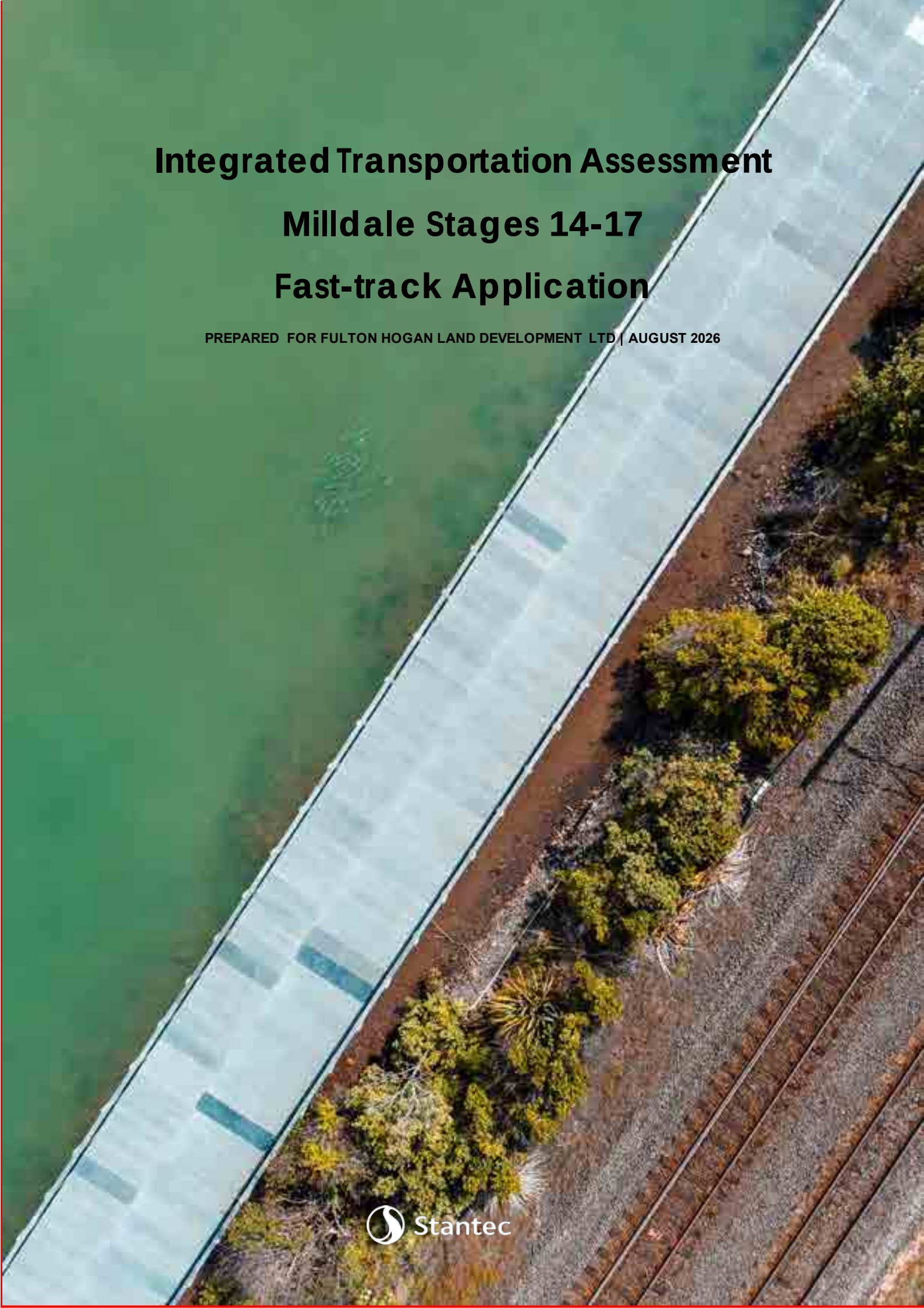




Integrated Transportation Assessment Milldale Stages 14-17 Fast-track Application

PREPARED FOR FULTON HOGAN LAND DEVELOPMENT LTD | AUGUST 2026

Revision schedule

Rev No	Date	Description	Initials			
			Prepared by	Checked by	Reviewed by	Approved by
1	13.08.26	Final	TLJ	NF	AMM	TLJ

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This Report is intended solely for use by the Client in accordance with Stantec's contract with the Client.

Quality statement

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STATUS: Final | Project No: 310206516



Contents

1.	Introduction.....	1
2.	Statement of Qualifications and Experience.....	2
3.	Existing Transport Context.....	3
3.1	Site Location.....	3
3.2	Existing Road Network.....	5
3.2.1	State Highway 1 (SH1).....	6
3.2.2	Supporting Routes.....	6
3.3	Existing Accessibility.....	7
3.3.1	Existing Public Transport Network.....	7
3.3.2	Existing Walking and Cycling Network.....	9
3.4	Existing Traffic Volumes.....	13
3.5	Existing Road Safety Record.....	14
4.	Future Transport Context.....	16
4.1	Penlink.....	18
4.2	Highgate Overbridge.....	18
4.3	Summary.....	18
5.	Future Land Developments.....	19
5.1	Silverdale West Industrial Precinct.....	20
5.2	Milldale.....	20
5.3	Ara Hills.....	20
5.4	Delmore Development.....	20
6.	Proposed Development.....	21
6.1	Proposed Transport Network.....	21
6.1.1	Road Network and Access to Milldale Stage 14-17.....	24
6.1.2	Intersection Typologies.....	40
6.1.3	Walking Network.....	45
6.1.4	Cycling Strategy.....	45
6.1.5	Public Transport.....	45
6.2	Global Departures from Standards.....	46
7.	Modelling.....	47
7.1	Background.....	47
7.2	General Assumptions.....	49
7.2.1	Land Use.....	49

7.2.2	Public Transport.....	49
7.2.3	Local Infrastructure Transport Upgrades.....	49
7.2.4	Wider Infrastructure Transport Upgrades.....	50
7.3	Modelling Assumptions.....	50
7.3.1	Trip Generation.....	50
7.3.2	Trip Distribution.....	51
7.4	Modelling Outcome	51
7.5	Traffic Effects Summary	54
7.5.1	AM Peak Hour.....	54
7.5.2	PM Peak Hour.....	55
7.6	Development Thresholds and Infrastructure Upgrades.....	56
8.	Unitary Plan Assessment	57
8.1	E27 Standards.....	57
8.2	Summary	59
9.	Transport Planning and Policy.....	60
9.1	National Policy Direction.....	60
9.1.1	Government Policy Statement.....	60
9.1.2	National Policy Statement on Urban Development.....	61
9.1.3	Emissions Reduction Plan.....	61
9.1.4	Arataki	62
9.2	Regional Policy Framework (Auckland).....	63
9.2.1	Auckland Unitary Plan (Operative in Part).....	63
9.2.2	Auckland Regional Land Transport Plan.....	63
9.2.3	Regional Public Transport Plan	64
9.2.4	Auckland Transport Alignment Project.....	64
9.2.5	Future Development Strategy.....	65
9.3	Local Strategies and Plans.....	67
9.3.1	Auckland Plan 2050	67
9.3.3	Supporting Growth Alliance	68
9.3.4	Vision Zero for Tamaki Makaurau	70
9.4	Summary	70
10.	Summary and Conclusions.....	71

List of Appendices

- Appendix A Global Departures from Standards
- Appendix B Derivation of Triggers
- Appendix C Detailed Results
- Appendix D Concept Layouts



1. Introduction

Fulton Hogan Land Development Limited (“**FHLD**”) has engaged Stantec New Zealand (“**Stantec**”) to provide an Integrated Transport Assessment (“**ITA**”) to accompany a Fast-track Application under the Fast-track Approvals Act 2024 to facilitate the development of new dwellings in Wainui, within specific areas to the north of Wainui Road and east of Endsley Rise. The development, also referred to as the Milldale Stages 14-17 Project, is intended to integrate with and ultimately form part of the wider Milldale development, which is currently being developed by FHLD.

The northern area is bounded by Cemetery Road to the west, the Orewa River to the north, Wainui Road to the south and State Highway (SH1) to the east. The eastern area is bounded by Endsley Rise to the west, Wainui Road to the north and Sidwell Road to the east. The total landholding is approximately 231 hectares in area, and the anticipated dwelling yield for the development area (being a subset of the overall site) is anticipated to be around 1,425 dwellings for infrastructure planning purposes. The Ministry of Education (“**MoE**”) is proposing to develop a school campus on adjacent land that sits between Milldale Stages 14-17 and Upper Orewa Rd in the future. The MoE site is to be designated and developed by MoE for educational purposes catering for primary and secondary aged children, although this does not form part of this application.

The development will provide residential activities and small-scale supporting commercial uses and become a seamless extension to the existing Milldale Development¹. The proposed infrastructure will expand on the already extensive active mode network that has been developed within Milldale and link with the shared paths in the neighbouring suburb of Millwater. The area is also strategically located in proximity to several major business hubs in the north-west of Auckland including Silverdale, Orewa and the Albany Metropolitan Centre approximately 15km to the south (via State Highway 1). In addition, a separate Plan Change (the applicants being FHLD and Fletchers) has also been approved to rezone 107 hectares for light industrial use at Silverdale West. The proposal will provide residential development to ensure there is housing proximate to this substantial future employment area.

The purpose of this Integrated Transport Assessment (“**ITA**”) is to assess the land use / transportation implications of the proposed development and recommend measures to avoid, remedy or mitigate adverse transportation effects.

This report will:

- Describe the existing transportation environment in terms of road networks, traffic volumes, walking and cycling networks, and public transport services;
- Describe the future transport environment based on committed developments and established policy objectives;
- Describe the transportation characteristics of the indicative development;
- Assess the trip generation of the proposal during the peak hours;
- Assess the expected impact of the additional vehicular trips on the transport networks under ‘with development’ and ‘future year’ scenarios;
- Define the recommended transport upgrades to support the development;
- Provide an assessment of the suitability of the proposed internal road network, and associated parking, loading and access; and
- Conclude on the acceptability of the proposal and recommend measures with regard to transport planning and engineering.

By way of summary, the assessment has identified that a number of transportation upgrades are required in order to avoid, remedy or mitigate the transportation effects of the proposal. Based on the planned, staged delivery of these upgrades in accordance with the development thresholds, it is considered that there are no transportation planning or traffic engineering reasons that would preclude the proposed development being approved.

¹ On completion, the Milldale development will comprise 4,500 houses at a mixture of densities, 40,000sqm of commercial development, pre-schools, a primary school, a retirement village and an extensive network of open spaces.

2. Statement of Qualifications and Experience

My full name is Trevor Thomas Lee-Joe.

I am a Principal Transportation Engineer with Stantec New Zealand. I hold a Master of Engineering (Civil) degree and have 29 years of professional experience in traffic and transportation engineering. My experience includes the assessment, design, and review of transportation infrastructure, transport planning, traffic engineering, and the preparation and peer review of transport assessments and transport evidence for a wide range of developments throughout New Zealand.

My project experience includes:

- Milldale Special Housing Area (**SHA**) application;
- Milldale Development application (4,500 dwellings plus 40,000sqm commercial);
- Milldale Stages 1-13 Fast Track application; and
- Silverdale West Industrial Precinct Private Plan Change application.

In addition to the above I have also been involved with a wide variety of smaller resource consent applications for small (up to 20 dwellings) to medium-sized residential developments (up to 100 dwellings) throughout Auckland. I am also currently assisting with modelling for Auckland Airport and am on the Auckland Council review panel for resource consent applications.

I have been engaged by FHLD (the Applicant) to undertake an assessment of traffic and transportation matters associated with the Milldale Stages 14-17 project and to prepare this report in support of the substantive application under the Fast-track Approvals Act 2024 (FTAA).

While this is not an Environment Court proceeding, I confirm that I have prepared this assessment in accordance with the applicable professional and ethical obligations of my profession and that the opinions expressed are within my area of expertise.

I have prepared this document, and it has been reviewed by Alasdair McGeachie (Principal Transportation Engineer and Transportation Delivery Team Lead, Auckland).

3. Existing Transport Context

3.1 Site Location

The proposed site is strategically located with access to SH1 via the Millwater or Silverdale Interchanges. Furthermore, recent transport upgrades that have been, or will be, delivered as part of Milldale Stages 1-13 such as the Highgate Overbridge and other transport upgrades have increased the accessibility of the area. The Highgate Overbridge will allow for efficient east-west connectivity without having to rely on the motorway interchanges at Millwater and Silverdale.

Figure 1 illustrates the site, which comprises two distinct areas, these being a residential subdivision area (Milldale Stages 14-17 - bordered and shaded in red) and an area referred to as Te Korowai o Mareariki to the north of the Orewa river (bordered and shaded in green) overlaid onto an aerial photograph². Figure 1 also illustrates the Milldale Stages 1-13 area (bordered and shaded in yellow) and the neighbouring suburb of Millwater (also developed by FHLD in conjunction with a JV partner, bordered and shaded in blue).

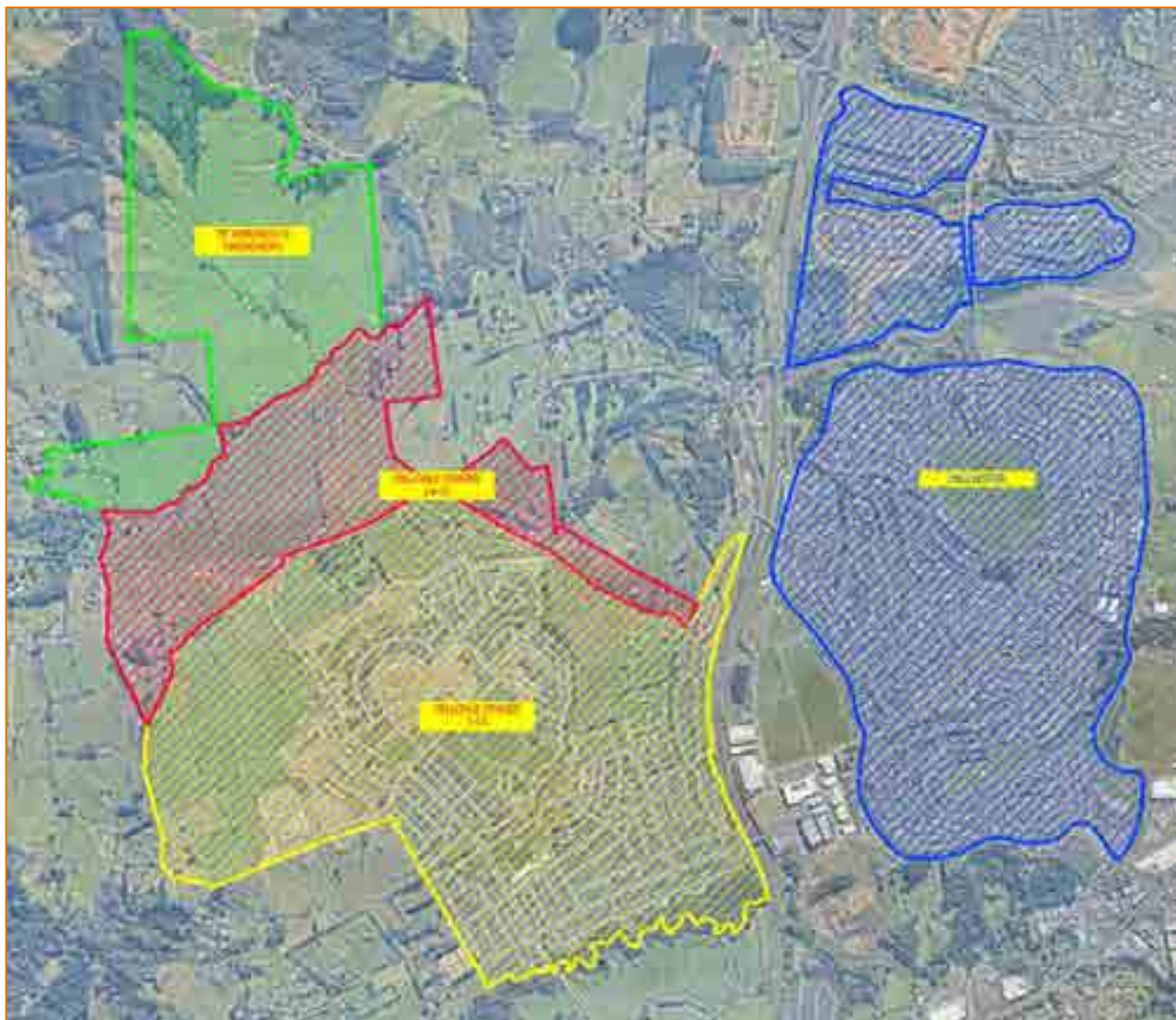


Figure 1: Proposed Site

² Source: Nearmap aerial imagery

Te Korowai o Maraeariki is located to the north of the Ōrewa river and is zoned Rural Production under the AUP. This area is characterised by undulating to steep terrain, with a series of ridgelines separated by incised gullies extending from the Ōrewa River. The land is predominantly managed pasture interspersed with streams and natural wetlands, together with pine plantations, exotic vegetation and gorse scrub. Relatively large areas of indigenous vegetation are also present, including a Significant Ecological Area – Terrestrial Overlay in the north-western portion of the site. It is not intended to develop this northern area for residential activities, however, a Wastewater Treatment Plant is proposed to be constructed in the south if required, with access via a bridge off the end of one of the local roads in the new subdivision area south of the Orewa River. There will also be pedestrian connectivity into Te Korowai o Maraeariki via pedestrian bridges. This level of accessibility to the northern area is considered appropriate and acceptable. For the remainder of this report, the focus of the assessment will be the area to the south of the Orewa River (Milldale Stages 14-17).

The Milldale Stages 14-17 area is located to the north of the Milldale Stages 1-13 area which is currently under construction (nearing completion). As can be seen, the area is predominantly undeveloped and rural in nature. The entire development area is currently zoned FUZ under the Auckland Unitary Plan and is located within the Rural Urban boundary, forming a logical expansion of the adjacent live zoned part of the Milldale development.

The residential subdivision of Millwater, which is now complete, is located generally to the south and east of the development area. The Milldale Stages 14-17 area is also located approximately 3km north of the Silverdale Town Centre, 4km west of Central Orewa, 15km north of Albany Metropolitan Centre, 22km south of Warkworth and 30km north of the Auckland CBD.

Construction within Milldale itself is rapidly progressing, with the completion of civil works expected by 2030 and the last of the dwellings the following year. To the south-east, the Silverdale Centre is an existing suburban centre with a number of residential, commercial and recreational activities. To the south-east beyond the Silverdale Centre is the well-established Silverdale industrial area. To the east is the Highgate Business Park light industrial area.

To the south of Milldale is the Silverdale West Industrial Precinct where a Private Plan Change (“PPC”) has been recently made Operative to rezone 107 hectares for light industrial use at Silverdale West. Milldale Stages 14-17 will provide residential development to ensure there is housing proximate to this substantial future employment area.

Overall, the development of Milldale Stages 14-17 will complement the activities in the surrounding region.

3.2 Existing Road Network

The road network classifications for the existing roads surrounding the site, as defined within AT's "Future Connect" online database, are illustrated below in **Figure 2**, with the Milldale Stages 14-17 boundary indicated with a red border.

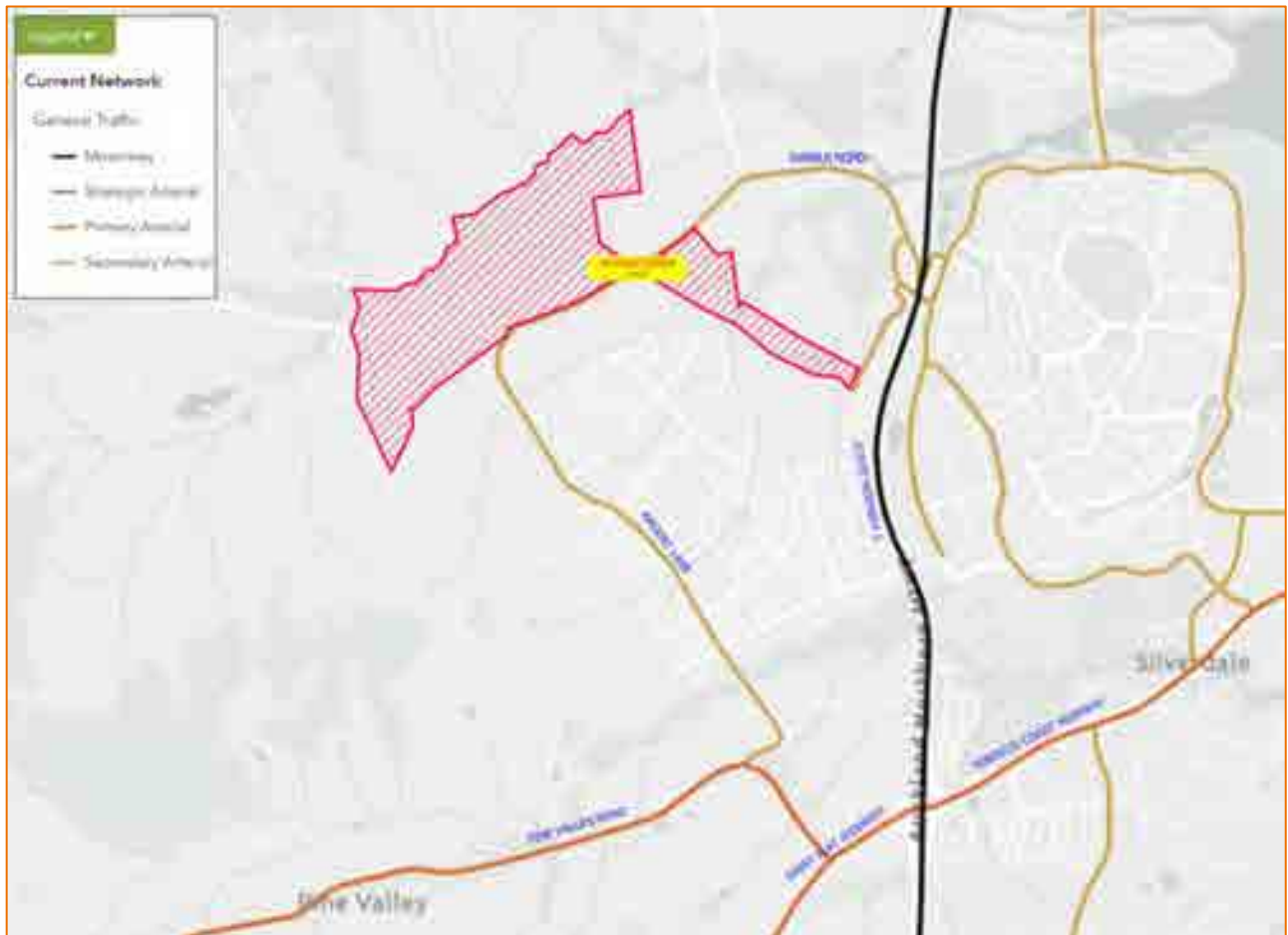


Figure 2: Existing Road Network (Source: Auckland Transport's "Future Connect" Database).

3.2.1 State Highway 1 (SH1)

The Auckland Northern Motorway (State Highway 1 (“**SH1**”)) motorway runs in a north-south direction to the east of the Milldale Stage 14-17 area. It is a key strategic corridor linking Auckland Central to the Silverdale, Warkworth, Wellsford and the wider Northland region. The motorway also provides vital connectivity between the wider Silverdale area with Albany to the south. The primary function of this strategic route is to facilitate efficient through-movement of traffic across the network.

Direct access to adjacent properties from SH1 is not permitted, with all interchanges designed as grade-separated facilities. The nearest interchanges serving the Milldale Stage 14-17 area are the Silverdale interchange, located approximately 3km to the south, and the Millwater interchange, situated around 1.5km to the east, which provides south-facing ramps only. The Grand Drive interchange is also located approximately 2km to the northeast; however, there is currently no direct connection between the development area and this interchange.

In the vicinity of the development area, SH1 comprises of two traffic lanes in each direction separated by a grassed median and wire rope barrier. The Road Controlling Authority for SH1 is the New Zealand Transport Agency Waka Kotahi (“**NZTA**”).

3.2.2 Supporting Routes

Wainui Road forms part of the southern boundary of the Milldale Stage 14-17 area and is not classified as an arterial road within the Auckland Unitary Plan Operative in Part (“**Unitary Plan**”). Despite currently not being classified as an arterial road, the road provides a direct connection between the Milldale Stage 14-17 area and the SH1 interchange at Millwater. Wainui Road is currently a two-way, two-lane road with unsealed shoulders. There is currently a 100 km/h speed limit applying to Wainui Road dropping to 50 km/h on the approach to the Millwater SH1 Interchange. It should be noted that a significant length of Wainui Road is to be upgraded by FHLD as part of Milldale Stages 1-13. This work has already been consented (**BUN60393113**) and construction is due to commence, with a view to be completed in stages over the next two years. In addition, Auckland Transport (“**AT**”) has recently approved a Designation to redefine Wainui Road to an urban arterial corridor with active mode facilities, between Endsley Rise and the Millwater interchange. This will further enhance connectivity for the development area.

Upper Orewa Road, Endsley Rise and Cemetery Road are all included within or form part of the Milldale Stage 14-17 boundary. These are all two-way, two-lane roads which connect to Wainui Road via priority-controlled intersections. These roads currently only provide localised access to abutting properties.

3.3 Existing Accessibility

3.3.1 Existing Public Transport Network

There are currently no public transport services directly serving the Milldale Stages 14-17 area, due to the limited level of development at present. It is anticipated that bus services will be extended from Milldale and provided in the vicinity and through the Milldale Stage 14-17 area itself as the surrounding area continues to be urbanised.

Figure 3 shows the current Public Transport Network Map for AT services in the vicinity of the development area (indicated with dashed red outline).



Figure 3: Hibiscus Coast Bus Routes (source AT)

The closest public transport service is the 985 service which runs from Orewa to Hibiscus Coast Station via Millwater. Currently, the nearest bus stop is located on Bankside Road via the overbridge for the Millwater interchange. The 985 service has a frequency of 20 minutes during the AM peaks and PM peaks and 30 minutes at all other times.

A relatively new bus route (989 bus service), which was established in November 2022, now connects the rapidly growing Milldale with the Hibiscus Coast Bus Station. The route is a connector route which loops between John Fair Drive and the Hibiscus Coast Bus Station via Argent Lane, operating at half-hourly intervals, seven days a week from 6am to 7:30pm. As Milldale continues to be developed there will be an opportunity to extend the bus route through to the Local Centre and then through to the northern areas of the Precinct, including the Milldale Stages 14-17 area.

The Hibiscus Coast Station in Silverdale facilitates a number of bus routes with the interchange connecting services from the Auckland City Centre to the surrounding suburbs including Whangaparāoa, Orewa, Waiwera, Warkworth and beyond. The station forms the northern extent of the Northern Express bus route with the NX1 and NX2 providing services to the City Centre via Albany Station every 3-10 minutes during the AM and PM peaks, and 15-30 minutes at all other times. Connector services to the surrounding suburbs usually run at a 30-minute to an hour frequency depending on the location. The Hibiscus Coast Station also provides a park and ride facility which typically reaches capacity during peak periods.

In the near future, within the next 10 years, AT's Future Connect database indicates the following public transport network for the northern area, as illustrated in **Figure 4**.

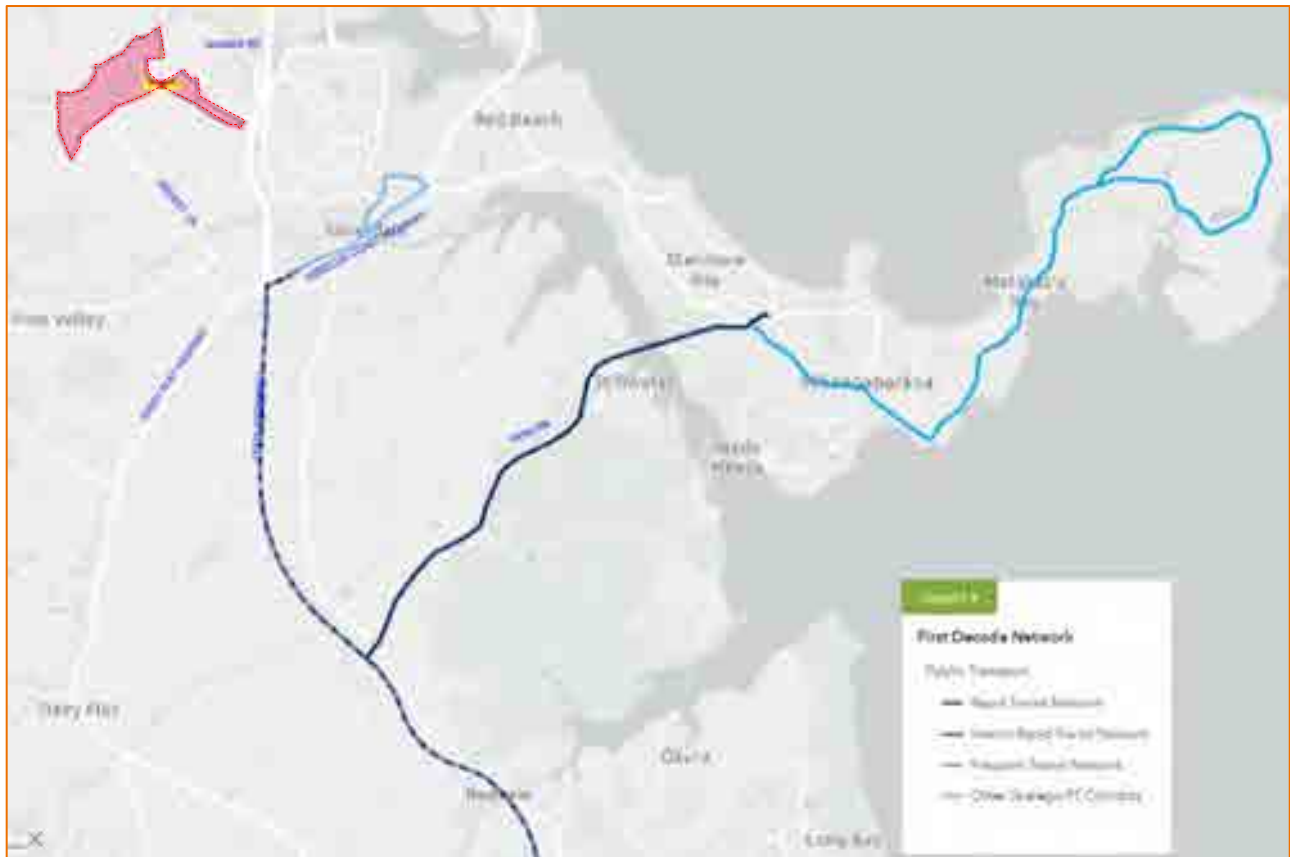


Figure 4: Future Connect Public Transport Network (First Decade)

As illustrated, the O Mahurangi – Penlink (“**Penlink**”) project provides a public transport connection between the Whangaparāoa Peninsula and SH1 via Stillwater and is expected to be complete in late 2029. The Penlink corridor will provide a two-lane road with a shared walking and cycle path. When operational, this route will effectively draw traffic away from Hibiscus Coast Highway and help relieve pressure at the Silverdale Interchange.

In addition, in October 2023 Waka Kotahi lodged an NOR for a designation with respect to a new Rapid Transit Corridor (“**RTC**”) connecting the Albany Bus Station and Milldale, via Dairy Flat which includes a cycleway and/or shared path along its length. The NOR was publicly notified in November 2023, inviting submissions from the public with submissions closing in mid-December 2023. The submissions were reviewed by Waka Kotahi and the hearings process was completed in 2024 with a decision released in January 2025 and appeals period closed in February 2025. Whilst this route is unlikely to be complete by 2038, the anticipated year of completion for Milldale Stages 14-17, it does provide options for public transport integration for the area and its surroundings into the future, providing opportunities for alternative transport modes for the northern region.

Overall, whilst public transport infrastructure in the immediate area is currently limited, these facilities are likely to be progressively improved in the future as the surrounding area becomes further developed and urbanised.

3.3.2 Existing Walking and Cycling Network

The current classifications for the surrounding routes as defined within AT's Future Connect system for the Cycling and Micro-mobility Network, with Milldale Stage 14-17 bordered and shaded in red, are shown in **Figure 5**.



Figure 5: Future Connect – Cycle and Micro-mobility (Current)

As indicated, SH1 is classified as a route with “Regional” significance for cycling and micro-mobility while Dairy Flat Highway and Hibiscus Coast Highway are both classified as routes with “Major” significance.

Future Connect has identified the deficiencies and opportunities which exist within the current cycle and micro-mobility network, and these are illustrated in **Figure 6**, again with the Milldale Stages 14-17 area bordered and shaded in red.



Figure 6: Future Connect – Cycle and Micro-mobility (Deficiencies and Opportunities)

As illustrated, a large proportion of roads which currently make up the current Cycle and Micro-mobility Network have been identified with a first ranked deficiency with high opportunities for improvement. This indicates that there is currently a lack of safe and efficient transport infrastructure for cycling and micro-mobility. This is understandable given the current nature of the transport environment.

The Future Connect 'First Decade' network for cycle and micro-mobility is shown in **Figure 7** together with the Milldale Stage 14-17 area bordered and shaded in red.



Figure 7: Future Connect – Cycle and Micro-mobility Network (First Decade)

While current walking and cycle infrastructure within the wider area is limited, as part of the Milldale development, there is a comprehensive network of active mode paths already constructed with more proposed and being developed as the development progresses. The latest active modes plan for Milldale as developed by Woods Ltd (with the Milldale Stage 14-17 area bordered and hatched in red) is shown in **Figure 8**.

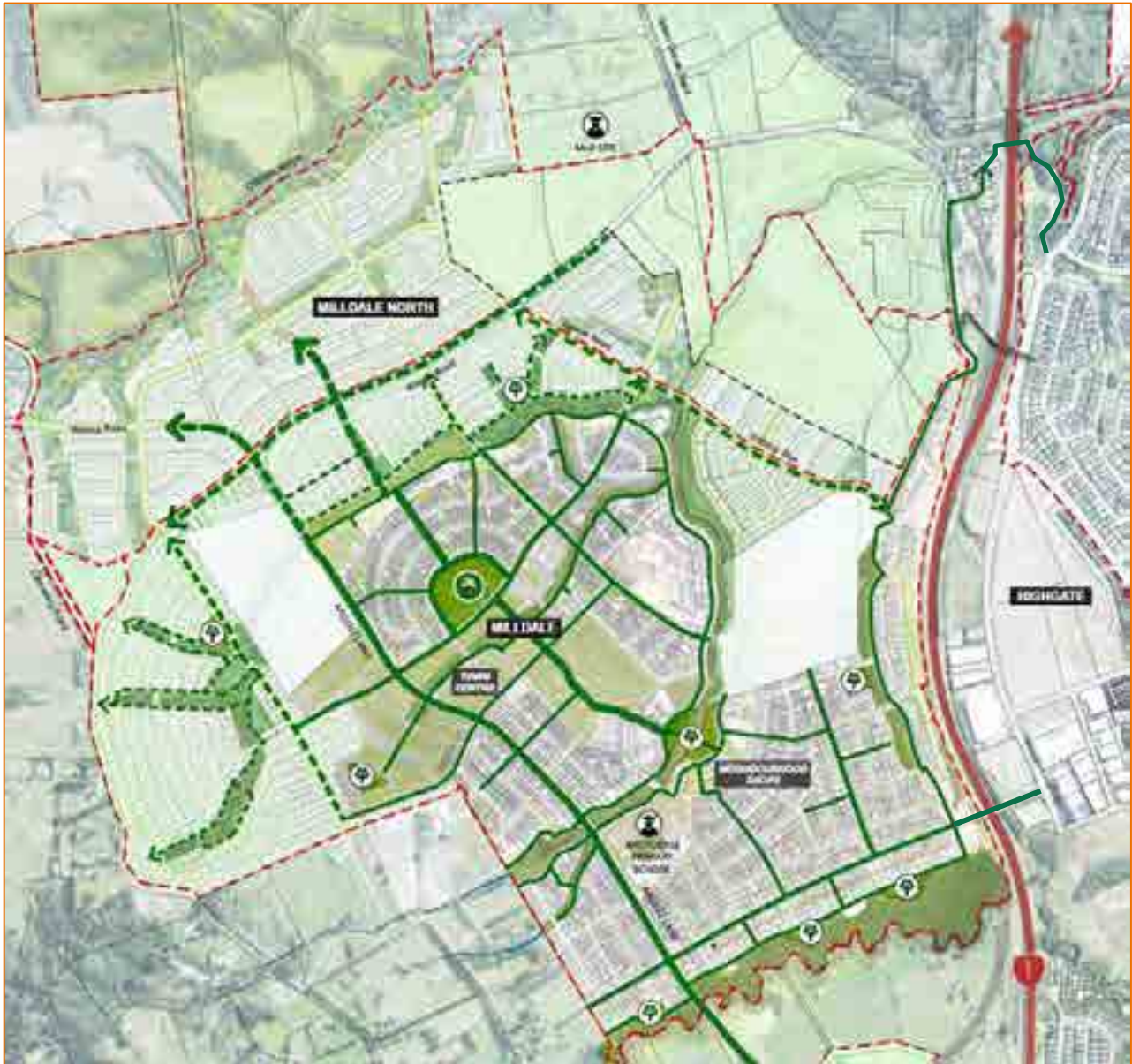


Figure 8: Active Modes Connections Plan – Milldale (source: Woods Ltd)

Within the drawing, the solid dark green lines indicate the existing active mode connections within the Milldale Stages 1-13 area and the dashed green lines indicate the proposed future connections into Milldale Stages 14-17.

The network indicates walking and cycling connections to the Local Centre, school and reserves. In addition, there is connectivity to the existing shared path network in the neighbouring Millwater area. The plan indicates a highly permeable active modes network which will encourage alternative travel modes and reduce reliance on private vehicles within the Milldale area. Furthermore, the recently completed Highgate Overbridge, extending from the eastern end of John Fair Drive, and connecting to Highgate Parkway across SH1, includes off-road cycle paths.

Much of the network is already in place and the balance will be completed by the time the Milldale Stages 14-17 area is ready for development. The network can then be extended, with provisions already made for this, to feed into the development area to form a comprehensive and integrated network of active modes throughout Milldale, once Milldale Stages 14-17 is incorporated.

Within the development area itself, all collector roads will be designed with cycle and pedestrian paths.

As such, the cycle and micro-mobility connectivity will be progressively enhanced within the entire area as it becomes more urbanised.

3.4 Existing Traffic Volumes

The average daily traffic (ADT) volumes for the roads in the vicinity of the site as sourced from the AT Traffic Count Database and the Waka Kotahi State Highway Traffic Monitoring System database are shown in **Table 1**.

Road	Location	5-day-AADT (vpd)	7-day-AADT (vpd)	Source	Survey Date
Millwater Interchange					
SH1 Northbound Off-ramp	Site: 01N40392	4,700	4,680	Waka Kotahi	2025
SH1 Northbound (mid-interchange)	Site: 01N20391	16,220	16,890	Waka Kotahi	2025
SH1 Southbound (mid-interchange)	Site: 01N10391	16,990	17,090	Waka Kotahi	2025
SH1 Southbound On-ramp	Site: 01N30392	5,550	5,580	Waka Kotahi	2025
Silverdale Interchange					
SH1 Northbound Off-ramp	Site: 01N40398	17,270	17,330	Waka Kotahi	2025
SH1 Northbound (mid-interchange)	Site: 01N20398	16,870	17,460	Waka Kotahi	2025
SH1 Southbound (mid-interchange)	Site: 01N10398	17,200	18,330	Waka Kotahi	2025
SH1 Southbound On-ramp	Site: 01N30398	18,150	18,070	Waka Kotahi	2025
SH1 south of the interchange	Combined total of above	69,490	71,190	Waka Kotahi	2025
Arterial Roads					
Dairy Flat Highway	SH1 on-ramp/off-ramp roundabout and Pine Valley Road	20,930	19,610	AT	05/03/2025
Pine Valley Road	Between Old Pine Valley Road and Dairy Flat Highway	10,370	9,980	AT	24/05/2024
Hibiscus Coast Highway	Between Whangaparāoa Road and Wainui Road	44,280	42,160	AT	06/03/2025
Local Roads					
Wainui Road (Rural)	Between Upper Orewa Road and Lysnar Road	5,460	5,050	AT	12/11/2024
Upper Orewa Road	Between Wainui Road and Weranui Road	1,190	1,130	AT	06/21/2017

Table 1: Existing Traffic Volumes

As can be seen, and as expected for a road of national significance, SH1 carries the greatest volumes on the road network in the vicinity of the site. This is followed by the Hibiscus Coast Highway which forms the gateway for access to the wider Silverdale-Orewa area east of SH1 and the Whangaparaoa Peninsula.

Wainui Road, west of SH1 is currently a local rural road and carries generally low traffic volumes in the order of 5,500 vpd or less.

Traffic count information is not available for Argent Lane, Cemetery Road, Gervin Road and Lysnar Road as they currently serve only a small number of dwellings. It is anticipated that these roads currently only carry low volumes of traffic.

Overall, the current traffic volumes on the roads in the vicinity of the site are considered typical of the nature and function of these roads within the road network from a transportation perspective.

3.5 Existing Road Safety Record

A search was made of the New Zealand Transport Agency Waka Kotahi's ("NZTA") Crash Analysis System ("CAS") for all reported crashes in the vicinity of the Milldale Stage 14-17 area for the full five-year period from 2021 to 2025 including all available results from the 2026 partial reporting period (as retrieved on 11 August 2026).

The search area comprised:

- Wainui Road between Cemetery Road and the Millwater overbridge;
- Wainui Road Off-ramp;
- Millwater Interchange (including the Millwater overbridge, Millwater Parkway and Millwater On-ramp);
- Endsley Rise;
- Sidwell Road;
- Kowhai Road 50m north of the Kowhai Road / Wainui Road intersection; and
- Upper Orewa Road between Wainui Road and 500m north.

The search area included at least a 50m radius at intersections along the sections of road listed above.

The geographic extent of the CAS search area (with the Milldale Stages 14-17 area overlaid) is shown in **Figure 9** below.



Figure 9: CAS Search Extent and Crash Summary

The crash assessment identifies a total of 25 crashes reported within the study area. However, on closer inspection of the crash records, three occurred on the SH1 mainline and one occurred in Millwater so have not been geolocated correctly in the CAS database. These four crashes were excluded from further assessment.

Of the remaining 21 crashes, two resulted in serious injuries, eight resulted in minor injuries and the remaining 11 were non-injury crashes. No fatal crashes were recorded within the search extent and time period.

A total of nine of the 21 crashes involved drivers losing control of their vehicles at bends and under wet conditions and six involved rear end type crashes, some at road works locations. Two of the crashes occurred as a consequence of drivers suffering medical events and one crash reportedly was due to the driver being intoxicated at the time of the crash. The remaining three crashes involved drivers failing to stop at a red light or give way at a priority intersection, and a driver trying to evade a police checkpoint.

Across the search area, the nature of the crashes and their quantum are broadly typical of similar roads and environments around Auckland. In summary, the crash history does not suggest any inherent or repeated road safety issues associated with the road network in the vicinity of the subject site.

Further, as the section of Wainui Road is upgraded to an arterial road standard between the Millwater interchange and Argent Lane, and as the speed limit is to be reduced, these factors will help enhance the safety in the area for all road users.

4. Future Transport Context

This chapter summarises the known proposals and committed projects of relevance to the transport environment in the area during or after the proposed development of the Milldale Stages 14-17 area.

Figure 10 shows the current Unitary Plan zoning for Milldale, with the Milldale Stages 14-17 area hatched and outlined in red.



Figure 10: Auckland Unitary Plan Zoning

The future transport network is going to be affected by planned infrastructure upgrade projects in the immediate and wider area. Various infrastructure upgrade projects have been committed in the current National Land Transport Programme (“**NLTP**”) and Auckland Regional Land Transport Plan (“**RLTP**”). They form part of the Indicative Strategic Transport Network in the North developed by Te Tupu Ngātahi – Supporting Growth Alliance (“**SGA**”), for Notices of Requirement (NORs) which have recently been notified for submissions for various network upgrades identified in **Figure 11**.

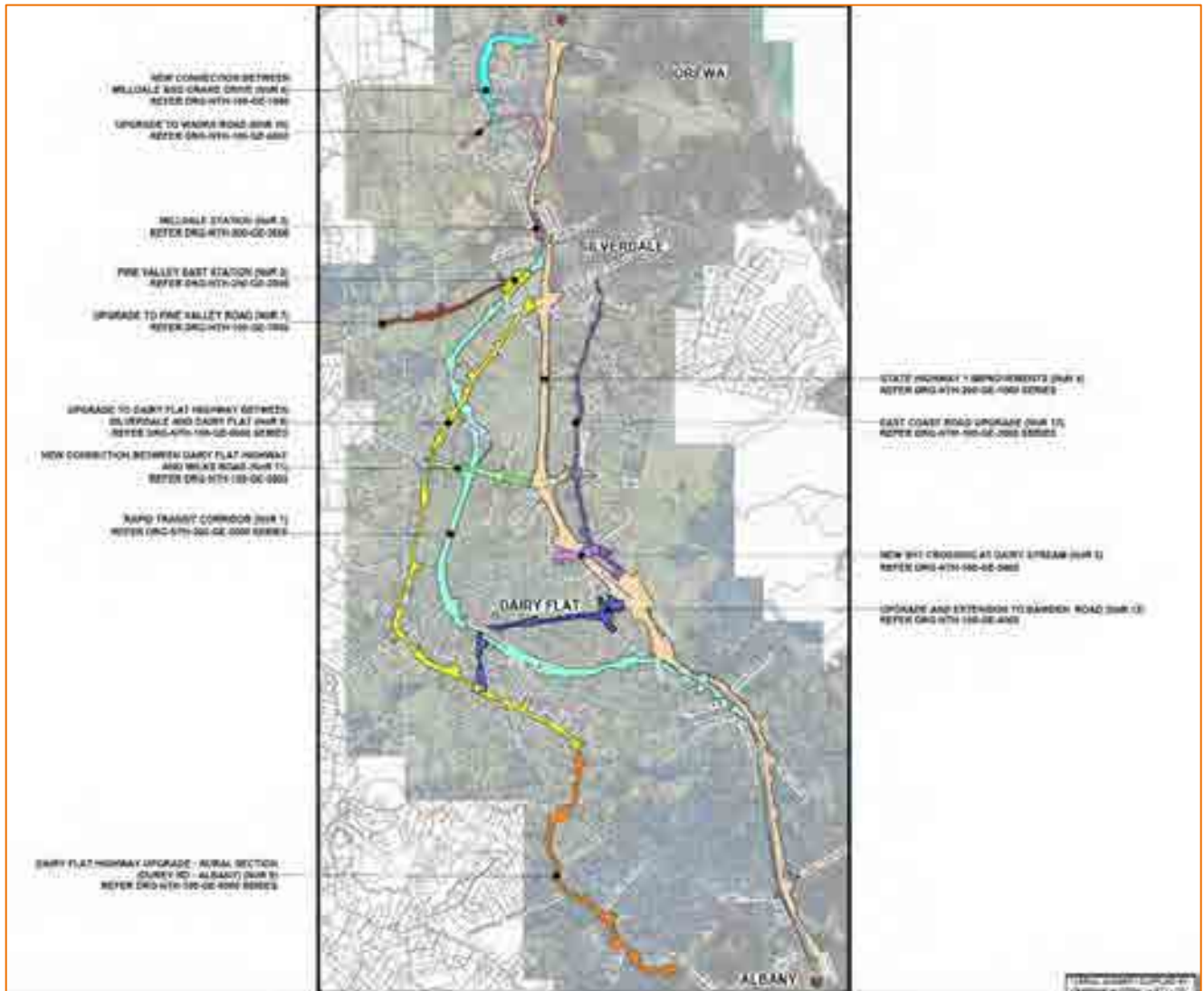


Figure 11: Notices of Requirement - North (AT and Waka Kotahi)

As illustrated, the SGA has also outlined a long-term strategic transport network 7 for Silverdale, Dairy Flat, Wainui and Orewa in the North Auckland area with a number of infrastructure proposals to support the on-going growth of the northern region including:

- A new RTC route along SH1, diverting through Dairy Flat and connecting back alongside SH1 via the Milldale. As noted earlier, an NOR to secure the proposed route was lodged by Waka Kotahi in October 2023, and has been notified by Auckland Council;
- Inclusion of bus shoulder lanes from Albany to Silverdale (connecting the Albany and Hibiscus Coast Bus Stations as an interim measure prior to the construction of the RTC route);
- New walking and cycling corridors along SH1, through Dairy Flat and along Hibiscus Coast Highway and Grand Drive;
- Additional managed motorway capacity between Albany and Silverdale;
- New road connection between Milldale and Grand Drive via Upper Orewa Road;
- Upgrade of Pine Valley Road, Wainui Road and Dairy Flat Highway to urban standards including walking and cycling. It should be noted that the section of Wainui Road along the Milldale Stage 10-13 frontage is already subject to an Infrastructure Funding Agreement ("IFA") and FHLD are committed to constructing this section;
- Improved Silverdale interchange (for active modes); and
- New motorway interchange at Wilks Road.

As of May 2026, it is understood that these projects are yet to be prioritised for funding and delivery over the next 10 to 30 years.

Other priority projects identified are:

- The O Mahurangi – Penlink (“**Penlink**”) project; and
- Argent Lane connection and Milldale to Highgate SH1 crossing (“**Highgate Overbridge**”).

It should be noted that construction has already begun on Penlink and the Highgate Overbridge is now complete and operational. Further background information is provided below.

4.1 Penlink

Penlink is a transportation link between the Whangaparāoa Peninsula and the wider Auckland area. The project features a 7km transport corridor between the Whangaparāoa Peninsula and SH1 with a new interchange at the SH1 end and local road connectivity to East Coast Road, Stillwater and Whangaparāoa Road. The project also seeks to establish a separated shared path for pedestrian and cyclist connectivity along the corridor.

Penlink seeks to tackle several transport related issues and commitments of relevance to the northern Auckland region. The link is expected to improve transport capacity and resilience and thereby reliability and journey experiences along the network for public transport and private vehicles. The provisions for active mode travel along the corridor will seek to enable mode choice and help improve climate outcomes influenced by transportation. Additionally, the link will enable the safe and efficient development of new homes and activities in the wider area, including in Silverdale-Dairy Flat, needed to support Auckland’s growing population.

As noted, the southern end of the Penlink corridor will connect with SH1 and East Coast Road, at a point approximately 3km south of the Milldale Stage 14-17 area, while local links will connect the northern side to the Whangaparāoa Peninsula. Once completed, the route will prove a more direct and efficient route for travel between the Whangaparāoa Peninsula and Auckland, and is therefore expected to carry a significant portion of trips between the two population centres, that previously would have had to navigate the Silverdale Interchange and its surroundings. As a consequence, SH1 in the vicinity of the site and the surrounding road network is forecast to experience less congestion, thereby freeing up capacity at the Silverdale interchange allowing Milldale to become more easily accessible via Silverdale and SH1.

Construction of this project has commenced (due for completion in late 2029), and the traffic modelling for this assessment assumes that Penlink has been constructed and fully operational.

4.2 Highgate Overbridge

The Highgate Overbridge project involves the spanning of SH1 between the eastern end of John Fair Drive and Highgate Parkway. This project was identified as being required as part of Milldale Stages 1-13 and provides more permeability within the transport network, directly connecting Milldale with Silverdale, without having to rely entirely on the two motorway interchanges for east-west travel.

The overbridge was officially opened in February 2025.

4.3 Summary

These infrastructure proposals are currently at various stages of investigation/implementation. All projects, if completed, will provide a well-connected, safer, and more efficient transport network in the region including any travel associated with the proposed development area and its activities. It should be noted that the mitigation measures proposed as part of the Milldale Stage 14-17 project will also have a wider benefit to travelling public and would complement these SGA projects.

5. Future Land Developments

Given the Milldale Stage 14-17 area sits within the northern growth area with extensive FUZ zoning, there is the potential for substantial development in the future. A number of known developments are being proposed within the wider Wainui East and Silverdale West area, including Milldale Stages 1-13, an area generally bounded by Dairy Flat Highway, State Highway 1 and Wilks Road (**"Silverdale West Industrial Precinct"**) (subject to a separate plan change application which was made Operative in 2026), a development to the north with access off Grand Drive (**"Ara Hills"**) and another development south of Ara Hills (**"Delmore Development"**). These are all located in relatively close proximity to the development area.

The Silverdale West Industrial Precinct is proposed to be developed for light industrial activities. Milldale Stages 1-13 is primarily residential with some supporting retail and community activities and the Ara Hills and Delmore developments are both predominantly residential. The areas for each development are illustrated in **Figure 12** (Milldale Stages 1-13 with a yellow border and Silverdale West with a green border). For context, the Milldale Stage 14-17 area is also included (with a red border).

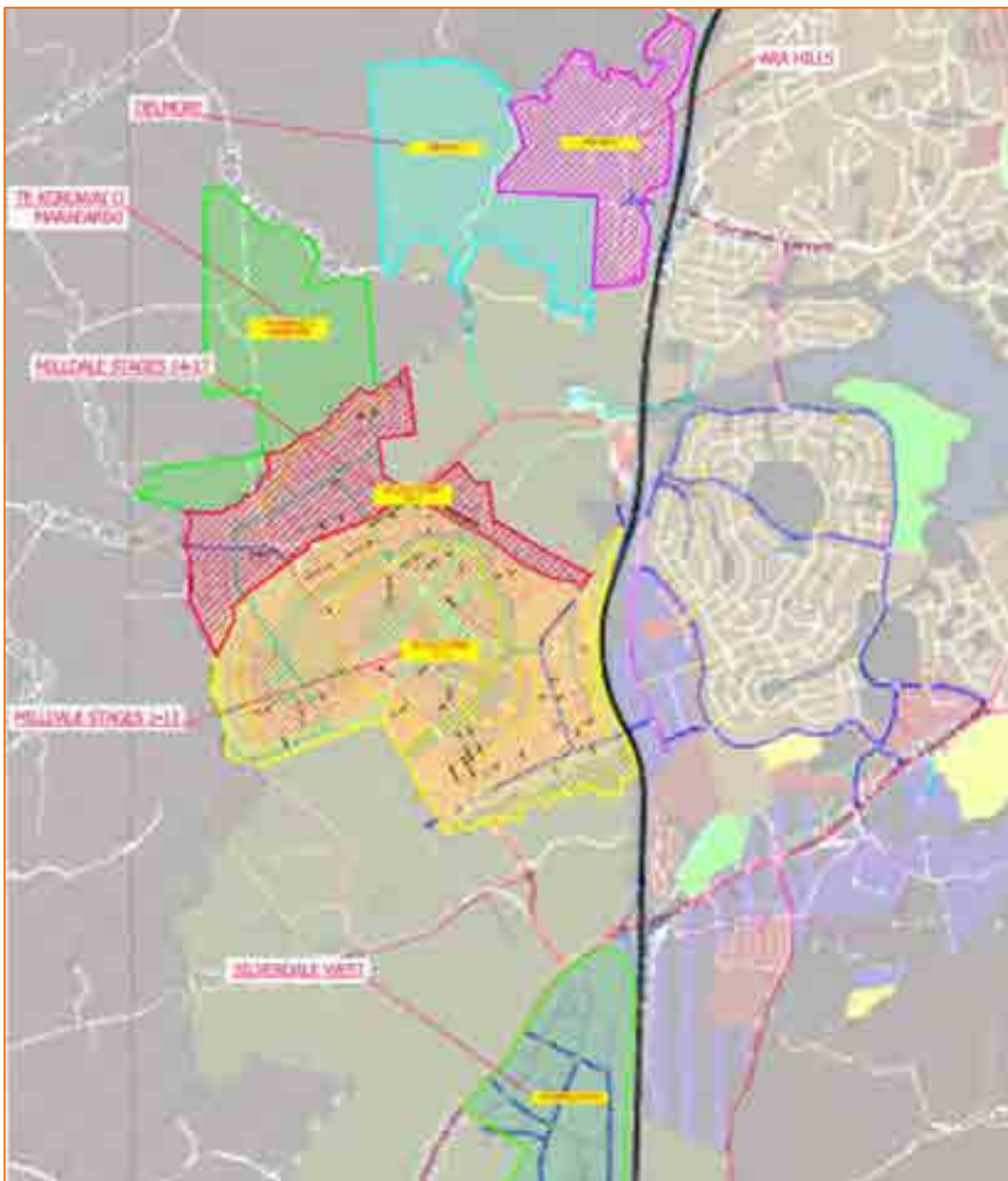


Figure 12: Future Land Development

5.1 Silverdale West Industrial Precinct

The Silverdale West Industrial Precinct, led by FHLD and Fletcher Development Ltd ("**Fletcher**"), will facilitate around 107 ha (gross area) of industrial land with some public open spaces and public road network to support the proposed industrial activity. For the purposes of the Silverdale West PPC, the developers assumed that some 57% of the gross area (or around 61 ha) would be developable and that 40% of the developable area (around 24 ha) will be Gross Floor Area ("**GFA**").

Economics data also anticipates the following breakdown of activity types within the Silverdale West light industrial area:

- General Industrial 20%
- Industrial Park 15%
- Manufacturing 15%
- Warehousing / Distribution / Logistics 50%

These assumptions have informed the modelling assessment described later in this ITA.

5.2 Milldale

The existing Wainui Precinct is a live zoned area applying to Milldale Stages 1-13 and is located immediately south of the Milldale Stage 14-17 area. Construction is well advanced (around 1,700 dwellings have already been constructed) and when completed the development will comprise around 4,500 residential dwellings, a supporting local centre and neighbourhood centres.

The full buildout of Milldale Stages 1-13 has conservatively been assumed to be complete by around 2030/31, around the time housing in the Milldale Stage 14-17 area will start to be developed, which has been included in the modelling assessment which follows.

5.3 Ara Hills

The Ara Hills development to the north is currently being constructed. At this stage consent has been approved for up to 575 dwellings to be developed and this has been included in the modelling assessment. A PPC has been lodged to facilitate a greater level of development which would allow up to 900 dwellings, however, no further consents have been lodged.

5.4 Delmore Development

A resource consent application for up to 1,250 dwellings is currently being processed under the FTAA and has received a draft decision to approve. Staging for this development indicates that some 1,100 dwellings will be completed by the time the Milldale Stage 14-17 area is fully developed and this has been included in the modelling assessment.

6. Proposed Development

The location of the Milldale Stage 14-17 area has been shown previously in Figure 12. The proposed development area for residential subdivision is generally bounded by Cemetery Road to the west, Wainui Road to the south, the Orewa River to the north and Upper Orewa Road and Endsley Rise to the east.

For infrastructure planning purposes, the development is assumed to accommodate some 1,425 dwellings. The proposed development is laid out to effectively integrate with future development in the surrounding area. This includes the MoE site to the immediate east and the roading network to the south and east.

6.1 Proposed Transport Network

Through the modelling assessment which follows, a number of key infrastructure upgrades have been identified as being required to support the Milldale Stage 14-17 project and the Silverdale West development. Detailed designs have not yet been progressed, but the key wider area upgrades include the following:

1. Initial upgrade of the Pine Valley Road / Dairy Flat Highway intersection.
2. Signalisation of Wilks Road/Dairy Flat Highway intersection.
3. Signalisation of Wilks Road/East Coast Road intersection.
4. Upgrade of the Silverdale interchange to include:
 - Left turn slip lane on the western approach.
 - Extending the southbound off-ramp left turn lane; and
 - Queue metering the southbound off-ramp for the morning peak only (further details in Section 7.4 and Appendices).
5. Upgrade Argent Lane / Pine Valley Road roundabout (double-laning).

A diagram which illustrates the locations of the upgrades listed above is provided in **Figure 13**.



Figure 13: Wider Area Upgrades

Several additional upgrades are necessary to support the connectivity of the Milldale Stage 14-17 area with the surrounding transportation network. These comprise of the following:

1. Three single-lane roundabouts along Wainui Road to provide access to the internal roads within the development;
2. Three priority Left-In, Left-Out intersections to the east and west of the Wainui Road / Argent Lane roundabout;
3. Three priority tee intersections to Wainui Road; and
4. Connections to Endsley Rise to provide access to the south-eastern areas of the Milldale Stage 14-17 area.

These upgrades will be progressively implemented as the Milldale Stage 14-17 area becomes built out.

The locations of these upgrades are shown in **Figure 14** below.

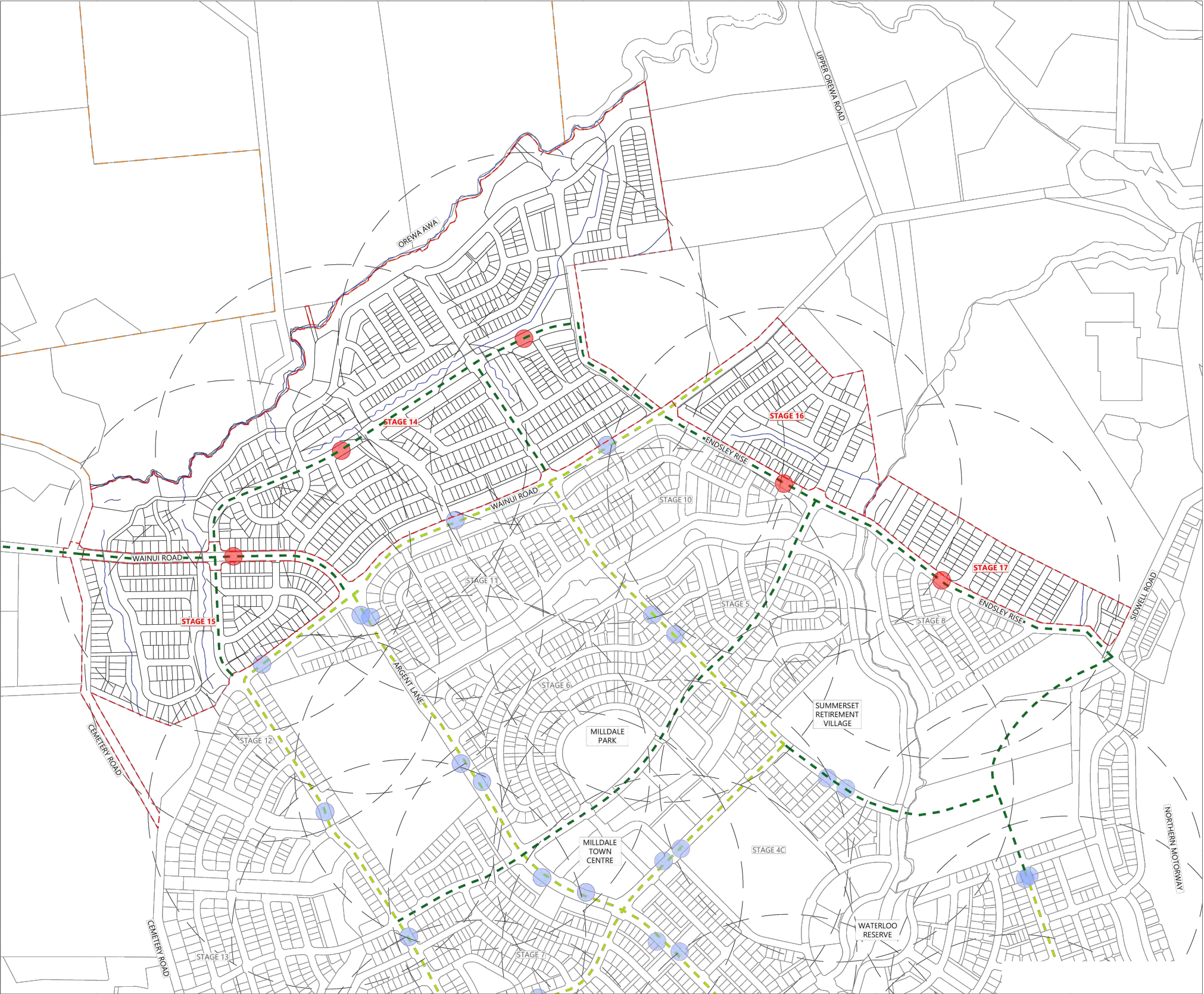


Figure 14: Localised upgrades to support the Milldale North area

The external upgrades support and complement the internal roading layout of the Milldale Stage 14-17 area and the internal arrangements are discussed in the following sections of this report.

The proposed transportation network for the development includes public transport routes and bus stops through the Stage 14 to 17 area. These public transport routes connect to the existing and proposed routes through the Stages 1 to 13 area to provide a contiguous public transport network covering the entire Milldale area. The proposed public transport network is shown in **Figure 15**.

Friday, 7 August 2026 4:23:52 pm



LEGEND:

- EXTENTS OF MILLDALE STAGES 14-17 DEVELOPMENT AREA
- EXTENTS OF TE KOROWAI O MARAEARIKI
- PROPOSED BOUNDARIES
- EXISTING BOUNDARIES
- STREAM
- PROPOSED BUS STOP LOCATION (INDICATIVE)
- FUTURE BUS STOP LOCATION (INDICATIVE)
- EXISTING BUS STOP LOCATION
- PLANNED BUS ROUTE (AT)
- POTENTIAL FUTURE BUS ROUTE
- 400m BUS STOP CATCHMENT

NOTES

- EXISTING BOUNDARIES SHOWN INCLUDES FUTURE BOUNDARIES CONSENTED UNDER BUN60446761 AND BUN60430899. THESE BOUNDARIES ARE SUBJECT TO FINAL SURVEY APPROVAL.

REVISION DETAILS		BY	DATE
1	ISSUED FOR CONSENT	SK	AUG 2026

SURVEYED	WOODS	WAINUI ROAD MILLDALE AUCKLAND
DESIGNED	WOODS	
DRAWN	DH	
CHECKED	SK	
APPROVED	JW	WOODS.CO.NZ



MILLDALE STAGES 14-17 FAST-TRACK
PHASE 1: PUBLIC TRANSPORT NETWORK PLAN

STATUS	ISSUED FOR CONSENT	REV
COUNCIL	AUCKLAND COUNCIL	1
DWG NO	P25-609-01-2060-RD	

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REV	DATE	DRN	CHK	DESCRIPTION
A	07.08.26	TLJ	----	Source: Woods Ltd issued August 2026

MILLDALE NORTH FAST-TRACK (ROAD TYPOLOGIES)
PUBLIC TRANSPORT NETWORK PLAN

DRAWN: TLJ	---	---
DATE: 07.08.26	STATUS: RC	
SCALE: N.T.S		
DWG NO: 310206516A2B		



6.1.1 Road Network and Access to Milldale Stage 14-17

6.1.1.1 Internal Road Network

Figure 16 illustrates the proposed road network hierarchy within the Milldale Stage 14-17 area. The collector roads will be extensions of collector roads being constructed within the Milldale Stages 1-13 area. Local roads will feed off those collector routes to service the individual dwellings and activities which will eventually be developed throughout the Milldale Stage 14-17 area.

As can be seen in Figure 16, Wainui Road will form the main east-west route along the southern boundary of the Milldale Stage 14-17 area and is expected to carry development-related traffic onto SH1 via the Millwater interchange and to the rest of the Silverdale-Orewa area east of SH1. Endsley Rise and Argent Lane are also access routes for the Milldale Stage 14-17 area, and will provide connectivity to the surrounding transport network, with the latter providing a direct route to Dairy Flat Highway and the Silverdale Interchange.

As indicated, the internal roads for the Milldale Stage 14-17 area will integrate seamlessly with the road network within Milldale Stages 1-13.

6.1.1.2 Internal Road Network –Cross-Sections

A number of classifications of new roads are proposed within Milldale Stage 14-17 area. These include;

- collector,
- local,
- stream edge, and
- school access roads.

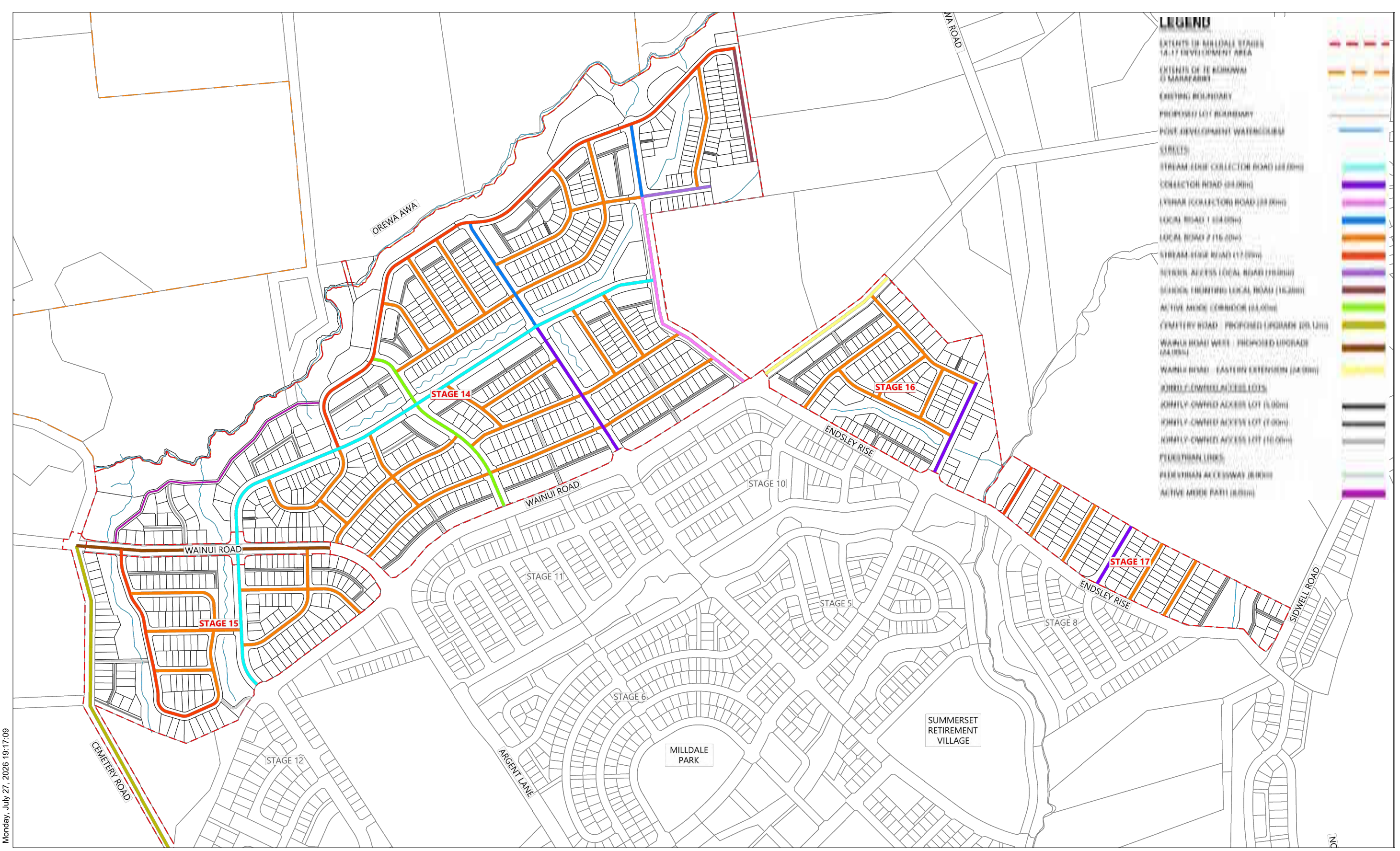
There is also an active mode corridor extending from the Milldale green link to the south included within the site.

Collector type roads are proposed to have a 24m road reserve, which is the current standard adopted for Milldale, comprising of 1.8m wide footpaths, cycle lanes on both sides of the roadway (separated from the road carriageway by berms or indented parking bays) and a two-lane carriageway. In the situation where FHLDD does not control the land on either side of the road, sufficient width is to be reserved to allow a future footpath and back berm.

Cross-sections for the collector roads is shown in **Figure 17** and **Figure 18**. These cross-sections are considered appropriate and will integrate well with the other collector roads provided throughout Milldale Stages 1-13.

Local roads are proposed to typically have a 16m road reserve, comprised of berms, footpaths parking bays/planting strips and a two-lane carriageway, except where the local roads join the ends of collector roads. In such instances, they will maintain the 24m road reserve to match the collector road reserve width. Cross-sections for the local roads are shown in **Figure 19** and **Figure 20**. The cross-sections for the local roads are considered appropriate and acceptable to serve the needs of the development.

The stream edge road cross-sections are shown in **Figure 21** and **Figure 22**. The stream edge road which runs east-west along the central spine of the northern portion of the Milldale Stage 14-17 area also serves as the primary collector route through the site. This road has a 24m road reserve width, consistent with the other collector roads in Milldale Stage 14-17 and the wider Milldale development. The road reserve accommodates a bi-directional cycleway along the stream edge, footpaths on both sides separated from the road carriageway by berms or indented parking bays and one traffic lane in each direction of travel. The other stream edge road runs adjacent to the northern boundary of the site and will have a 17m road reserve width comprising of a 3m wide recreational path along the stream edge and 1.8m wide footpath on the opposite side, both separated by either berms or indented parking bays on both sides of the single-lane two-way carriageway. The cross-sections for the stream edge roads are considered appropriate and acceptable.



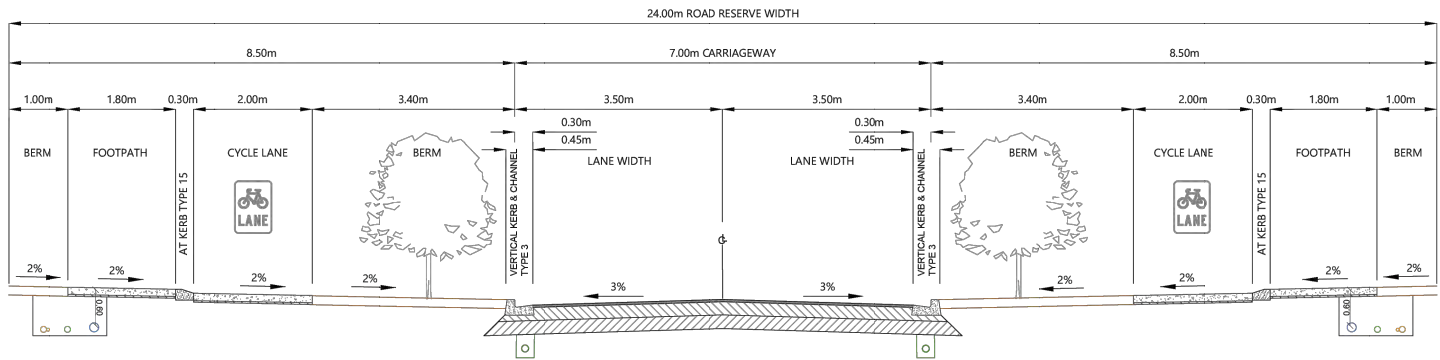
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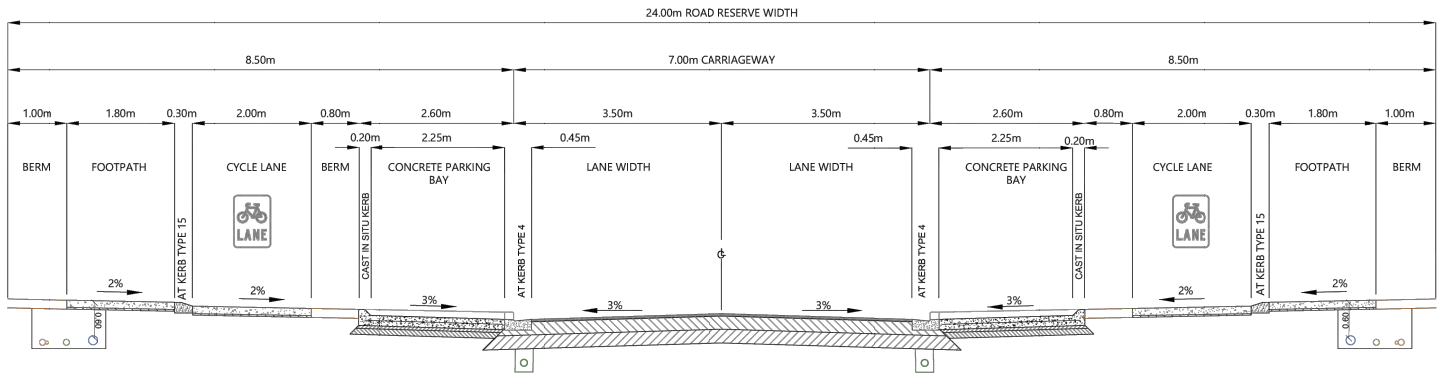
MILLDALE NORTH FAST-TRACK (ROAD TYPOLOGIES)
ROAD TYPOLOGY PLAN

DRAWN: TLJ	---	---
DATE: 07.08.26	STATUS: RC	
SCALE: N.T.S		
DWG NO:310206516A2B		

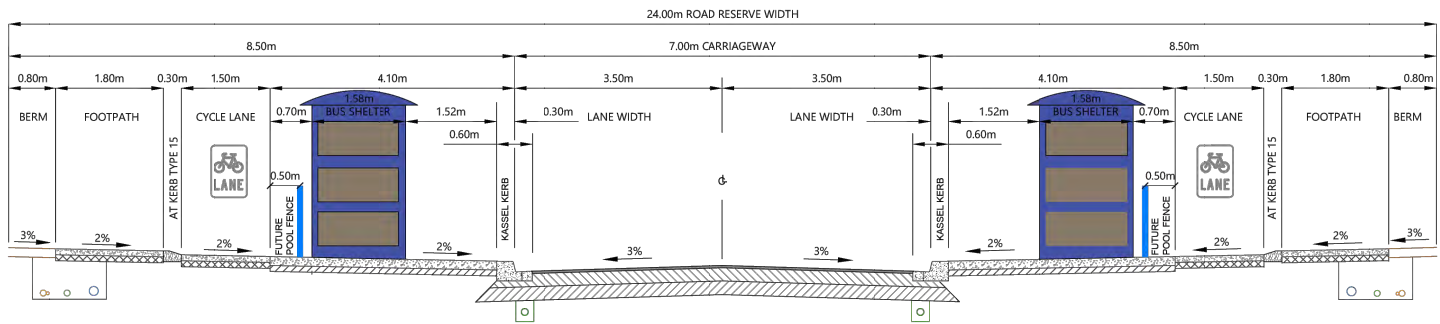
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COLLECTOR ROAD WITH BERM (24.0m)



COLLECTOR ROAD WITH PARKING BAY (24.0m)



COLLECTOR ROAD WITH INDICATIVE BUS SHELTER (24.0m)



NOTES

1. ALL WORKS AND MATERIALS TO COMPLY WITH AUCKLAND COUNCIL AND AUCKLAND TRANSPORT STANDARDS.
2. TYPICAL CROSS-SECTION WIDTHS MAY VARY LOCALLY TO ACCOMMODATE PARKING SPACES
3. PAVEMENT DETAILS SHOWN ARE INDICATIVE ONLY. FINAL DESIGN DETAILS ARE TO BE DETERMINED AT THE ENGINEERING APPROVAL STAGE.

REVISION DETAILS		BY	DATE
1	ISSUED FOR CONSENT	SK	AUG 2026

SURVEYED	WOODS	WAINUI ROAD MILLDALE AUCKLAND
DESIGNED	WOODS	
DRAWN	FA	
CHECKED	SK	
APPROVED	JW	WOODS.CO.NZ



MILLDALE
STAGES 14-17
FAST-TRACK

PHASE 1: TYPICAL CROSS SECTION
COLLECTOR ROAD

STATUS	ISSUED FOR CONSENT	REV
		1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P25-609-01-2021-RD	

File: C:\1205\DATA\WP-AU-APP-02\P25-609 - MILLDALE NORTH FAST-TRACK APPLICATION_2265\02 DRAWINGS\UT ENG\01 PHASE 1 - DEVELOPMENT AREA\P25-609-01-2010-RD-ROAD TYPOLOGY PLAN.DWG

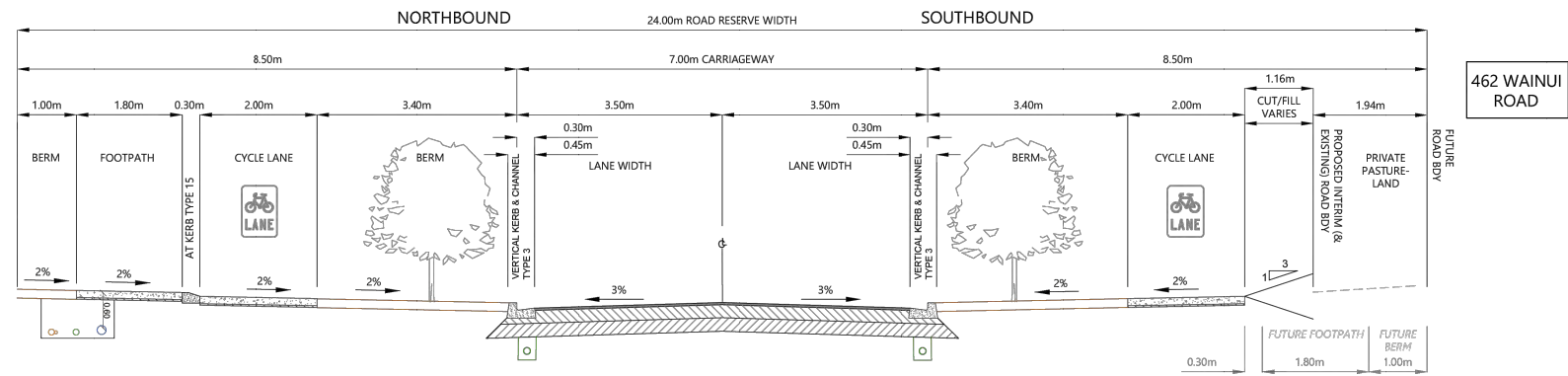
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MILLDALE NORTH FAST-TRACK (ROAD TYPOLOGIES)
COLLECTOR ROAD (GENERAL)

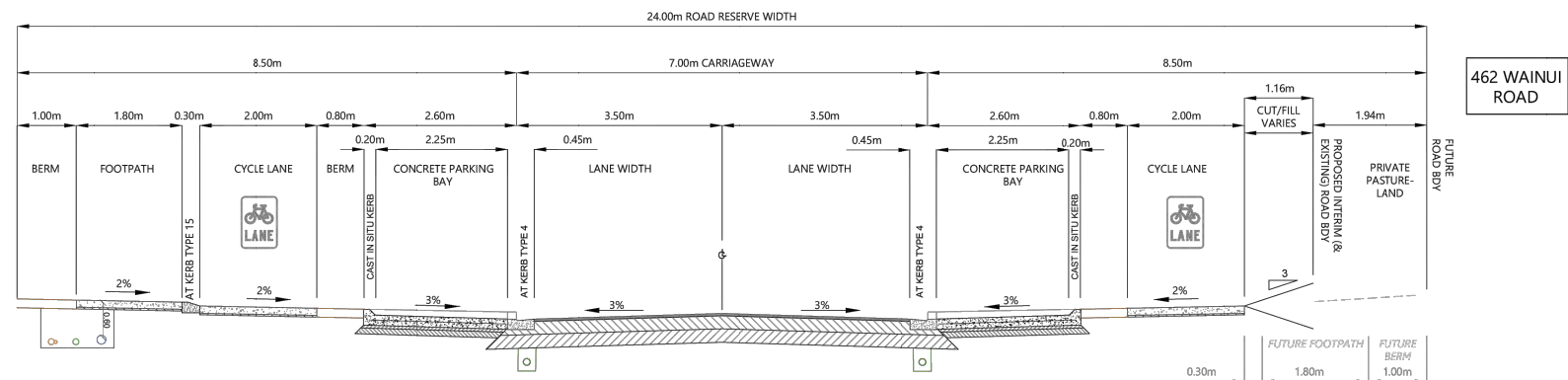
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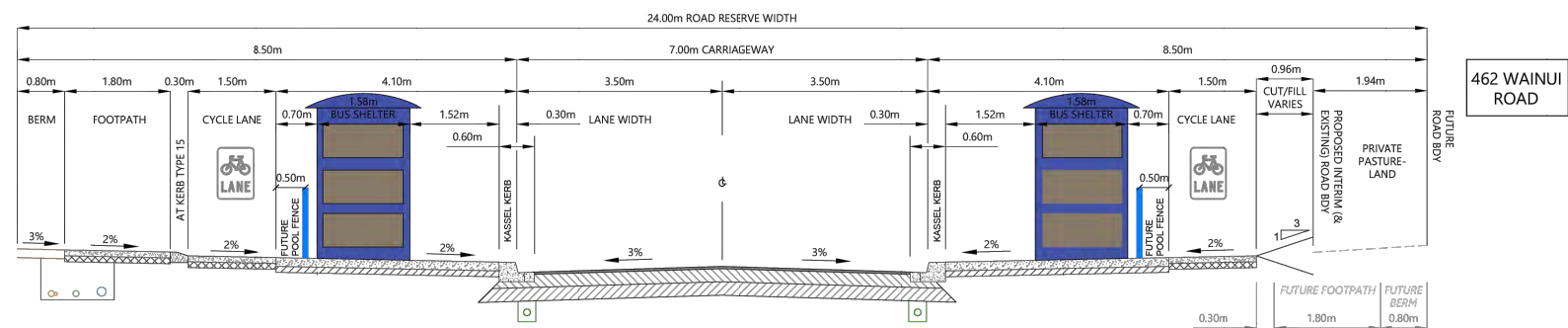
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LYSNAR (COLLECTOR) ROAD WITH BERM (24.0m)



LYSNAR (COLLECTOR) ROAD WITH PARKING BAY (24.0m)



LYSNAR (COLLECTOR) ROAD WITH INDICATIVE BUS SHELTER (24.0m)



NOTES

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REVISION DETAILS		BY	DATE
1	ISSUED FOR CONSENT	SK	AUG 2026

SURVEYED	WOODS	WAINUI ROAD MILLDALE AUCKLAND
DESIGNED	WOODS	
DRAWN	FA	
CHECKED	SK	
APPROVED	JW	WOODS.CO.NZ



MILLDALE STAGES 14-17 FAST-TRACK

PHASE 1: TYPICAL CROSS SECTION
LYSNAR (COLLECTOR) ROAD

STATUS	ISSUED FOR CONSENT	REV
COUNCIL	AUCKLAND COUNCIL	1
DWG NO	P25-609-01-2022-RD	

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REV	DATE	DRN	CHK	DESCRIPTION
A	07.08.26	TLJ	----	Source: Woods Ltd issued August 2026

MILLDALE NORTH FAST-TRACK (ROAD TYPOLOGIES) COLLECTOR ROAD (LYSNAR)

DRAWN: TLJ

DATE: 07.08.26

SCALE: N.T.S

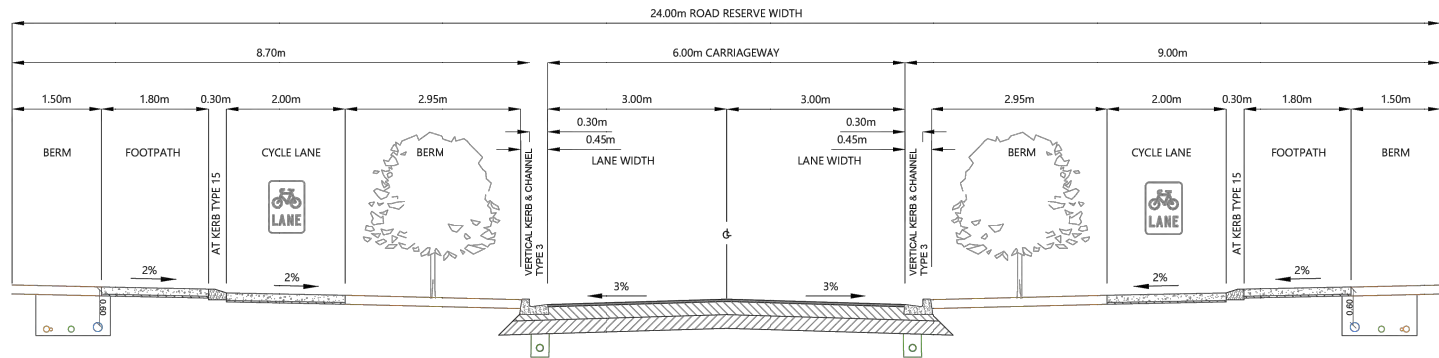
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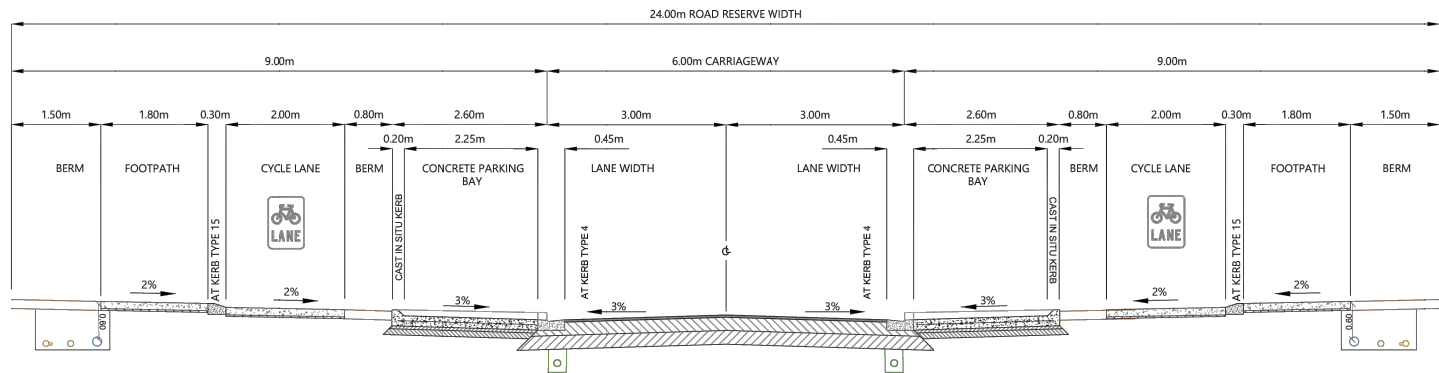


18

Friday, 7 August 2026 4:23:52 pm



LOCAL ROAD TYPE 1 WITH BERM (24.0m)



LOCAL ROAD TYPE 1 ROAD WITH PARKING BAY (24.0m)

NOTES

- ALL WORKS AND MATERIALS TO COMPLY WITH AUCKLAND COUNCIL AND AUCKLAND TRANSPORT STANDARDS.
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REVISION DETAILS		BY	DATE
1	ISSUED FOR CONSENT	SK	AUG 2026

SURVEYED	WOODS	WAINUI ROAD MILLDALE AUCKLAND
DESIGNED	WOODS	
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CHECKED	SK	
APPROVED	JW	WOODS.CO.NZ



MILLDALE
STAGES 14-17
FAST-TRACK

PHASE 1: TYPICAL CROSS SECTION
LOCAL ROAD TYPE 1

STATUS	ISSUED FOR CONSENT	REV
COUNCIL	AUCKLAND COUNCIL	1
DWG NO	P25-609-01-2023-RD	

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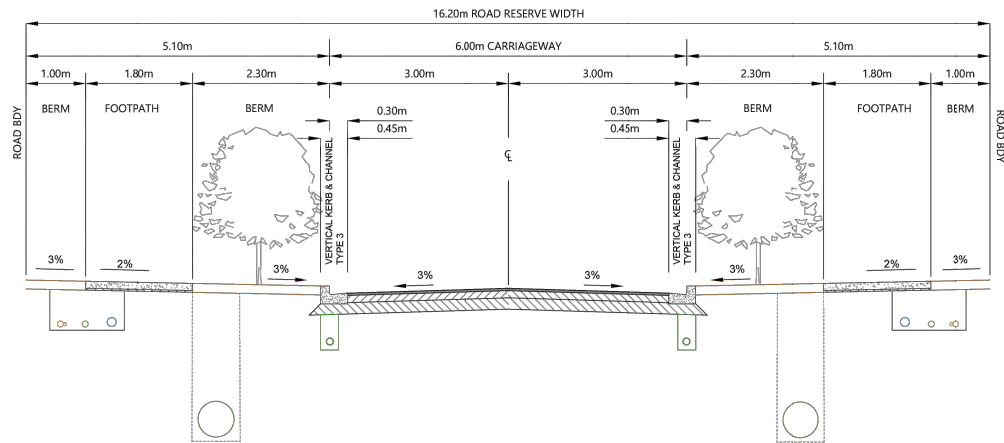
MILLDALE NORTH FAST-TRACK (ROAD TYPOLOGIES)
LOCAL ROAD TYPE 1

DRAWN: TLJ
DATE: 07.08.26
SCALE: N.T.S
DWG NO: 310206516A2B

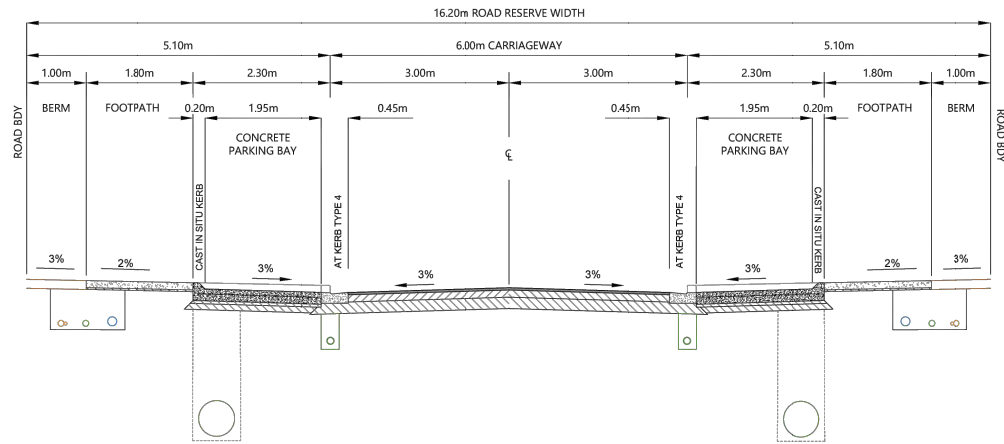
STATUS: RC



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LOCAL ROAD TYPE 2 WITH BERM (16.20m)



LOCAL ROAD TYPE 2 WITH PARKING BAY (16.20m)



- NOTES
1. ALL WORKS AND MATERIALS TO COMPLY WITH AUCKLAND COUNCIL AND AUCKLAND TRANSPORT STANDARDS.
 2. TYPICAL CROSS-SECTION WIDTHS MAY VARY LOCALLY TO ACCOMMODATE PARKING SPACES
 3. PAVEMENT DETAILS SHOWN ARE INDICATIVE ONLY. FINAL DESIGN DETAILS ARE TO BE DETERMINED AT THE ENGINEERING APPROVAL STAGE.

REVISION DETAILS		BY	DATE
1	ISSUED FOR CONSENT	SK	AUG 2026

SURVEYED	WOODS	WAINUI ROAD MILLDALE AUCKLAND
DESIGNED	WOODS	
DRAWN	FA	
CHECKED	SK	
APPROVED	JW	WOODS.CO.NZ



MILLDALE
STAGES 14-17
FAST-TRACK

PHASE 1: TYPICAL CROSS SECTION
LOCAL ROAD TYPE 2

STATUS	ISSUED FOR CONSENT	REV
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COUNCIL	AUCKLAND COUNCIL	
DWG NO	P25-609-01-2024-RD	

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REV	DATE	DRN	CHK	DESCRIPTION
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MILLDALE NORTH FAST-TRACK (ROAD TYPOLOGIES)
LOCAL ROAD TYPE 2

DRAWN: TLJ	---	---
DATE: 07.08.26	STATUS: RC	
SCALE: N.T.S		
DWG NO: 310206516A2B		

