertaken within a SEA overlay. • Rule E11.4.1(A28 and A30) *land disturbance exceeding 5 m^2 (A28) or 5 m^3 (A30)* is a restricted discretionary activity within a SEA overlay. • Rule E11.4.1(A9) *land disturbance over 2,500m^2 within the Sediment Control Protection Area* is a restricted discretionary activity outside a SEA overlay. • Standard E11.6.2(2) requires that best practice erosion and sediment control measures must be implemented for the duration of land disturbance, regardless of the activity status.

4.2 Urban Context

As identified above the subject site is in an existing urban environment and is currently used for a range commercial/industrial activities. Any fauna utilising the subject site as habitat, would have already responded to this existing environment.

Jacobs (2019) anticipate that the operation of the school would require an additional 500 return vehicle trips per day. Both Clarke Street and Great North Road are Regional routes and have an annual average daily traffic volume of 15,100 and 18,200 vehicles/day. Traffic is also considered to likely contribute noise and vibrations such that the ongoing operation of the school is unlikely to have any additional adverse effects on the site's ecological values.

The relevant stormwater provisions would depend on the stormwater management approach undertaken which is subject to detailed design. The AUP 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.

4.3 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 require for any harm to these species.

4.4 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 9 below. Table 9 provides an interpretation of effects against standard terms used under the RMA and a brief explanation. The assessment undertaken for Table 9 has assumed an ecological worst case scenario where the threatened species is present on site.

Table 9: Criteria for Describing Magnitude of Effect (summarised from EIANZ, 2018)

Impact	Ecological Value (EIANZ, 2018)	Magnitude of Effect and Reasoning	Level of Effect
Vegetation Clearance	High	Low – minor shift away from baseline condition. Any discernible changes would be subject to resource consenting requirements.	**Low**
Avifauna	Low	Low – minor shift away from baseline condition. Any discernible changes would be subject to resource consenting requirements and subject to the Wildlife Act.	**Very Low**
Herpetofauna	High	Low – minor shift away from baseline condition. Any discernible changes would be subject to resource consenting requirements and subject to the Wildlife Act.	**Low**
Bats	Very High	Low – minor shift away from baseline condition. Any discernible changes would be subject to resource consenting requirements and subject to the Wildlife Act.	**Moderate**
Native Freshwater Fish	High	Negligible – assuming that the redevelopment of the site implements WSUD, the hydrological and water quality effects of stormwater discharges are likely to improve. Improved discharge quality is likely to have a negligible, positive effect on native freshwater fish habitat.	**Very Low**

The highest level of effect within the scope of the assessment undertaken relates to bats, where the level of effect is described as Moderate. The potential effect on native herpetofauna has been ascribed the worst case scenario of Low. This assessment assumes the worst-case scenario, that the old pines are occupied by native bats as roosting sites, and that these pines would be felled, along with the vegetation comprising suitable lizard habitat would be cleared. Such vegetation clearance is not currently proposed and would require consent under the provisions of E15 as such Auckland Council could place conditions on any consent, should consent be applied for, that would require this effect be mitigated. As such it is not considered that condition 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 10 below, this is commensurate with less than minor adverse effects. It should be noted that this vegetation removal would still be subject to the same consenting requirements as per the discussion above. Redevelopment of the site provides the opportunity to bring the site's stormwater management approach in-line with current industry best practice.

Table 10: Interpretation of Effects Against Standard Terms (modified from EIANZ, 2018)

Level of effect	Interpretation	
Very High	Unacceptable adverse effects	Extensive adverse effects that cannot be avoided, remedied, or mitigated
High	Significant adverse effects	An effect that is noticeable and will have a serious adverse impact on the environment but could potentially be mitigated or remedied
Moderate	More than minor	Adverse effects that are noticeable and may cause an adverse impact but could be potentially mitigated or remedied
Low	Minor adverse effects	Adverse effects that are noticeable but that will not cause any significant adverse impacts
Very Low	Less than minor adverse effects	Adverse effects that are discernible day to day effects but too small to adversely affect the environment or other persons
Nil Effects	Nil effects	No effects at all

5.0 Conclusions and Recommendations

Morphum were engaged by Incite to prepare this EcIA to support the Ministry of Education in the lodgment of a Notice of Requirement for the construction and operation of a school at 3094 - 3096 Great North Road, New Lynn.

The subject site is currently used for a range of commercial activities, including a panel beaters/car-repair workshop and sales yard, as well as, laser-tag facility and associated carparking. A proportionally large area of the subject site is given over to artificial, impervious surfaces mainly carparking, car storage or buildings. The most significant area of vegetation is located on the true right bank of the Manawa Stream towards the site's western boundary. Vegetation on the true right bank of the Manawa Stream is subject to a SEA overlay, SEA_T_4711. SEA_T_4711 has been scheduled for meeting Criteria 2: Threat Status and Rarity, sub-factor 2b. The threatened species identified from the SEA Information Sheet are: Longfin eel, Inanga and Redfin Bully; native freshwater fish.

Whilst the vegetation is not considered to be of high botanical note, it is considered to be of high ecological value due to the lack of native vegetation within the urban catchment, the SEA overlay and that the native fauna that may utilise the area as potential habitat. Riparian vegetation plays an important role in regulating the aquatic environment; diffusing and delaying overland flows, providing organic matter input, shading and regulating the stream temperature which contributes to the values for which the area has been scheduled as a SEA.

Other vegetation onsite is limited to amenity garden species or grassland. Pest and weed plants are prevalent throughout.

The SEA vegetation on the site likely supports habitat for common native birds which may utilise the subject site on an intermittent basis. The use of this area by threatened species such as long-tailed bats and native herpetofauna, whilst considered unlikely, cannot categorically be ruled out. Ecological values have been described using the EIANZ (2018) Ecological Impact Assessment guidelines.

The construction and operation of a school has the potential to result in adverse ecological effects. The redevelopment of the subject would likely require the demolition and construction activities involving land disturbance and potentially minor vegetation clearance and associated noise and vibration. Ongoing school operations would likely require stormwater discharges, traffic and noise. These activities could potentially affect any fauna that potential utilise this area as foraging and habitat through the direct mortality of individuals, deterring the use of nesting sites, potentially impacting reproductive success.

The magnitude of these effects has been considered as either Low or Negligible using the EIANZ Ecological Impact Assessment guidelines. The magnitude of effect considers the current ecological values of the site and the degree of effects the likely activities would have above the current urban baseline.

Considering both the ecological values and the magnitude of impacts, the overall level of effect ranges from Moderate to Very Low. Should the mature pines be felled, which is not currently proposed, the level of effect on native bats has been assessed as Moderate due to the high mobility of long-tailed bats and the suitable foraging and roosting habitat on the subject site. For all fauna-related effects it is considered that the regional planning provisions of the AUP that apply to land use activities, including vegetation clearance include sufficient provision to ensure that effects of long-tailed bats can be appropriately mitigated. Should any resource consent be applied for, Auckland Council could place conditions on the consent, that would require this effect be appropriately managed.

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.

As such it is not considered necessary to recommend that any condition be imposed on the Designation to address any of the identified effects.

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Appendix 1 Vegetation Zones

VEGETATION ZONES

Zones:

- Z1, Z2, Z3 — SEA
- Z5, Z6, Z7 — Amenity Garden
- Z4 — Grassland
- Manawa Stream

Client INCITE

Project **NEW LYNN SCHOOL**

0 30 60 m

Project no. P02389

Date 2 Dec 2019

Drawn CU

Approved JS

This plan may contain errors or omissions or may not have the spatial accuracy required for some purposes. 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.

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Appendix 2 Assessment of Effects Methodology

Table 11: Assigning Value To Species, Vegetation And Habitats (Summarised From EIANZ, 2018)

Value	Species Values	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

Table 12: 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.

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

Table 13: Criteria for Describing Level of Effects (from EIANZ, 2018)

Ecological Value / Magnitude	Very High	High	Moderate	Low	Negligible
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

Table 14: Interpretation of Effects Against Standard Terms (modified from EIANZ, 2018)

Level of effect	Interpretation	
Very High	Unacceptable adverse effects	Extensive adverse effects that cannot be avoided, remedied, or mitigated
High	Significant adverse effects	An effect that is noticeable and will have a serious adverse impact on the environment but could potentially be mitigated or remedied
Moderate	More than minor	Adverse effects that are noticeable and may cause an adverse impact but could be potentially mitigated or remedied
Low	Minor adverse effects	Adverse effects that are noticeable but that will not cause any significant adverse impacts
Very Low	Less than minor adverse effects	Adverse effects that are discernible day to day effects but too small to adversely affect the environment or other persons
Nil Effects	Nil effects	No effects at all