

Drury West Secondary School and ECE

Integrated Transport Assessment

Prepared for Ministry of Education

Prepared by Beca Limited




19 January 2021



Revision History

Revision N°	Prepared By	Description	Date
0.1	Kara Hartshorne	First draft for client and legal review	28/03/19
0.2	Kara Hartshorne	Second Draft for Auckland Council	05/04/19
0.3	Kara Hartshorne	Third Draft including pre-application comments from Auckland Council and Auckland Transport	12/06/19
0.4	Skip Fourie	Updated Draft ITA for comment	08/12/2020
1.0	Skip Fourie	Final ITA	19//01/2021

Document Acceptance

Action	Name	Signed	Date
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1 Introduction

1.1 Background

This Integrated Transport Assessment (ITA) has been undertaken by Beca Limited (Beca) on behalf of the Ministry of Education (Ministry) to support the proposed designation of land for a new secondary school (Years 7 – 13) and an early childhood education centre (ECE) in Drury West, Auckland. The site location is shown on **Figure 2-1**.

This ITA provides a high-level transport assessment recognising that the timing and nature of the future growth in this area is still uncertain, as well as dynamic in the current policy setting of Auckland Council (AC). Irrespective, this ITA identifies potential transport effects on the basis of known future networks and makes recommendations to address any potential adverse transport effects that may arise from the operation of the school and ECE.

The Supporting Growth Programme is planning for growth in Auckland, including the south, where the school and ECE site will be located. Specifically, the Programme is investigating and planning the transport network to support Auckland's urban growth over the next 30 years. There is also development occurring in surrounding area including in the Auranga Precinct, as well as more recent plan changes in the Drury West area.

1.2 Timing and Staging

The Minister of Education (the Minister) has not announced an opening date for the secondary school and /or ECE on this site and this will largely be subject to the uptake and occupation of residential growth in the surrounding area.

It is anticipated that the school will have a small roll of foundation students that will grow gradually over time. For the purposes of the Ministry's Schools Network Planning, a foundation roll of approximately 200 – 300 students have been assumed and roll growth to approximately 2,500 students over the following 15 years is predicted. The ECE is anticipated to have a roll of 50 children and 10 staff when fully operational.

1.3 Liaison with Auckland Transport and the Waka Kotahi NZ Transport Agency

Meetings were undertaken with Auckland Transport (AT) and the Waka Kotahi NZ Transport Agency (Waka Kotahi) in 2019 to assist with developing this ITA. At an earlier meeting (14th March 2018) to discuss the Notice of Requirement (NoR), it was agreed that modelling was not required for the SH22/Jesmond Road intersection or within the Auranga development area. This is further discussed in Section 4 of the report.

A pre-application meeting was held with AC and AT on 15th April 2019 with a draft ITA circulated ahead of the meeting. Written preliminary pre-lodgement feedback was received from AT and AC and these comments have been incorporated within this ITA.

Further meetings have been scheduled in November and December 2020 to expand on the inputs already received from AC, AT and Waka Kotahi. The ITA will be updated with an addendum once more information is available.

1.4 Structure of Report

The ITA is structured as follows:

- Chapter 2 discusses the land use and transport environment
- Chapter 3 describes the proposed development of the site for a secondary school and ECE
- Chapter 4 predicts the mode share and trip generation for the site
- Chapter 5 provides a high-level assessment of the transport impacts
- Chapter 6 provides a summary, together with the conclusions and recommendations.

2 Land Use and Transport Environment

2.1 Location

The site subject to this notice of requirement comprises land at 281, 401 and 341 Jesmond Road as shown outlined and shaded in yellow below, hereafter referred to as 'the site'.

The site is located in Drury West approximately 39km south of the Auckland CBD, 19km south of Manukau City and 8.5km south-west of Papakura. The site is approximately 3km west of Drury township. Approximately 1.4km to the east of the site is State Highway 1 (SH1) and approximately 1.5km to the south of the site is State Highway 22 (Karakara Road).



Figure 2-1: Location of the Secondary School and ECE Site

2.2 Surrounding Land Use

Private Plan Change 6 (PC 6) – Auranga (B1) Drury West to the Auckland Unitary Plan: Operative in Part (AUP) was made operative in full on 14 February 2020 and zoned the site from “Future Urban” to “Residential Mixed Urban”. Auranga B1 proposes to develop approximately 1,300 residential dwellings.

Karaka and Drury Ltd “KDL” are implementing a new residential development within Drury 1 Precinct (Auranga A). The site is located within the Auranga B1 development area. If implemented, Auranga A and B1 will provide for approximately 3,000 residential dwellings.

The foundation roll students (secondary and ECE) are likely to come firstly from the Auranga A development, followed by Auranga B1, and then the Future Urban Zoned (FUZ) land to the west and the south of the site. The proposed secondary school site in relation to the Auranga A & B1 development and the FUZ is shown on **Figure 2-2** and **Figure 2-3**. It is also noted that Plan Change 51 for the next stage of Auranga, south of B1 and bordering SH22 has been lodged recently.

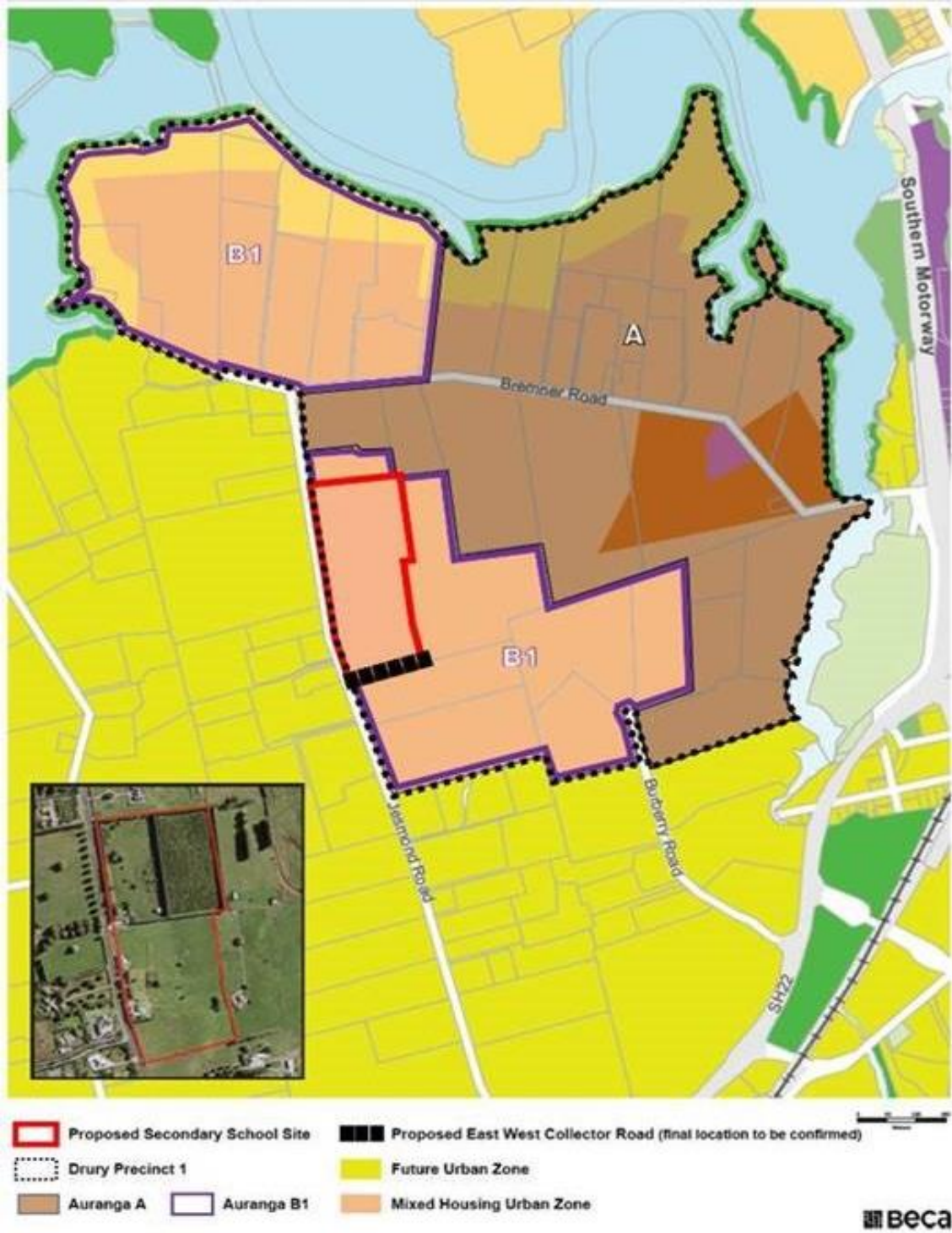


Figure 2-2: Proposed Drury West Secondary School and ECE Site in relation to Auranga A and B1

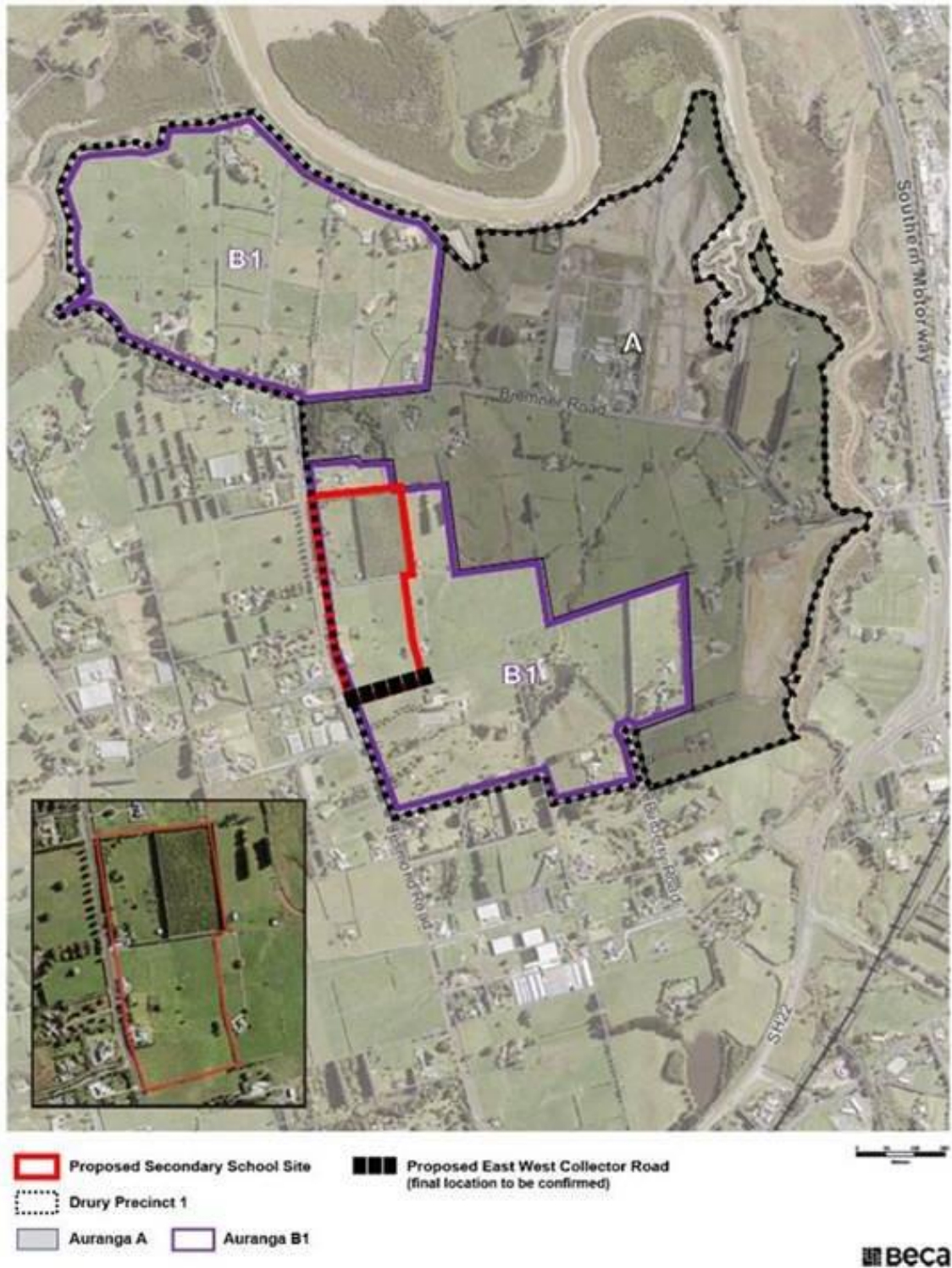


Figure 2-3: Proposed Drury West Secondary School and ECE Site in relation to Auranga A and B1

The current surrounding land use is predominantly rural and rural-residential land use as seen in **Figure 2-4**. When Auranga has been completed and the FUZ land is developed the school and ECE will be centrally located within the overall residential catchment.

2.3 Existing Transport Network

2.3.1 Existing Road

Jesmond Road is currently an existing local rural road that connects with Bremner Road in the north and SH22 to the south (refer to **Figure 2-4**). It currently provides local access to rural residential properties and a local business. The posted speed limit on Jesmond Road is 60km/hr and provides for one lane in each direction with a centre line. The school site is approximately 1.5km from the intersection with SH22 and 425m from the intersection with Bremer Road.



Figure 2-4: Jesmond Road looking north towards Bremner Road (4th February 2019)

2.3.2 Existing Public Transport Network

No public bus services operate close to the school site and the only service in the vicinity is Route 376, which travels between Papakura rail station and Drury. The provision of future bus services is the responsibility of AT.

The nearest train station is in Papakura on the Southern Line, which is approximately 9km from the site. Although this is a considerable distance from the school site, parents have the opportunity to drive to the station after dropping children off at the school and ECE and catch the train into the city.

2.3.3 Existing Walking and Cycling Network

The immediate surrounding area is rural and rural residential and does not have a walking and cycling network. Jesmond Road has no on or off-road pedestrian and cycling facilities.

2.4 Future Transport Network

2.4.1 Staging of the Future Road Network

As set out in PC6 – *“The transport provisions for Precinct Plan 2 recognise that Auckland Transport and the NZ Transport Agency have not yet completed planning the strategic transport network for the wider Drury area including the Future Urban zones to the west and south of the Drury 1 Precinct. The precinct provisions recognise and support future strategic transport connections which may be required to and through the precinct - in particular Jesmond Road and the new east-west road (Future Collector Road)”*.

“The Jesmond Road / SH 22 intersection upgrade is required prior to development in Precinct Plan 2. Other transport infrastructure upgrades outside of the precinct have not been prescribed in the same manner. However, the Precinct recognises the potential for adverse traffic effects at five identified intersections and the Norrie Road one-way bridge. Those effects will be assessed at the time of subdivision applications and required upgrades or other mitigation determined at that time”¹.

There is currently no known development planned along Jesmond Road and, as such, the timing and staging of the upgrade of Jesmond Road is not known. Further, the land zoned FUZ to the west or south does not have an approved plan change and the Supporting Growth Programme is still to confirm the future transport network in this area.

2.4.2 Supporting Growth Programme

As part of the Supporting Growth Programme, the public were consulted (in 2018) on two options for improving connections for Drury-West and Opāheke. Both these options propose a new north south corridor between an “east-west connection” and the new expressway. The two options include:

- Option 1: One corridor for all transport modes (cars, buses, walking and cycling). A new north-south link between the east-west corridor and the new expressway. This could be a frequent bus carrier connecting the train stations, centres and employment areas.
- Option 2: Two corridors:
 - 2(a) Greenfields alignment between Jesmond Road and Oira Road- A new north-south corridor prioritising public transport. This could be a frequent bus carrier connecting the train stations, centres and employment areas.
 - 2(b) Jesmond Road – A new north south corridor for cars, walking and cycling.

Both these options include a proposed new train station in close proximity to a town centre. It is noted that the preferred transport network and timeframes are yet to be endorsed by both Waka Kotahi and AT Boards (this is anticipated during June 2019). As such, these are only indicative corridors and have no statutory weighting.

2.4.3 Drury-Opapeke Structure Plan – August 2019

The Drury Opapeke Structure Plan has been finalised (dated August 2019) following public consultation. According to the Structure plan feedback - *The importance of the new roads and infrastructure being built as*

¹ Plan Change 6, Auranga B1 Drury West, Operative 14 February 2020

soon as possible, particularly before any significant development occurs. There was a general support towards the proposed transport network as a whole and improved connectivity – including specific comments on the road network, public transport and walking and cycling.

The proposed transport network (Figure 2-5) identifies the following key roads adjacent to the site:

- **Arterial Network**
 - New east-west strategic connection (Bremner Road extension) between Jesmond and Great South Roads. With frequent and express bus services.
 - Upgrade Jesmond Road between Bremner Road and SH 22.
- **Collector Road Network**
 - The new East-West Collector Road



Figure 2-5: Drury Opaheke Structure Plan Aug 2019 - Transport Network

It is noted that the proposed transport network included in the Structure Plan is based on the transport network which is subject to Waka Kotahi and AT Boards approvals and are therefore indicative only and subject to change. The consultation draft Structure Plan is consistent with the assumptions in the ITA, where Jesmond Road, along the school frontage, is identified as an Arterial Road with connector/local bus services.

2.4.4 Jesmond Road

Jesmond Road is on the western frontage of the site and is identified to be upgraded to a Collector Road (Existing) in the AUP as seen in **Figure 2-6**.

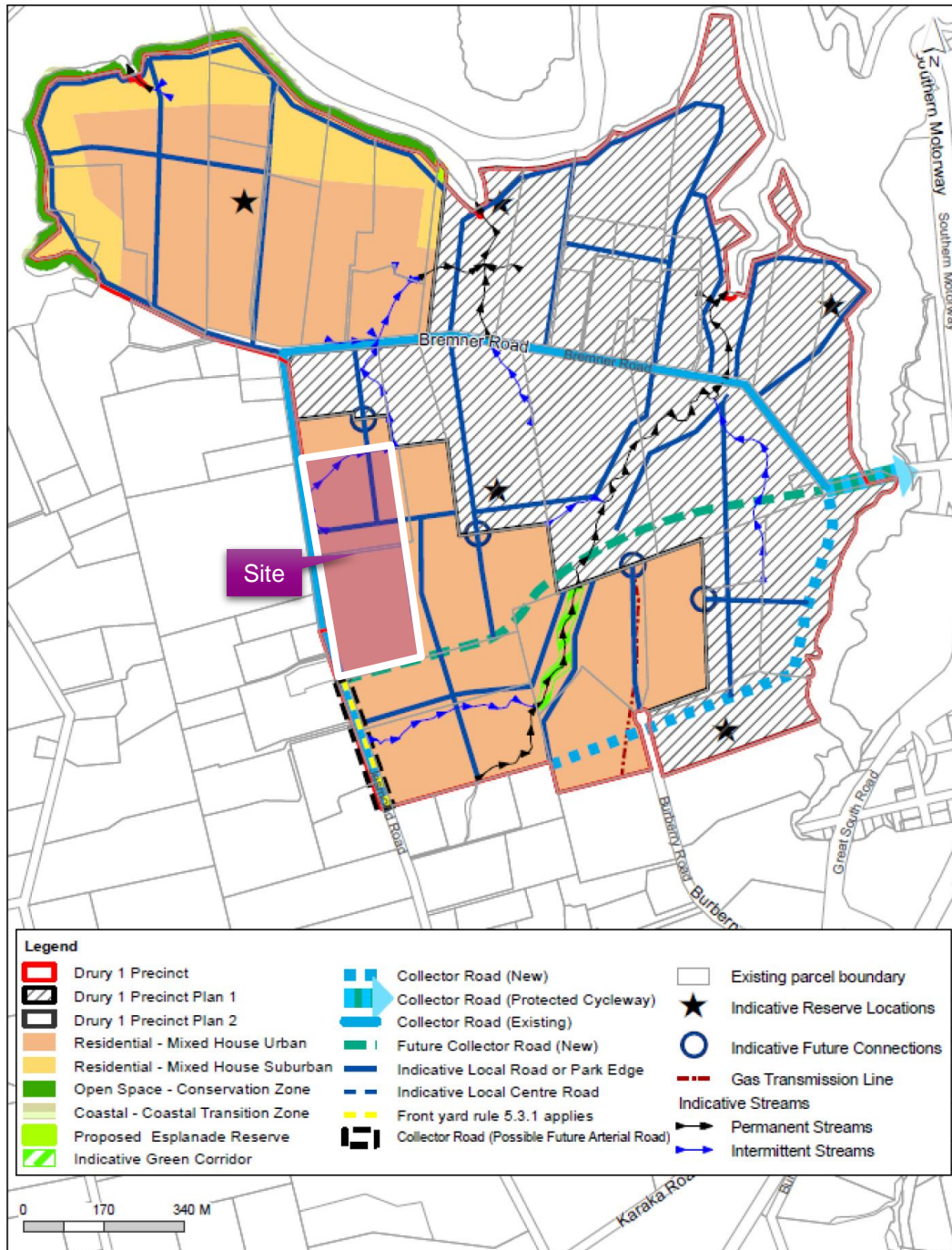


Figure 2-6: Drury Precinct Plan 2 – AUP - Drury 1 Precinct

A short distance of Jesmond Road, along the site frontage, is identified to be upgraded to Collector Road (Future Arterial Road). It is recognised that the length of Jesmond Road which fronts the school will be provided by developers and vested in AT when upgraded.

The characteristics of the Collector Road are shown on the cross section below in **Figure 2-7** as included as in the Drury 1 section of the AUP. This includes a wide road reserve with:

- Two traffic lanes of 3 – 3.5m wide
- 3m shared path on both sides of the road
- 1.8m – 2.2m on-road cycle lane on both sides
- A wide landscape strip (2.2 – 2.6m) with street trees, stormwater devices and parking on both sides

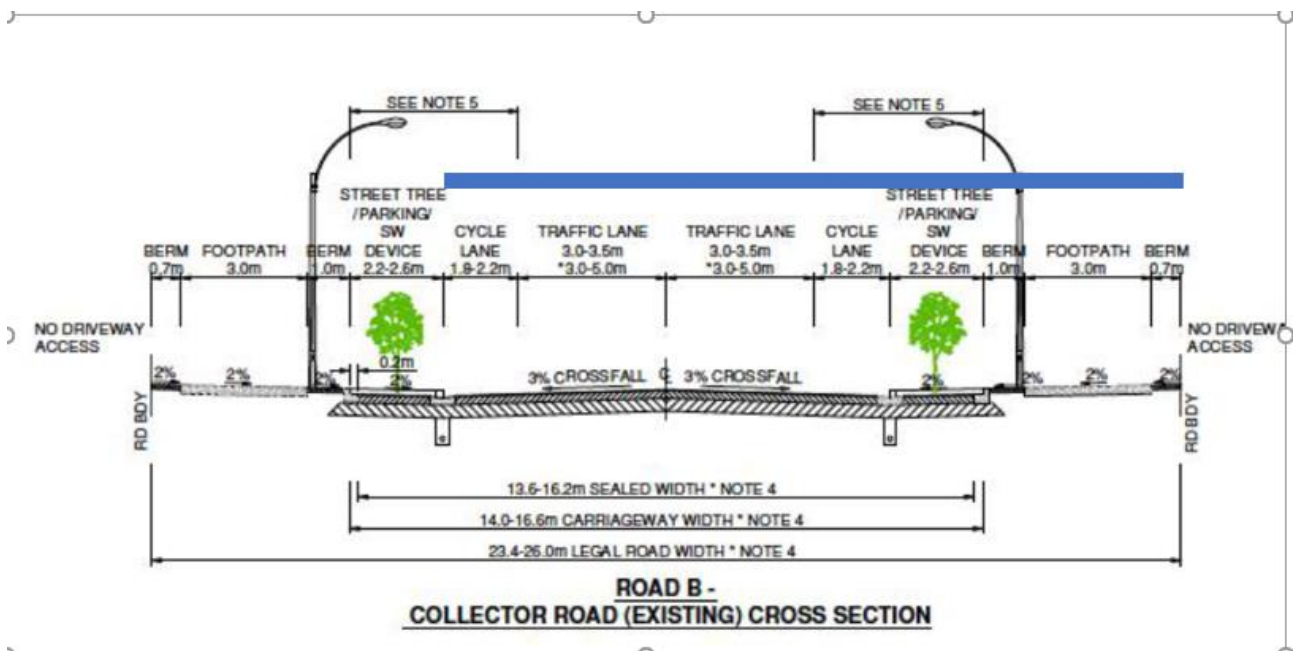


Figure 2-7: Indicative Cross Section of Collector Road (Existing)²

The existing road reserve of Jesmond Road on the school frontage is approximately 20m. It is anticipated that the existing road reserve width will be able to accommodate a cross section from the school boundary (right hand side of cross section) to the left hand side of the cross section kerb of 18.7m + 1.3m berm without the need for land acquisition. The 18.3m width from the school boundary on the right to the kerb on the left is shown in blue on **Figure 2-7** above and includes the following:

- 0.7m berm
- 3m footpath/shared path
- 1m berm
- 2.6m parking/street tree/stormwater devices
- 2 x 2.2m cycle lanes
- 2 x 3.5m traffic lanes

It is recognised that this 20m cross section may need to be altered outside the school frontage and it is considered that the parking/street trees could be removed in those specific locations to enable driveways/intersection and associated visibility splays. School buses could utilise the pick-up and drop-off

² Figure 4, AUP, Drury 1 Precinct

(PUDO) on site and the location of any AT Metro scheduled bus stops to be used by students will be determined as part of AT’s wider planning for bus services. It is considered that the parking/street trees can be removed in those specific locations to accommodate bus stops. The locations of these will be considered and discussed with AT when the TIA is prepared.

The above cross section is incorporated in the Drury 1 Precinct section of the AUP and it is considered to be the most appropriate design rather than the cross sections identified in the Drury- Opāheke and Pukekohe-Paerata Structure Plan ITA. Details surrounding the cross sections will be subject to possible changes in the subsequent design stages.

2.4.5 East West Collector Road

The AUP and Drury- Opāheke Structure Plan identifies the East-West Collector Road (Proposed) aligning to the south of the site of the secondary school and ECE (refer to **Figure 2-5** and **Figure 2-6**). It is referred to as the “Future Collector Road (New)” and will provide a new east-west transport connection between the existing Drury Town Centre and an indicative potential new local town centre in Drury West as shown on the 2016 Preferred Network Plan for the South³.

For the purposes of this ITA it has been assumed that the East-West Collector Road will be located along the southern boundary of the school site. It is likely that an interim local road with a cross section of 15.8m will be constructed first and will have the formation as shown in **Figure 2-8** from Plan Change 6. The new east-west connection will accommodate vehicles, pedestrians, cyclists and public transport.

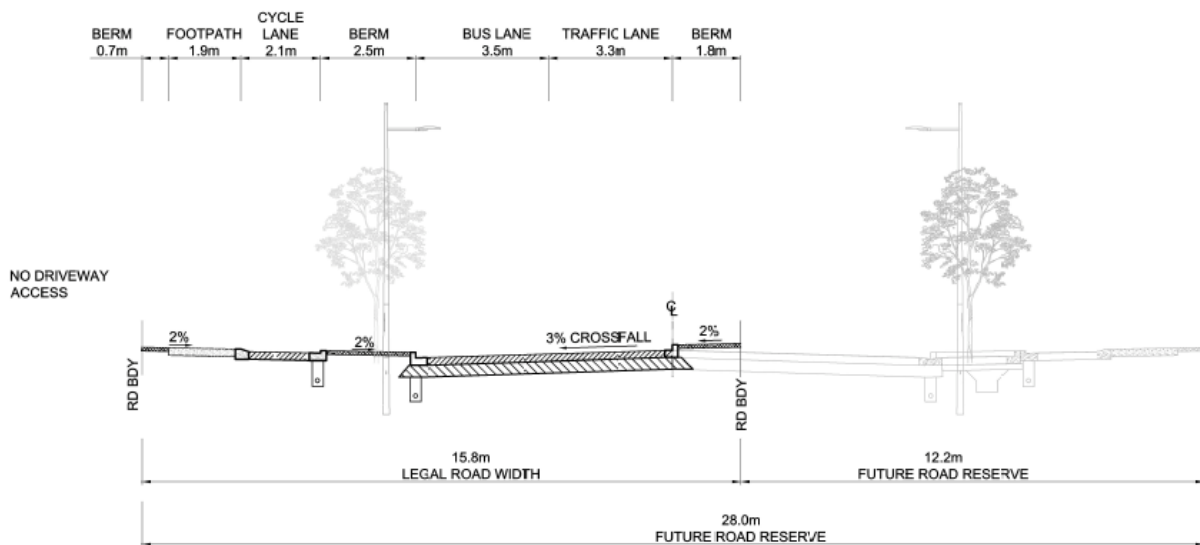


Figure 2-8 Road I Future Collector Road (New) – Interim Local Road Formation (Source: AUP)

2.4.6 Bremner Road

Bremner Road will be one of the main roads used to access the site on opening. The approved cross section for Bremner Road is shown below in **Figure 2-9**.

³ <https://www.nzta.govt.nz/assets/projects/supporting-Growth-Delivering-transport-networks/south/network-for-the-south.pdf>

Bremner Road is currently being upgraded as part of the Auranga subdivision consents. Previous discussions with KDL in 2019 indicated that the construction on the western half of Bremner Road (western boundary of 207 Bremner Rd to Jesmond Road) was programmed to begin in late 2019. The current staging of the upgrade is not known. However, as the whole length of Bremner Road is located in the Auranga A area of PC6, it is considered highly likely it will be upgraded, including to the intersection with Jesmond Road, well before any school opens on the site.

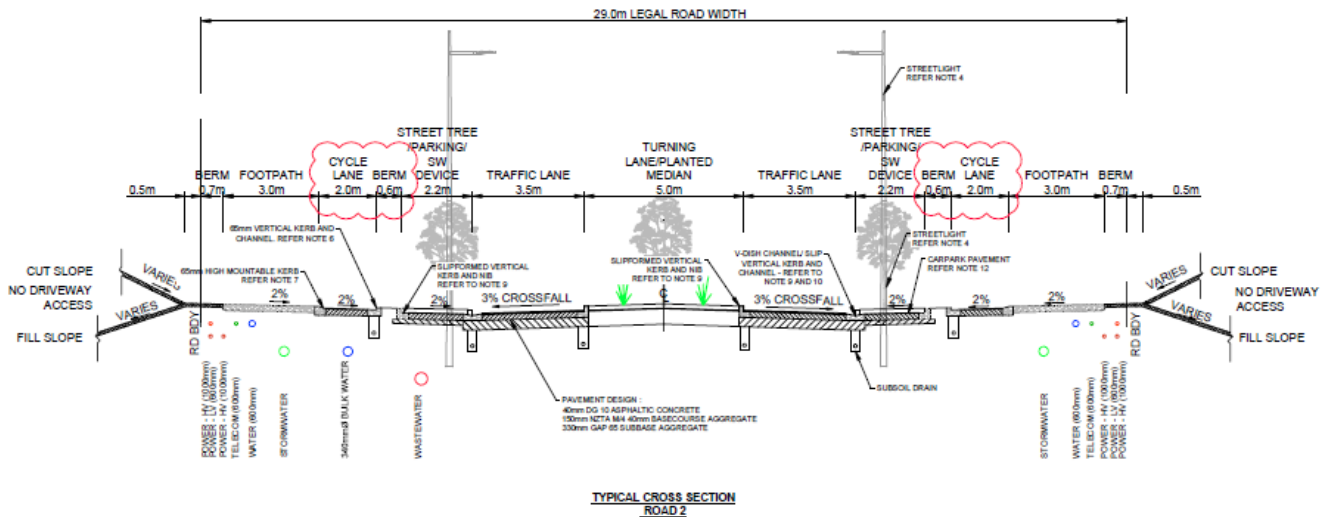


Figure 2-9 Approved cross section of Bremner Road (Source: KDL)

2.4.7 Jesmond Road / SH22 Intersection

The Ministry met with Waka Kotahi (on March 2019) and the proposal at the time for this intersection was to implement a right turn bay from SH22 into Jesmond Road. The right turn bay has now been implemented and this is likely to be an interim solution.

According to PC6 – “Prior to the occupation of any new dwelling or unit in the Precinct Plan 2 area, the intersection of SH22 and Jesmond Road must be upgraded with a double lane roundabout with approach lanes, or traffic signals (including approach lanes) where the posted speed limit supports their implementation to provide a safety and capacity solution, unless an interim traffic safety solution has been approved by the New Zealand Transport Agency as the requiring authority for State Highway 22. This rule states:

- Also applies to integrated residential developments sought as a land use consent application; and
- Continues to apply to each application for subdivision or development within the Precinct Plan 2 area until such time as the intersection of State Highway 22 and Jesmond Road has been upgraded with a double lane roundabout or traffic signals”.

The AUP - PC6 requires this intersection to be upgraded before residential development in this area. Subsequently, the provision of this new secondary school and ECE is contingent on the residential development to have been progressed. In summary, the intersection of Jesmond Road and SH22 will be upgraded well in advance of the full school roll being taken up.

2.4.8 Proposed Transportation Upgrades

Commute has prepared an ITA for both Auranga A and Auranga B1 and undertook traffic modelling for both these areas. The modelling undertaken for both these ITA’s identified the transportation upgrades required

either prior to occupation of any dwellings or at some point as the land is built out in order to ensure the surrounding road network will perform to acceptable standards.

The location of these transport upgrades in relation to the site is shown in **Figure 2-10**. It is noted that some of the upgrades for Auranga A have already started. The exact timing for when each transportation upgrade might be required will depend on the sequence of development. As can be seen from **Figure 2-10** there are numerous transportation upgrades surrounding the site.

Figure 2.9 shows that the upgrade of Jesmond Road, outside the site, has been identified as being required for Auranga A and Auranga B1. However, it is recognised that the length of Jesmond Road fronting the site will be most likely be provided by developers and vested in AT.

2.4.9 Walking and Cycling

The proposed cross sections of Jesmond Road and the East-West Collector Road include a 3m shared path and on-road cycle lane on both sides of the road.

A wide landscape strip with rain gardens, street trees, stormwater treatment dispersed with parking will make it a pleasant environment for pedestrians and cyclists. These design features will enhance walking and cycling opportunities to the site. It is also recognised that school students may choose to scooter to school and the proposed high-quality walking and cycling facilities will also encourage this active mode.

The AUP contains special provisions for the Drury 1 and 2 Precinct and the objectives focus on walkable neighbourhoods and a well-connected roading layout that supports a range of travel modes including walking and cycling.

The policies to achieve this include maximising vehicular, cycling and pedestrian connectivity and permeability of the road network wherever possible. The policies also require pedestrian links to allow for safe and efficient movements. Further policies require future subdivisions to be designed to support liveable, walkable and connected neighbourhoods including a road network that is easy and safe to use for pedestrians and cyclists and connected to schools.

These objectives and policies apply to the road network planned throughout the whole Drury 1 and 2 Precinct; which for the purposes of this report, have been used to provide guidance around the future walking and cycling effects and opportunities for the planning and design of the School site.

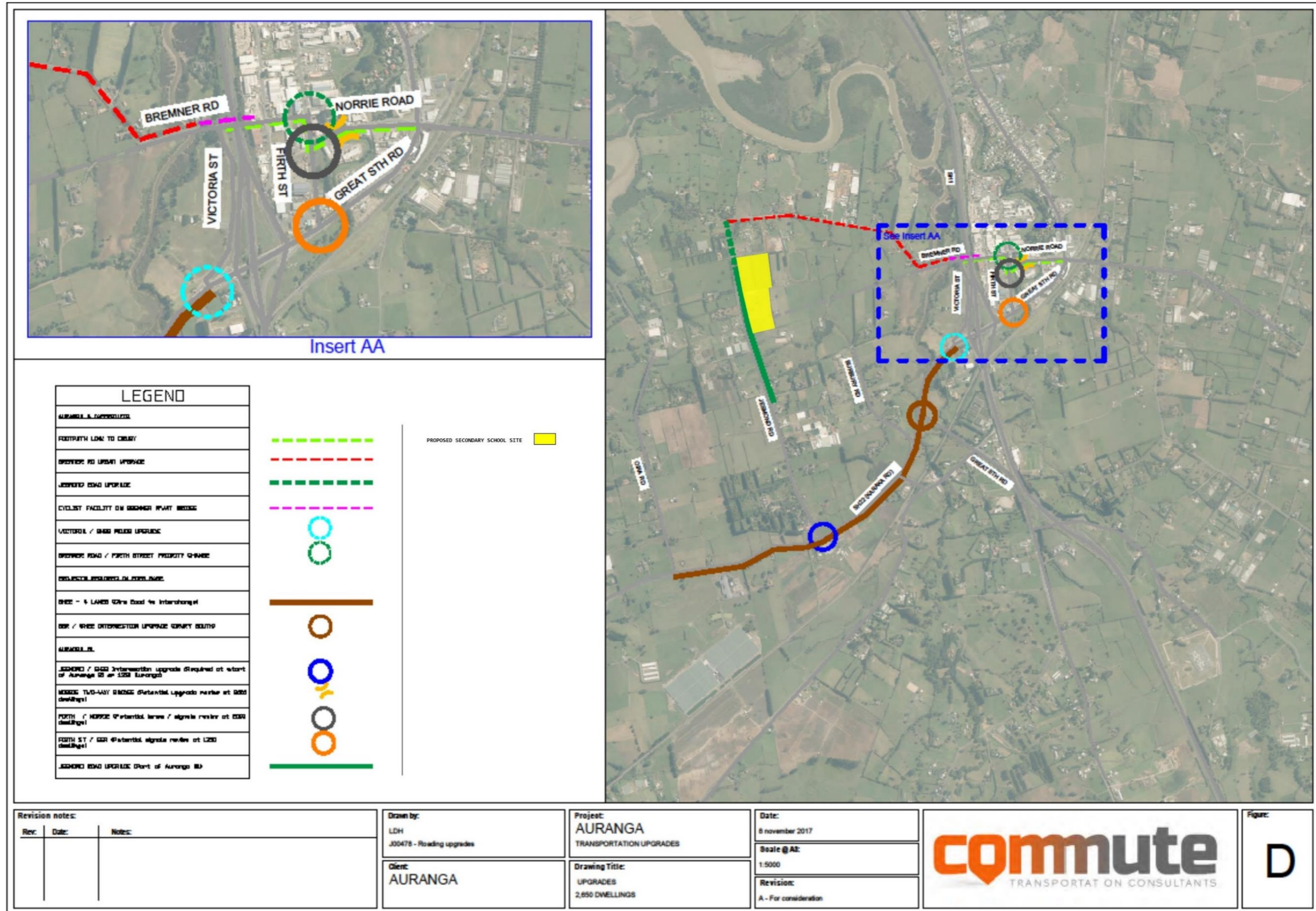


Figure 2-10 Proposed Transport Upgrades for Auranga A and B1 (Source: Auranga B1 Modelling Technical Memo)

2.4.10 Public Transport

A potential future rail station in Drury West is currently being investigated as part of the Supporting Growth Programme. This investigation is also looking at rail electrification between Pukekohe and Papakura to improve services in this area. If approved, there is potential for parents/caregivers to catch the train after dropping children off at the school and ECE. It may also be used by secondary school students coming from the wider catchment.

The Drury- Opāheke Structure Plan identifies Jesmond Road (between Bremner Road and the East-West (New Arterial Road)) as a Collector Road (Existing) with Connector/Local bus services.

2.4.11 Future Traffic Volumes

Jesmond Road and the proposed East-West road are both identified as collector roads in the AUP. The Auckland Transport Code of Practice (ATCOP) identifies that collector roads are likely to be designed to carry typically traffic volumes of around 10,000 vehicles per day.

However, review of the future transport network as signalled by the Supporting Growth Programme, indicates that the volumes on Jesmond Road (between Bremner Road and the proposed East-West Collector Road) would likely be less than the proposed East-West Collector Road, which would have more of a distribution/arterial function.

The proposed network indicates the main movements within Drury West will be east-west on the East-West Collector Road to distribute traffic on to the north-south connection.

By comparison, Jesmond Road to the north of the East-West Collector Road is considered to simply collect vehicles from surrounding local roads in the Auranga A and B1 areas to the north of the site and then connect with these distributor roads to the south of the site.

3 Proposed Development

3.1 Secondary School & ECE site

The proposed secondary school is expected to have a foundation student roll of approximately 200-300 secondary students. Depending on the rate of residential growth in the area the Ministry anticipates that the school may ultimately have a roll of approximately 2,500 secondary school

For a school of 2,500 capacity it is anticipated that approximately 140 staff will travel to and from the site.

The ECE is anticipated to have a roll of 50 children and 10 staff.

3.2 Access Strategy

Jesmond Road is on the western boundary and is identified in the AUP to be upgraded to a Collector Road (Existing). An East -West Collector Road (Interim and New) is identified in the AUP along the southern frontage of the site however it is recognised this Collector Road will have more of an arterial function.

An indicative access strategy is shown on **Figure 3-1** and described below:

- Main vehicular access for the school and ECE from Jesmond Road for staff/student car parking and PUDO.
- Opportunities for access from other roads may be provided off the future road network when constructed.
- Pedestrian and cycle/e-scooter access from Jesmond Road on the western frontage and the East -West Collector Road (Interim and New) on the southern frontage.

A Design Concept Plan will be prepared as part of the Establishment Outline Plan (OP) showing the number and general location of access points for vehicles, cyclists/e-scooters and pedestrians.

3.2.1 Access to 341 Jesmond Road

Currently access to 341 Jesmond Road is via a right of way located between 401 and 281 Jesmond Road (Right of Way) as seen on **Figure 3-1**. At the time of this report the Ministry is negotiating to purchase part of the Right of Way.

The right of way will remain in use until such time as the Ministry acquires part of that land and subsequently requires that for construction or operation of the school and ECE. If the East-West Collector road has not already provided road access to 341 Jesmond Road at that time, the Ministry could provide alternative access that does not bisect the school site. This could, for example, be achieved by the granting a right of way easement in favour of 341 Jesmond Road along the southern boundary of the Site.

A further alternative access in the middle of the site is considered an inefficient use of the site as a whole and is not recommended. The alternative access will be determined closer to the time of the school opening and as part of the OP.

The designation of the Site will not preclude the ongoing use of the right of way for access to 341 Jesmond Road for so long as the right of way easement remains effective.

3.3 Pick Up and Drop Off Arrangements

It is very likely that a PUDO facility would be provided wholly on the subject site, which would provide a safe environment for students, parents and staff. The location and design will be confirmed at the OP stage when a greater level of detail is known about the proposed surrounding school bus, public bus and rail network. The PUDO facility will be provided at the same time the school is being developed.

The site is sufficiently sized (8.4 ha) to provide an on-site PUDO facility for the secondary school and the ECE.

3.4 Parking and Loading Areas

The 8.4ha site is sufficient size to accommodate parking and loading areas for the school and ECE.

It is recommended that a Design Concept Plan for the site be prepared as part of the OP and the general location of parking areas (including cycle/scooter parks) be included in this plan.

4 Predicted Mode Share and Trip Generation

4.1 Anticipated Catchment

For the purposes of this ITA the indicative catchment for the new secondary school and ECE is shown on **Figure 4-1**. The catchment can be described as the Drury West area, between SH1 and Waiau Pa and south to the enrolment zone for Pukekohe High School.

It is noted that the secondary school catchment is indicative only and the final catchment will be subject to discussions between the Establishment Board of the new school (once appointed) and the Boards of Rosehill College, Papakura and Pukekohe High Schools. It is noted that it is likely that Rosehill College’s zone would likely be amended so that it excludes Drury West but includes the Hingaia area.

It is noted that Waiau Pa, Kingseat and Karaka areas are included in the indicative Drury West secondary school catchment and predominantly have a rural zoning. The new secondary school is not expected to draw a significant number of students from these areas.

The more immediate catchment is shown below in overlay on the Auckland Future Urban Land Supply Strategy (FULSS) for Hingaia, Opāheke-Drury and Drury West as seen in **Figure 4-2**.

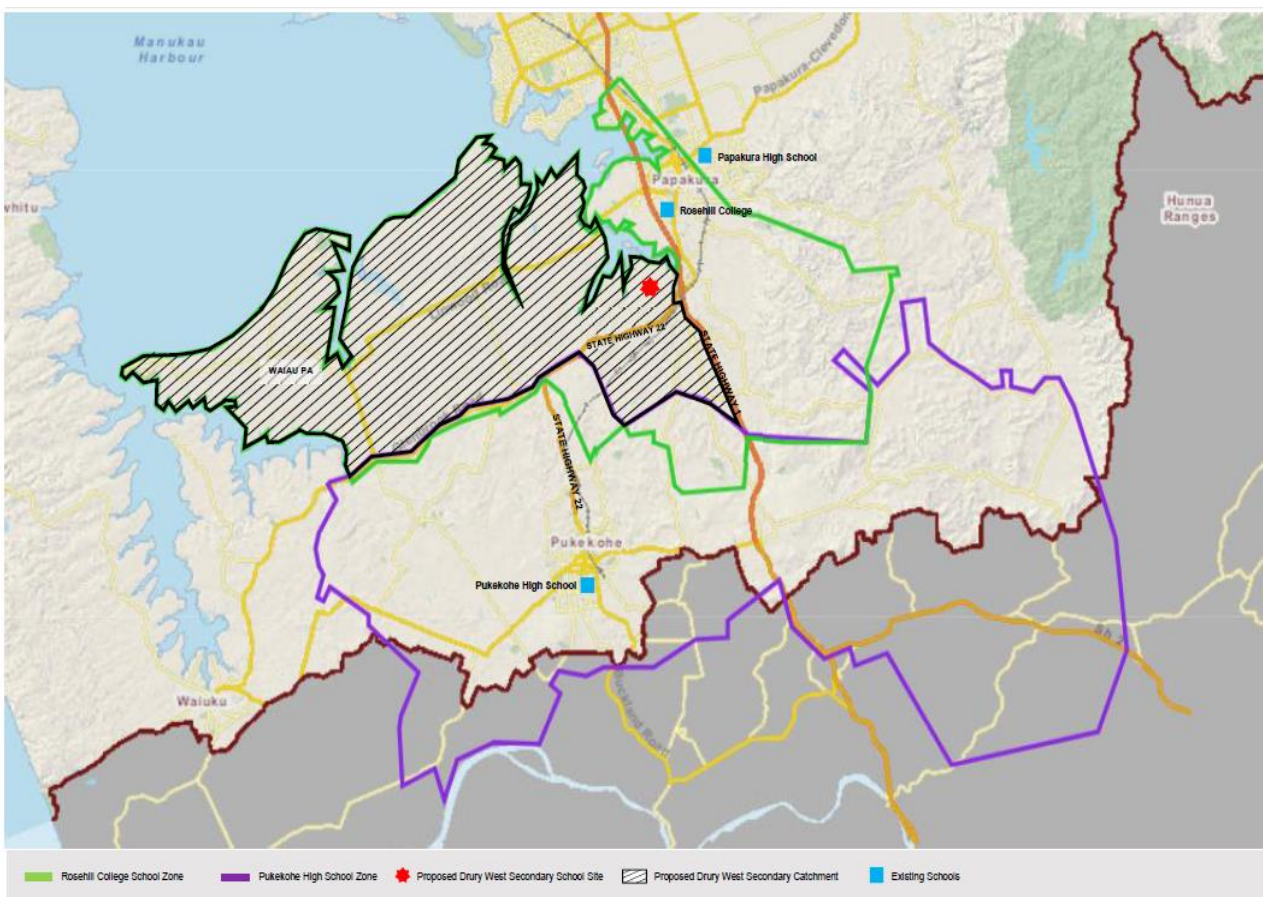


Figure 4-1 Indicative Catchment for Drury West Secondary School

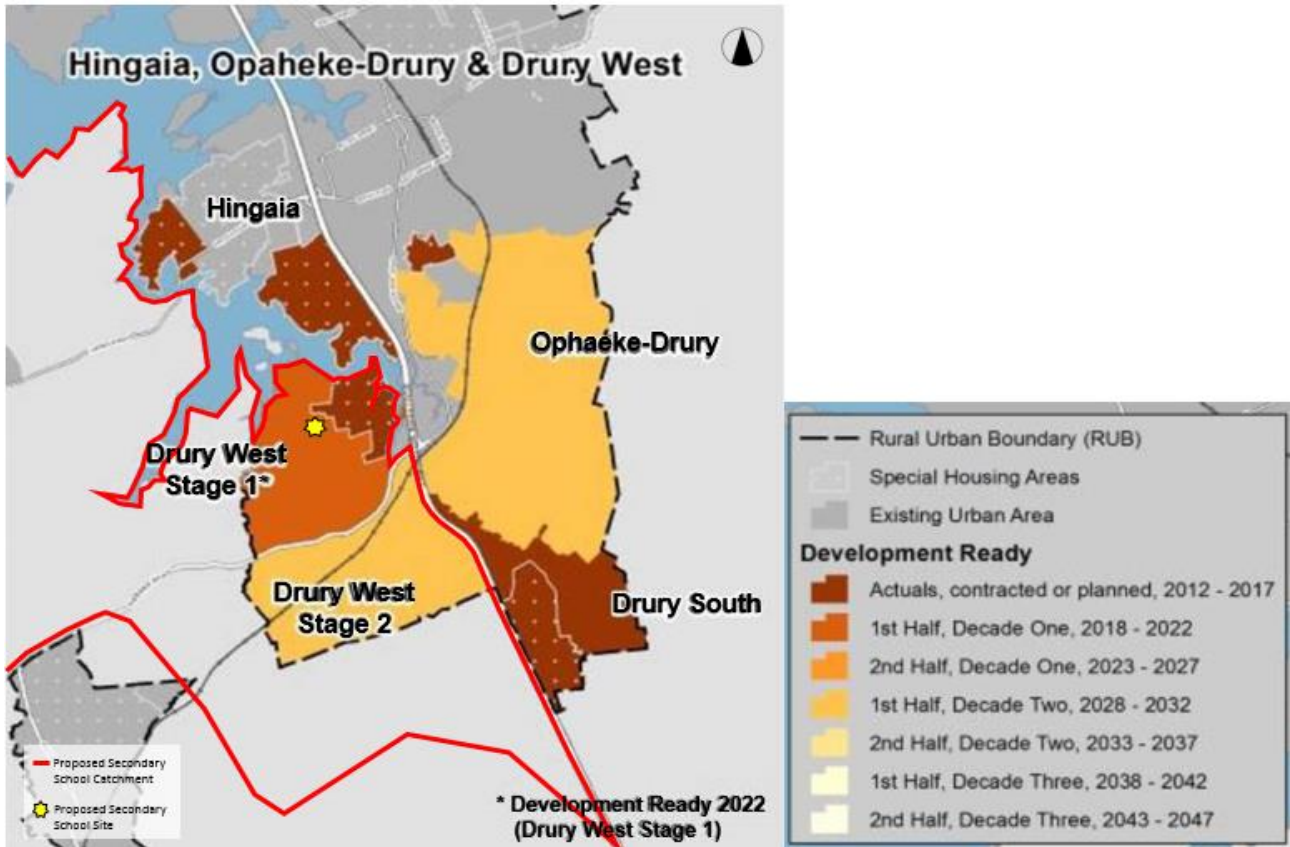


Figure 4-2 Anticipated Catchment for the Secondary School and ECE (Source: Auckland Future Urban Land Supply Strategy, Auckland Council, July 2017)

The proportion of students attending the secondary school from Drury West Stage 1, Drury West Stage 2 and the other rural areas have been estimated and shown in **Table 4-1** below.

Table 4-1 Assumed Secondary School Distribution

Area	Distribution Proportion	Number of Students
Drury West Stage 1	50%	1,250
Drury West Stage 2	40%	1,000
Rural / Other Areas	10%	250
Total	100%	2,500

4.2 Mode Share

As students get older, they travel more independently with higher proportions of secondary students walking, cycling and using public transport compared to primary school.

The mode share for the school will change as the residential area around the secondary school and the transport network is developed. The desired future mode share outcomes for the school seek to have high pedestrian and active mode share as the roll progressively reaches 2,500 students.

For Drury West Stage 1 most of this area is within an appropriate cycling distance of the school site. Therefore, it is expected there will be a higher walking and cycling mode share.

For Drury West Stage 2 it is noted that SH22 will provide a barrier to walking and cycling and there will be more of an emphasis on car and public transport travel.

Table 4-2 shows a predicted mode share for the school for 2,500 students for Drury West Stage 1 and Drury West Stage 2 areas.

Table 4-2: Predicted Mode Share – Roll of 2,500 students

Student Mode Share	Drury West Stage 1	Drury West Stage 2	Rural / Other
Car	20%	30%	30%
Cycle / E-Scooter	10%	10%	0%
Walk	40%	0%	0%
Public Transport (buses)	30% (375 students)	60% (600 students)	70% (175 students)
Total	100%	100%	100%

For the staff a mode share of 80% vehicle and 20% active modes has been assumed.

Table 4.2 provides the number of students by area anticipated to use buses to travel to and from school. The split of the number of students using public and private buses is unknown at this stage and will be developed further, as part of the bus strategy, to be included in the School Travel Plan.

4.2.1 Secondary School Vehicle Trips

Applying the assumed pupil distribution by area and mode shares to the proposed number of secondary school students and associated staff the predicted number of vehicle trips generated has been calculated and the following vehicle occupancy rates applied:

- 1.26 students per vehicle⁴
- 1 person per vehicle for staff

Applying these vehicle occupancy rates generates a total of approximately 1,065 vehicle movements (in + out) for the secondary school associated with the morning arrival period and the same number of movements in the afternoon departure periods for a full school roll anticipated around 2043. A full breakdown of the predicted vehicle movements is presented in **Table 4-3** below.

Currently the Ministry does not have a policy of providing for student car parking on site. Student travel demand management, will be a matter for addressing in the School’s Travel Plan, developed in consultation with AT and the elected Board of Trustees (as opposed to the Establishment Board of Trustees). This is discussed in more detail in **Section 4.3**.

Table 4-3: Predicted Secondary School Vehicle Generation – Full Roll of 2,500 students

	Car Mode Share	Number of Students / Staff Travelling by car	Vehicles Generated	Vehicle Movements Generated (in + out) for each of the morning and afternoon periods
Drury West Stage 1	20%	250	199	398
Drury West Stage 2	30%	300	238	476
Rural / Other	30%	75	47	94
Staff	80%	112	112	112
Total		837	697	1,080

⁴ Waka Kotahi’s school travel model spreadsheet

www.nzta.govt.nz/assets/resources/research/reports/467/docs/nzhts-school-travelmodel.xls

4.2.2 Summary of Trips

It is anticipated for a full school roll of 2,500 students the following number of trips by mode are:

- Pedestrian = Approximately 500 students walking to and from school
- Cycle / E-Scooters = Approximately 225 students cycling/scootering to and from school
- Public Transport (Buses) = Approximately 1,150 students using public transport to and from school
- Private Car = Approximately 1,080 vehicle movements (in + out) for each of the morning and afternoon drop-off and pick-up periods.

4.2.3 ECE Trips

It has been estimated that the ECE is expected to have a vehicle mode share of 80% private car and 20% walking for both staff and children based on previous experience of ECE facilities across Auckland. In addition to the daily school vehicle generation, this equates to a vehicle generation of 80 daily vehicle trips for the children and 16 vehicle trips for the staff.

4.3 School Travel Plan

It is recommended that a School Travel Plan is developed within six months of the opening of the secondary school once an elected Board of Trustees is in place to assist in supporting and achieving the desired mode share.

The purpose of the School Travel Plan is to provide specific measures to reduce vehicle dependence, including carpooling, the encouragement of the use of public transport and the encouragement of walking and cycling. The School Travel Plan is also required to be consistent with AT's Travelwise programme and provide the location and provision of any scooter and cycle parking required.

It is recommended that the Travel Plan include details of the school bus strategy for both public and private buses. The strategy is likely to include the areas of Clarks Beach, Kingseat, Waiiau Pa and Karaka which are rural areas within the anticipated school catchment where the mode share of bus travel is anticipated to be high.

Although the Ministry does not have a policy of providing for student car parking on site it is recognised that some older students may drive and/or attend before and after school activities. It is recognised that the school will start with an initial small roll and these are likely to be younger students who are unable to drive. It is recommended that measures to manage the effects of student parking on the surrounding network be considered within the TIA and the School Travel Plan that is submitted with the OP. For example, it may be appropriate to temporarily provide some on-site student parking spaces if the surrounding road network has not been developed.

4.4 Predicted Trip Distribution

It is anticipated that at opening, the majority of vehicle trips will come from the north and east of the site using Bremner Road/Jesmond Road intersection, as the first stages of residential development in Auranga A, followed by Auranga B1.

In the longer term, future phases of residential development are proposed to the west and south of the site. Students from these areas would use SH22/Jesmond Road intersection to travel to school.

It should be noted that many of the trips will not be generated solely as a result of the school and ECE, rather that these trips are likely to be trips already on the road network for parents who commute to and from the city.

Any existing modelling and planning for the area would already encompass the trips to and from the school on the road network.

5 Assessment of the Transport Effects and Mitigation

5.1 Traffic Modelling

An ITA Report was prepared by Commute Transportation Specialists (Commute) entitled “*Auranga B1, Proposed Plan Change, Bremner Road, Drury, Integrated Transportation Assessment Report*” (May 2017) to support the PC6 (Auranga B1 Drury West) to enable 1,300 new residential houses.⁵ The traffic modelling in the 2017 Commute ITA considered a worst case scenario for school traffic associated with the residential development, as it assumed that all Auranga residents would need travel to Rosehill College.

As discussed in **Section 2.4.8**, Commute prepared ITA’s for both Auranga A and Auranga B1. The modelling undertaken for both these ITA’s identified the traffic and transport upgrades required either prior to occupation of any dwellings or at some point, as the land is built out, in order to ensure the surrounding transport network will perform to acceptably. The exact timing for when each transport upgrade will be implemented will depend on the sequence of development. It is considered that any potential traffic impacts from the operation of the school and ECE on the surrounding transport network will therefore be addressed by the proposed transport upgrades shown on **Figure 2-10** and through the preparation of a TIA for the school, as discussed in **Section 5.2**.

It is understood that the roads will have been designed to accommodate 10 or 20 years of growth within the Drury West area and will provide more than satisfactory performance in the early stages of residential growth including the secondary school.

It is assumed Rosehill College will stay open and the proposed new secondary school is unlikely to attract trips from a wider catchment than the Drury West area. While it is acknowledged that in the early stages after opening there may be some trips from out of zone these can be more than satisfactorily addressed by the transport upgrades discussed in **Section 2.4.8** and shown on **Figure 2-10**.

5.2 Transport Impact Assessment Liaison

In this particular case the NoR has been lodged in advance of likely construction of the School and ECE. There is therefore inherent uncertainty, which is reflected in the assumptions this report makes and the high-level nature of the assessment undertaken.

It is therefore recommended a detailed TIA is prepared at the OP stage, when the land use and transport environment information are better known and there is increased certainty.

It is recommended that the preparation of the TIA is undertaken in liaison with AT and Waka Kotahi, such that a clear understanding of the transport network development informs the TIA.

5.3 Site Access Effects

5.3.1 Staging and Timing

Jesmond Road is currently a rural road with no pedestrian and cycle facilities and will most likely need to be upgraded to provide safe access to the site, depending on the travel modes. There is currently no known

⁵ The closest secondary schools are Rosehill College (to north) and the Wesley College (to south) located approximately 6km away and not within walking or cycling distance of the Auranga B1 population. Pukekohe High School is also located further to the south. As such, the secondary educational needs of the population would need to be met by residents undertaking external trips to these secondary schools.

development planned along Jesmond Road and as such the timing and staging of the upgrade of Jesmond Road is not known at this stage.

There could be a scenario, when the school is established, that Jesmond Road has not been upgraded. Refer to **Section 5.4.1** for the initial 200 school roll impacts on the existing intersection. This is recommended to be considered in the TIA (during the Establishment Outline Plan) which will be prepared at the appropriate time when further detailed information (and therefore more certainty) is available.

5.3.2 Vehicle Access Considerations

The site is capable of providing vehicle access from Jesmond Road. The site has 460m of frontage, which provides more than sufficient separation distance between the anticipated vehicle access points. Multiple vehicle access points can therefore be provided, and this can distribute the traffic to the various locations in the site, such as for staff/visitor car parking, a PUDO and the ECE. Having multiple vehicle access points will distribute the anticipated demand. Jesmond Road is a straight section of road along most of the site frontage and appropriate sightlines for access points can therefore be achieved.

Matters to be considered in developing the access points to the site are:

- proximity to adjacent intersections (e.g. Jesmond Road/Future East-West Collector Road)
- interface with driveways located on western side of Jesmond Road
- interface with bus stops and any on-street parking
- vertical alignment of Jesmond Road.

It is recommended that these matters are assessed at the OP stage during the preparation of the TIA, as part of assessing safe access to the site for all modes. This would include the potential conflict between the different transport modes accessing the site (i.e. pedestrian, cyclists and vehicles) and it is recommended the TIA consider appropriate measures and treatments to minimise and manage these conflicts.

The public consultation material for the Supporting Growth Programme suggests the traffic volumes on Jesmond Road (between the intersection with East-West Collector Road and Bremner Road) are likely to be lower than a typical Collector Road and lower than the proposed East-West Collector Road, which has more of a distribution function in terms of connecting with the future north-south corridor to a proposed town centre. It is therefore considered that the main through traffic movements will be east-west on the East-West Collector Road. The lower traffic volumes on Jesmond Road will assist in enabling this to provide for its safe operation for vehicles accessing the school.

5.3.3 Form of Vehicle Access

The form of vehicle access for the school off Jesmond Road has not been determined as part of this high-level assessment, particularly as it will need to integrate with the site layout and will depend on the number of access points. However, it may be that some form of intersection, rather than driveway crossings, are necessary, given the anticipated number vehicle movements. It is therefore recommended that the form of access/es is assessed at the OP stage, as part of the TIA.

5.3.4 PUDO Access

The establishment of a PUDO on the site will be beneficial in terms of providing for these movements on site, rather than on Jesmond Road. However, further consideration will need to be given to the design of the PUDO to provide for the anticipated vehicle demand (cars and buses). It is recommended that this is assessed in the TIA at the OP stage. This would also consider the potential impacts of the PUDO on pedestrians and cyclists, as discussed in **Section 5.5**.

It is recommended that the Travel Plan include details of the school bus strategy for both public and private buses as well as an estimation of the demand for buses serving the school. The strategy will include the rural / growth areas of Clarks Beach, Kingseat, Waiau Pa and Karaka where the mode share of bus travel is anticipated to be high. The design of the on-site bus PUDO will be informed by the anticipated vehicle demand. It is considered that the site is large enough to accommodate an on-site PUDO for buses.

5.3.5 Bus Access

Jesmond Road will be designed as a Collector Road and will be able to accommodate buses as the traffic lanes are designed to be 3 - 3.5m wide. Jesmond Road, along the school frontage, has been identified in the draft Drury Opāheke Structure Plan as supporting Connector/Local bus services. The school site is sufficient in size to accommodate on-site PUDO for school buses if required.

It is recommended that bus access and the location of any future bus stops and shelters along the school and ECE road frontages be included in the TIA as part of the OP stage.

It is also recommended that the assessment of the need for buses to use the PUDO facility for school events be considered, recognising that this will be a more infrequent event.

5.3.6 Pedestrian and Cycle Access

It is recommended that the pedestrian/cycle access for the secondary school and ECE are separated from vehicle access. The site is capable of providing for this due its significant frontage of approximately 475m along Jesmond Road, frontage to the East-West Collector Road and potential future east and north frontages to other roads (see **Section 5.3.7**).

It is recognised that vehicle access to the school site will cross a potential future 3m shared path on Jesmond Road. It is recommended that in order to provide for a safe design for the shared path, consideration be given to the interaction with school vehicle access. This is more appropriately addressed closer to the time the school is developed, once the final cross section for Jesmond Road is known.

How the cycle facilities connect to the wider Bremner Road and new arterial road network will be provided be included in the TIA as part of the OP stage when more information is known closer to the time.

5.3.7 Future Access Points

Whilst it is considered that the access strategy above will appropriately manage the anticipated transport effects, opportunities for access from any other future roads could also be considered, once the surrounding transport network/development is better understood. This would provide further flexibility for access and can be addressed as part of the TIA at the OP stage.

5.4 Jesmond Road and Surrounding Transport Network Operation

Jesmond Road will be appropriate to provide the main vehicular access to the school and, given the anticipated traffic volumes on this future Collector Road, it is considered that it will have sufficient capacity to accommodate the predicted secondary school and ECE trips.

However, it is recommended that the TIA prepared at the OP stage:

- addresses the traffic generation, distribution and any necessary means of mitigating adverse effects on the efficiency and safety of the surrounding transport network.
- Identifies upgrades to, or informs, the design of the Jesmond Road/ Bremer Road, Jesmond Road/ SH22 and Jesmond Road/ East-West Collector Road intersections. Identifies any gaps in the roading network that would provide a safe connectivity a safe road environment for those travelling to school.

5.4.1 SH22/Jesmond Road Intersection

The main intersection of interest for Waka Kotahi is the intersection of SH22/Jesmond Road. It was agreed at the meeting with Waka Kotahi, the Ministry and AT that no traffic modelling is required on the basis that it is likely the upgrade will already be in place when the school site is developed, and because the traffic/transport environment will be very different when the school opens. The provisions in the PC6 subdivision controls clearly require the upgrade of Jesmond Road/ SH22 intersection before subdivision and development can occur in the Precinct Plan 2 area.

A right turn bay from SH22 into Jesmond Road was implemented in May 2019. It is recognised that the right turn bay is an interim solution until Waka Kotahi determines its long-term solution which, as noted above, is expected to be in place before the school opens.

In the unlikely event that the school opened without any surrounding development (and therefore no upgrade to SH22/Jesmond) it is anticipated that the right-turn bay will be able to accommodate a foundation roll of 200-300 students. This is because it is anticipated that the catchment for the majority (80%) of the foundation students (160 to 240 students) will come from the north from Drury Stage 1 and will use the Auranga road network and Bremner Road. These students will therefore not use the SH22/Jesmond Road intersection. It is estimated that 20% of foundation students (40 to 60 students) could come from the rural area within the school catchment to the west of the proposed secondary school.

It is likely that most of these trips will be made by either public transport (buses) or some students may choose to drive or be dropped off. Assuming 30% of students from rural catchments travel by car and a car occupancy of 1.4 then this could potentially 9 - 13 cars on SH22. Assuming these are drawn from the western areas of Kingseat, Clarks Beach these cars will be making a left hand turn into Jesmond Road from SH22 and would likely not use the right-hand turning bay.

There is uncertainty over the funding, commitment, timing and implementation of the SH22/Jesmond Road upgrade. Therefore, it is recommended that the potential impact of the school traffic using this intersection is assessed via the preparation of a TIA at the OP stage. This will assess the traffic generation and any means of mitigating adverse effects on the efficiency and safety of the surrounding transport network should Waka Kotahi not have its long-term solution for this intersection in place.

5.5 Pedestrian and Cycle Effects

The school site is well located within the proposed residential catchment to encourage walking and cycling. There is significant potential for children to walk to school with most of the residential dwellings proposed in the Auranga development within a 15 minute walk as shown on **Figure 5-1**. **Figure 5-2** below shows that the site also has excellent cycle accessibility potential within an approximate seven-minute cycle ride.

The planned high amenity walking and cycling facilities on an upgraded Jesmond Road and the East-West Collector, proposed on-site cycle parking facilities and cycle/pedestrian connections can accommodate the anticipated walking and cycling demand for the school and ECE. As Auranga B1 grows a similar network is planned, so the whole community will have high quality pedestrian and cycle access to the school when fully developed.

It is noted that there could be a scenario when the school and ECE is established and connections do not exist to the pedestrian and cycle network. For example, it is understood that the preliminary cross section does not provide a footpath on the northern (school) side of the interim East-West Collector Road, before it is completed in its final form.

It is recommended that safe and efficient movement of pedestrians and cyclists within the surrounding transport network is provided and an assessment is made as to whether any mitigation measures are required. It is recommended that this occurs via the TIA at the OP stage, once the site has gone through master planning, design and development of the surrounding transport network is better understood.

As discussed previously, the location of PUDO vehicle access points across the potential future shared path and on-road cycle lanes on upgraded Jesmond Road will need to be considered. It is recommended that these matters are addressed in the TIA at the OP stage, considering:

- the continuity of the cycle and pedestrian facility to enable a safe and attractive facility
- appropriate walking and cycling access point locations in relation to the PUDO access.

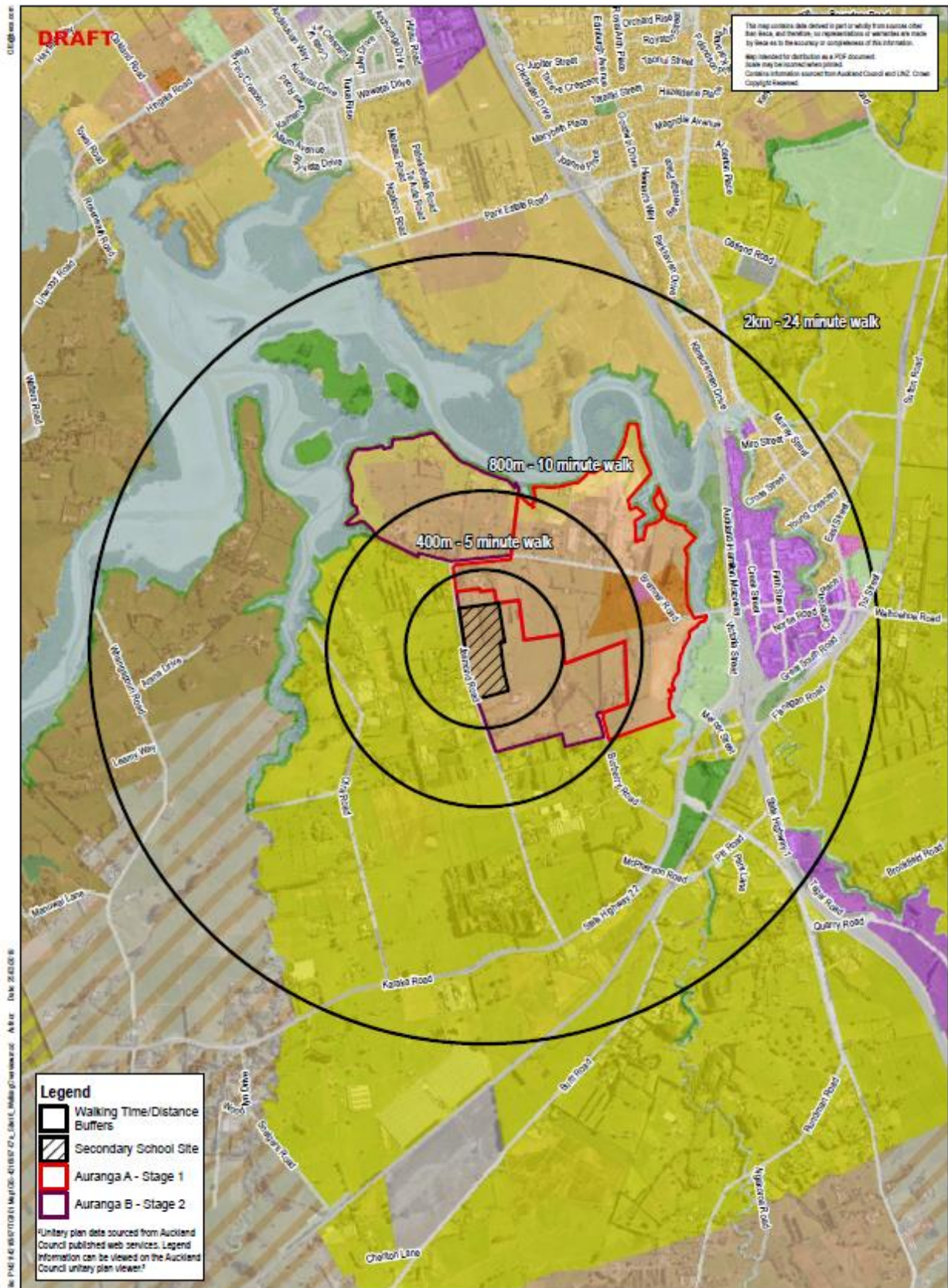


Figure 5-1: Proposed Site Walk Radii (update showing 15 minute walk radius)

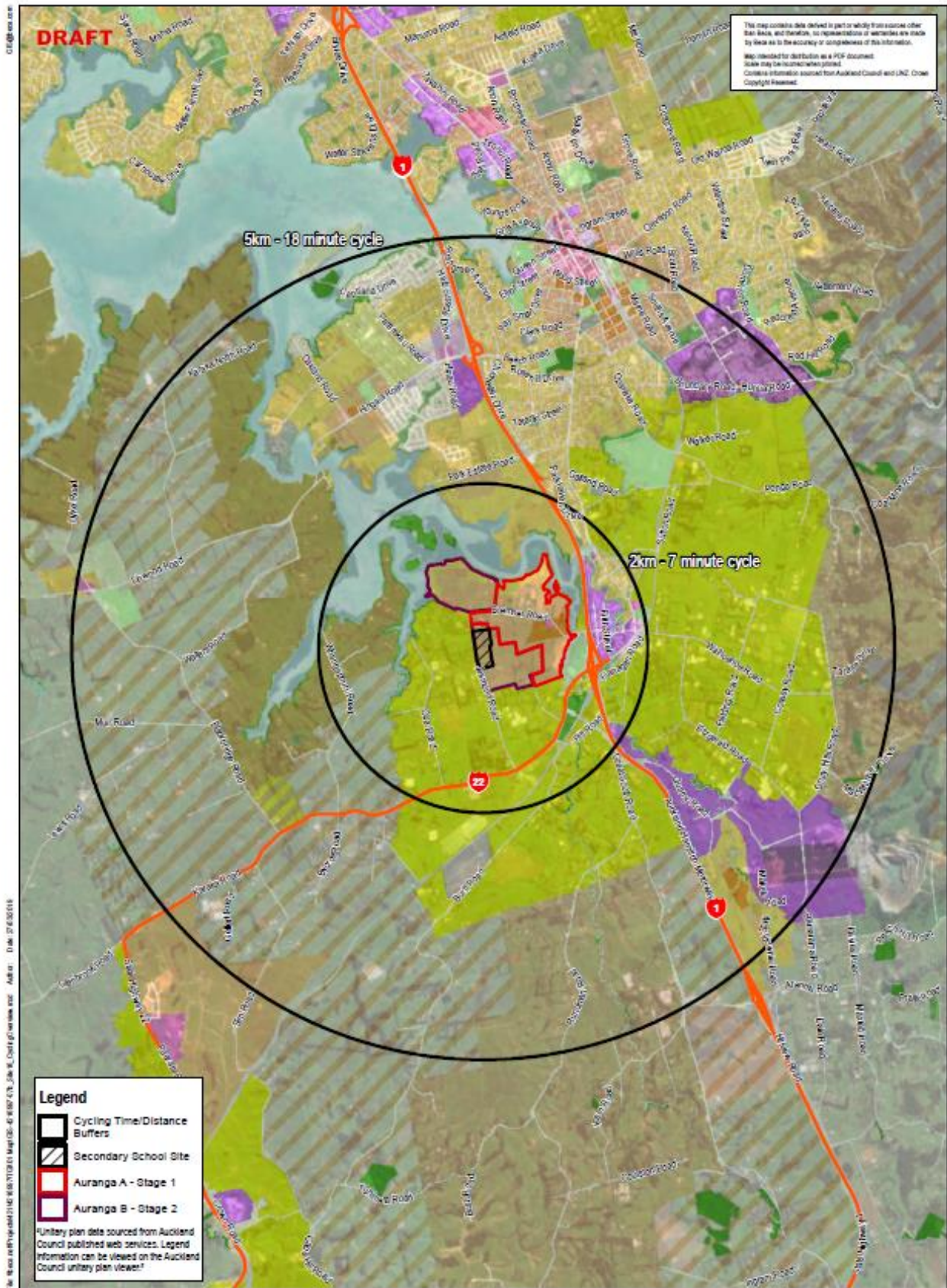


Figure 5-2 Proposed Site Cycle Radii

It is recommended that the specific matters that will be considered and discussed with AT, at the time of the OP include measures and treatments to enable safe access to be provided to the school and ECE for all transport modes including pedestrian and cycle facilities (crossings and paths). It is recommended that information on appropriate measures and treatments at access points on Jesmond Road is also included in the Design Concept Plan for the school and ECE.

It is also recommended that the recommended School Travel Plan address safe access to the school, considering features such as crossings and measures to separate vehicle access/es and pedestrian/cyclist access points.

5.6 On-Street Parking Effects

The Ministry seeks to mitigate the effects of on street parking by providing a PUDO on-site. This will reduce impacts on on-street parking and make these spaces available for non-school activities.

It is recommended that there is a requirement for an on-site PUDO and that the design requirements for this are further considered in the TIA at the OP stage. As noted above, it is also recommended that the TIA and Travel Plan consider measures to manage student parking.

5.7 Public Transport Effects

Along the school frontage, Jesmond Road (between Bremner Road and the East-West (New Arterial Road)) is identified as a Collector Road (Existing) with Connector/Local bus services. It is anticipated that the buses will use Jesmond Road to access the school. Jesmond Road is identified as Collector Road with local bus services so will be able to accommodate school bus services. As previously stated in **Section 5.5** it is recommended that bus access and the location of any future bus stops and shelters along the school and ECE road frontages be included in the TIA as part of the OP stage.

It is recognised that AT will implement a public transport network in time and therefore will have a key role to play in the secondary school travel, particularly as the school and surrounding catchment develops.

Access to public transport will likely be a combination of school buses and scheduled services. The on-site PUDO will be used for school buses which will contribute to the efficient use of Jesmond Road.

Rail may play a small part for some students with the potential for future bus services from a proposed rail station at Drury West, should SGA confirm the location of a rail station here.

5.8 Construction Traffic Effects

Managing the effects of the construction of the school and ECE can be satisfactorily addressed through the development of a Construction Traffic Management Plan (CTMP). It is recommended that a CTMP is prepared and submitted with the OP for major site works.

5.9 Summary of Recommended Mitigation Measures

As set out above it is recommended that a detailed TIA is prepared at the OP stage, when the land use and transport environment information are better known and there is increased certainty. It is further recommended that the TIA be developed in liaison with AT and Waka Kotahi, via AC, as these authorities will have a comprehensive understanding of the transport network development.

It is considered that the potential traffic impacts of the operation of the school and ECE on the surrounding transport network will be satisfactorily addressed by the proposed transport upgrades shown on **Figure 2-10**.

This will be further considered during the preparation of the TIA at the OP stage, when the relative timing of surrounding residential development (that influences these upgrades) is better understood.

Overall, it is recommended that the TIA addresses the following matters:

- Traffic generation and associated traffic effects on surrounding intersections and any necessary mitigation, should the relevant upgrades identified on **Figure 2-10** not have already been provided
- The requirements for the on-site PUDO, including:
 - safety and efficiency of Jesmond Road
 - continuity of cycle and pedestrian facilities on Jesmond Road
 - appropriate walking and cycling site access points in relation to the PUDO access.
- Safe access to the site for all modes
- Safe and efficient movement of pedestrians and cyclists within the surrounding transport network, including any necessary mitigation measures, if the school is established, but not satisfactorily connected to the pedestrian and cycle network at that time.

The following is also recommended that the following be developed in the TIA at the OP stage as mitigation:

- A School Travel Plan to assist in supporting and achieving the desired mode share. The development of the School Travel Plan will also support safe access to the school
- A CTMP for major site works to manage the effects of the construction of the school and ECE.

6 Summary and Conclusions

The proposed secondary school and ECE site is to be located on Jesmond Road, Drury West in South Auckland.

The secondary school and ECE do not have a firm opening date and will be opened in response to residential growth in the surrounding area. It is anticipated that the school will open in the next 15 years and have a small roll of foundation students that will grow gradually to approximately 2,500 students over time, subject to the development of the surrounding residential / future urban land use. The ECE is anticipated to have a roll of 50 children and 10 staff.

The land use and transport environment at the time the secondary school and ECE are established is currently unclear, given this NoR is given well in advance of the proposed and future residential development taking place and the associated proposals for transport upgrades, some of which are still subject to investigation by the SGA.

The ITA therefore provides a high-level transport assessment which recognises this uncertainty and identifies recommendations to address any potential adverse transport effects that may arise from the operation of the school at capacity and ECE.

The following conclusions are identified:

- The main vehicle access is likely to be from Jesmond Road, which will need to be upgraded to provide safe access to the site, as it is currently a rural road with no pedestrian and cycle facilities
- It is considered an upgraded Jesmond Road will have the capacity to accommodate the predicted secondary school and ECE trips, including safe operation for vehicles accessing the school
- The school frontage along Jesmond Road is sufficient to provide appropriate separation between any proposed access points or future intersections
- The site is large enough to provide on-site parking and PUDO for cars and buses
- The site has a central location within future residential development and future high-quality walking and cycling connections and infrastructure.

As this NoR is in advance of surrounding residential development being fully understood, it is recommended that a more detailed TIA is prepared at the OP stage, when more is known about the land use and transport environment and there is increased certainty. It is recommended that the TIA be developed in liaison with AT and the Transport Agency, via the Council, as these authorities will have a comprehensive understanding of the transport network development. It is recommended that the TIA addresses the following:

- Traffic generation and associated traffic effects on surrounding intersections and any necessary mitigation, should the relevant upgrades identified on **Figure 2-10** not have already been provided
- The requirements for the on-site PUDO for cars and buses, including:
 - safety and efficiency of Jesmond Road
 - continuity of cycle and pedestrian facilities on Jesmond Road
 - appropriate walking and cycling site access points in relation to the PUDO access.
- Safe access to the site for all modes
- Safe and efficient movement of pedestrians and cyclists within the surrounding transport network, including any necessary mitigation measures, if the school is established, but not satisfactorily connected to the pedestrian and cycle network at that time.

Any potential traffic impacts of the operation of the school and ECE on the surrounding transport network will be addressed by the proposed transport upgrades shown on **Figure 2-10** and via further consideration through the preparation of the TIA at the OP stage. That will enable consideration of the relative timing of surrounding residential development (that influences these upgrades), when this is better understood.

There is the potential for a scenario where the school is established, and Jesmond Road has not been upgraded. In such a scenario the school would be able to operate within the existing road infrastructure based on the initial 200-300 student roll. In the unlikely event of this occurring this can be considered in more detail in the TIA.

The following is also recommended as mitigation:

- A School Travel Plan to assist in supporting and achieving the desired mode share, developing and bus strategy and to manage student parking. The development of the School Travel Plan will also support safe access to the school
- A CTMP for major site works to manage the effects of the construction of the school and ECE.

On the basis of this preliminary assessment of the transport effects and the associated recommendations, it is considered that, from a transport perspective, the NOR to designate land for the proposed School and ECE should be confirmed by AC.