



## Wiri to Quay Park

### Transport Assessment

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9 September 2020

KiwiRail Holdings Limited

601001



## Wiri to Quay Park

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**Contents**

**Executive Summary** ..... iii

**1. Introduction** ..... 4

1.1 Project Introduction ..... 4

1.2 Purpose and Scope ..... 4

**2. Site Description** ..... 5

2.1 Site Location ..... 5

2.2 Site Walkover ..... 6

2.3 Land Use ..... 7

**3. Existing Transport Environment** ..... 9

3.1 Bridge Street near Puhinui Station ..... 9

3.2 Station Road near Papatoetoe Station ..... 11

3.3 Middlemore Station ..... 12

3.4 Southern Access Areas ..... 15

**4. Future Transport Environment** ..... 16

4.1 Bridge Street near Puhinui Station ..... 16

4.2 Station Road near Papatoetoe Station ..... 16

4.3 Middlemore Station ..... 16

4.4 Southern Access Areas ..... 16

**5. Proposed Development** ..... 17

5.1 Proposed Works ..... 17

5.2 Construction Programme ..... 24

**6. Transport Effects Discussion** ..... 25

6.1 Operational Effects ..... 25

6.2 Construction Effects ..... 27

6.3 Proposed Mitigation Measures ..... 30

**7. Summary and Conclusion** ..... 31

7.1 Summary ..... 31

7.2 Recommendations ..... 31

## Executive Summary

KiwiRail Holdings Limited (KiwiRail) is currently undertaking a series of improvements across its Auckland metropolitan rail network as part of its Wiri to Quay Park (W2QP) Project. The works are intended to:

- increase the rail corridor capacity;
- provide the ability to serve nine car services at Middlemore Station;
- increase network resilience while supporting urban intensification; and
- provide additional siding capacity for the Port of Auckland.

The works will require both resource consents applications and Outline Plans, with a number of land parcels outside of the designated rail corridor required on both temporary and permanent bases. These land parcels are needed to either provide construction access and/or space for structures associated with the Third Main rail line.

The purpose of this Transport Assessment to support the Notice of Requirement (NoR). Accordingly, the scope of this report covers the new access requirements for the proposed alteration to designation and the works needed to enable this designation to be granted.

From the findings that have emerged, this assessment has concluded that the proposed amendment to the designation will have less than a minor effect on the local transport network. Accordingly, there will be no noticeable changes to traffic patterns nor the road network performance as a result of the intended works and land requirements. This conclusion is formed on the basis that the only permanent changes to the transport environment will be at Middlemore Station with the expansion of the station facilities and the inclusion of a new Kiss and Ride / drop off zone. The creation of an extended station platform requires the relocation of the northern car park access to No. 64 Rosella Road. The required works at this location will result in the loss of approximately 37 of the existing car parks that service Middlemore Hospital staff. It is further assessed that there are however opportunities to create new spaces within the existing secured carpark area to mitigate any potential parking reduction. Any such changes will be undertaken in consultation with Counties Manukau District Health Board (CMDHB). Discussions are on-going between KiwiRail and CMDHB regarding the future plans for the site.

During the proposed construction, a number of properties will require partial acquisition to enable retaining walls to be constructed as well as access to the rail corridor for construction staff and equipment. The transport related effects during construction have been fully considered whereupon it is concluded that such demands can be appropriately managed through an approved Construction Traffic Management Plan (CTMP).

To ensure these demands are appropriately controlled, it is recommended that a detailed CTMP be developed in consultation with Auckland Transport to define:

- The type, and number of construction vehicles, any potential congestion impact on the network and mitigation for these effects;
- Safe site access requirements including routes to/from the site, and temporary traffic control measures required;
- Safe pedestrian and cyclist routes across and around construction sites /accesses including school and hospital routes; and
- Minimise any potential conflicts between pedestrian and construction activities at stations and park and ride facilities.

With the application of sound engineering and traffic management controls, the proposed land and construction requirements associated with this proposal can be supported from a traffic planning perspective.

# 1. Introduction

## 1.1 Project Introduction

KiwiRail Holdings Limited (KiwiRail) is currently undertaking a series of improvements across its Auckland metropolitan rail network. The Wiri to Quay Park (W2QP) Project is one of a number of projects in the wider works programme. The purpose of this \$315 million project is to ease congestion of the busiest sections of Auckland's metro rail network, as well as provide for the future demands on the rail network by both passenger and freight services. The project will also improve network resilience and assist in Government goals to reduce greenhouse gas emissions (by reducing private and heavy vehicle use).

W2QP is broken down into four separate spatially based packages of work (running north from Wiri):

- **Package 1: Wiri Junction** - Additional tracks and crossovers to improve the functioning of Wiri Junction.
- **Package 2: Wiri to Middlemore** - A new 3.6km section of track between Middlemore Station and Wiri Junction, as well as the upgrading of Middlemore Station. These works will increase the capacity of the North Island Main Truck (NIMT) and future proof Middlemore Station for 9-car services.
- **Package 3: Westfield Junction** - A new layover track on the NIMT eastern line to provide timetable flexibility to cross the Westfield Junction, as well as works within the Westfield Yard to ensure that freight operations do not foul the mainline and impact other rail services.
- **Package 4: Quay Park** - A 1 km track extension and mainline connections into the Ports of Auckland (POA) freight facility, thereby allowing for faster entry and exit into and out of the Port.

Works are due to commence mid to late 2020 and will take approximately three years to complete<sup>1</sup>.

Each package of works is subject to separate processes under the Resource Management Act 1991 (RMA), including Outline Plans, resource consents and a single Notice of Requirement (NoR) to amend the designation. This report supports the Assessment of Environment Effects (AEE) addresses the NoR.

The amendment to the designation will enable an increase in the rail corridor capacity, provide the future ability to serve nine car services at Middlemore Station, increase the frequency and number of rail services, increase network resilience, and supports urban intensification. While the works will require both resource consents and an Outline Plan, a series of land parcels outside the existing designated rail corridor are required on both temporary and permanent bases. These land parcels are needed to either provide construction access and/or structures associated with the Third Main.

## 1.2 Purpose and Scope

The purpose of this Transport Assessment to support the NoR for the amendment to the designation. The scope of this report covers new access requirements associated with the proposed alteration to designation. Therefore, it assesses the likely effects of the proposed changes required for the Third Main. The report will cover:

- A site description of the proposed rail network and works location in Section 2;
- Section 3 will describe the current transport environment;
- Any proposed future changes known will be covered in Section 4;
- The proposed development and works to be undertaken will be described in Section 5;
- Section 6 will undertake an assessment of the effects of the proposal; and
- Section 7 will provide a summary and recommendations of the Transport Assessment.

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<sup>1</sup> It should be noted that the works addressed by the NoR are scheduled to commence in mid-2021.

## 2. Site Description

### 2.1 Site Location

In the Auckland Region, KiwiRail is responsible for the operation and maintenance of both the Metro rail network and sections of the NIMT Line outside the urban area. Within the urban area, Auckland Transport (AT) is responsible for the operation of passenger services, although these services use KiwiRail tracks and stations.

As shown in Figure 2-1, the Auckland Metro Network consists of four lines:

- The Southern Line, which runs from Pukekohe to Britomart;
- The Eastern Line, which runs from Manukau to Britomart;
- The Western Line, which runs from Swanson to Britomart; and
- The Onehunga Line, which runs from Onehunga to Britomart.

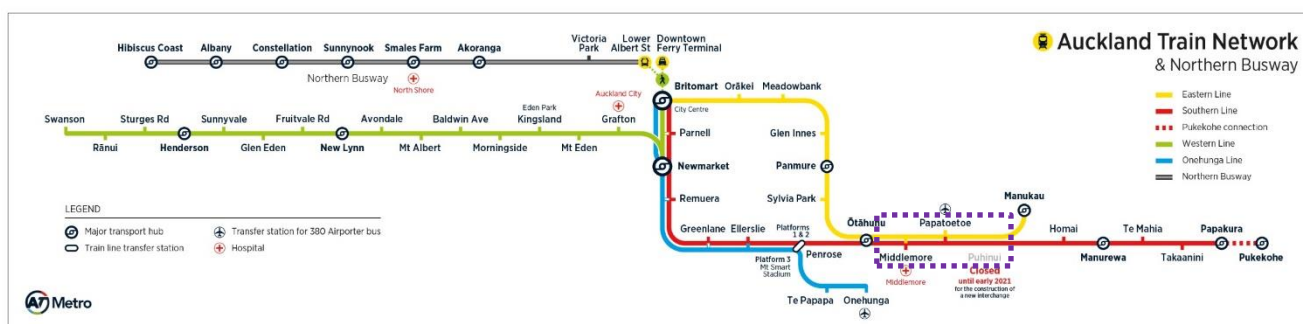


Figure 2-1: AT Metro's Auckland Rapid Transit Network

The W2QP constructs a third rail track (referred to as the "Third Main") on sections of the NIMT and junction upgrades at Wiri and Westfield yards. These works also include a new 3.6km section of additional rail line and includes upgraded station platforms at Middlemore and Papatoetoe (as shown in the purple dashed both in Figure 2-1). The proposal excludes Puhinui Station (which is being upgraded by Auckland Transport as a separate project). The majority of the proposed works are through the core urban area of South Auckland, from Middlemore in the north to Wiri in the south. The project corridor also runs past Old Papatoetoe and through the Puhinui area too.

Within the project there are four areas where an alteration to the designation is required to enable the Third Main track to be constructed. The four areas are shown in Figure 2-2 and are:

- Bridge Street and Clendon Avenue near Puhinui Station – shown in the red circle;
- Station Road near Papatoetoe Station – shown in the purple circle;
- Middlemore Station – shown in the blue circle; and
- Southern Access Areas at Cavendish Drive and Wiri – shown in the black circles.

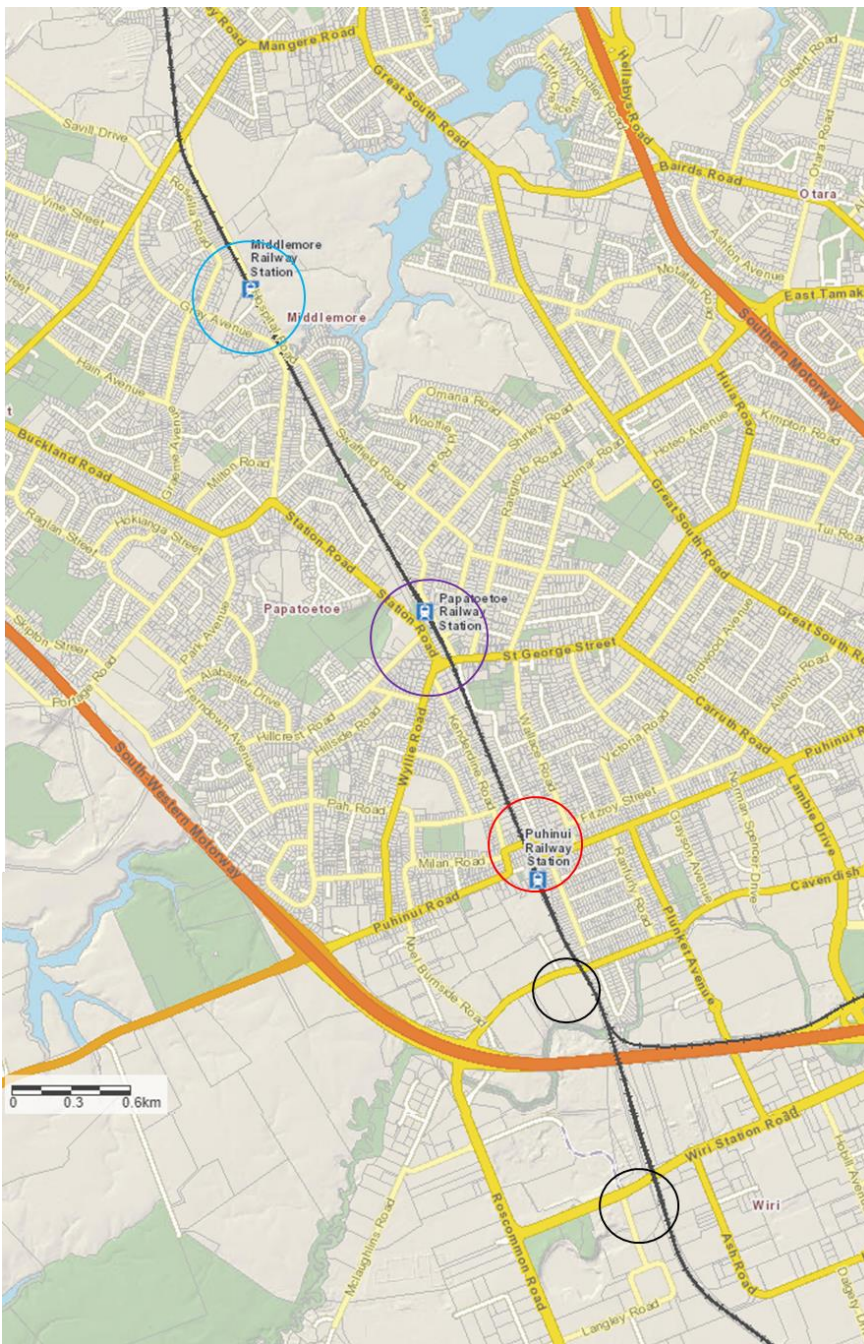


Figure 2-2: Location of Proposed Works (Base map source: Auckland Council GeoMaps)

## 2.2 Site Walkover

A site walkover was undertaken on Friday 22 May 2020. The purpose of this site visit was to understand the extent of the potential alteration to designation and the locations where access would be required both in a temporary and permanent capacity for the intended works. The site visit covered the following three main areas:

- Bridge Street near Puhinui Station, including Kenderdine Road and Puhinui Road;
- Station Road near Papatoetoe Station, including Wyllie Road and Kenderdine Road; and
- Middlemore Station, including Orakau Road, Rosella Road and Gray Avenue.

Photos from the site visit are included throughout the report to show current site conditions.

### 2.3 Land Use

The land use in the surrounding area is shown in Figure 2-3. The surrounding area is predominately residential zones, with a mix of permitted housing types (including terrace housing and apartment buildings) within the immediate area surrounding the train stations. South of Puhinui Station the zones transition to more business type zones, with the access areas being in light and heavy industrial zones.

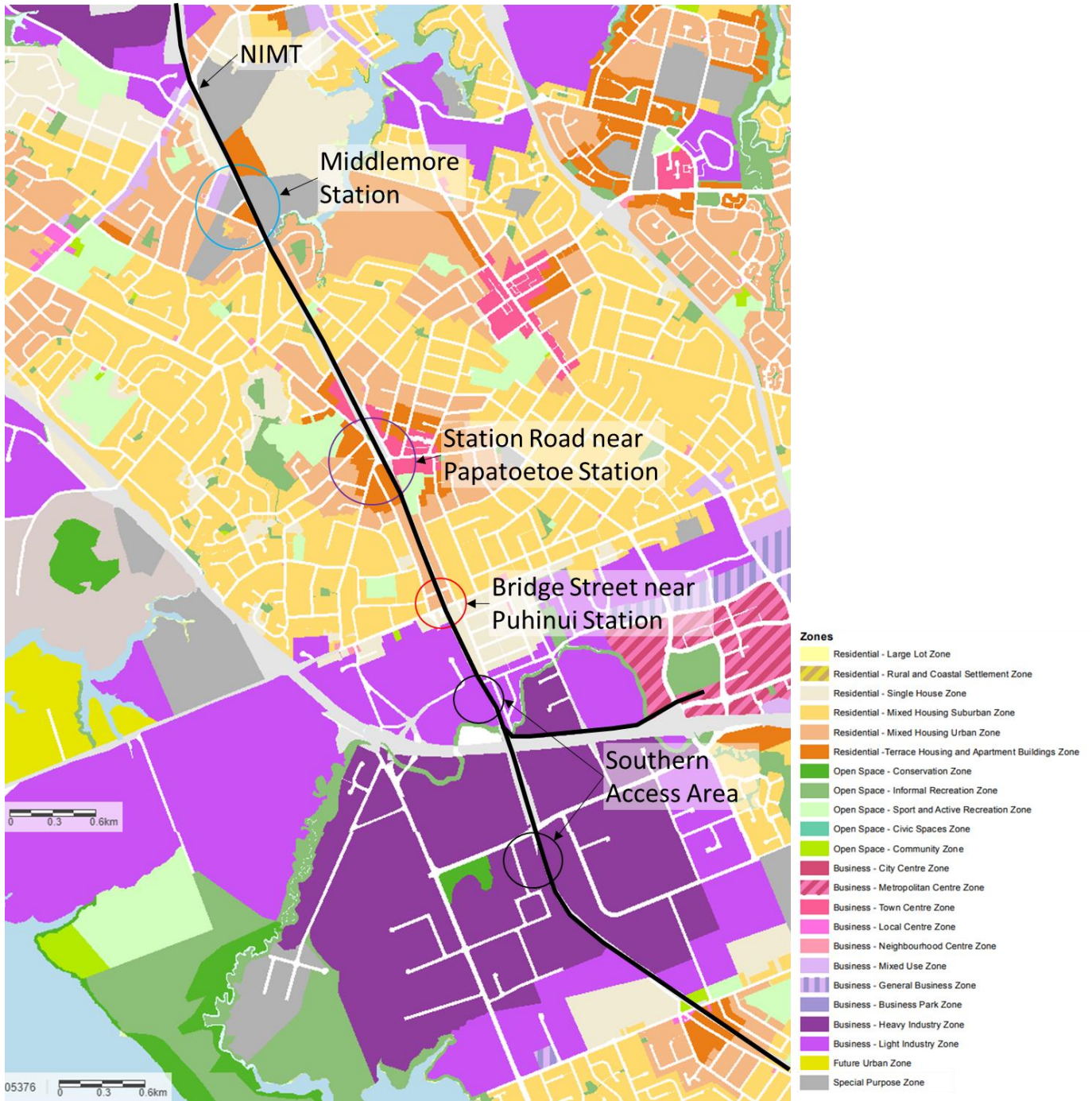


Figure 2-3: Land Use Zones along the North Island Main Truck (Base map source: Auckland Council GeoMaps)

A key land use within the area is the Middlemore Hospital and its supporting services as shown in grey within the Middlemore Station area in Figure 2-3.



There are a number of schools in the vicinity of the site areas as shown in Figure 2-4. These include the following:

- Primary Schools (shown in hashed peach areas and labelled):
  - 1) Rise Up Academy School, Rosella Road;
  - 2) Papatoetoe West School, Hillcrest Road off Station Road; and
  - 3) Papatoetoe South School, Milan Road, off Kenderdine Road.
- Intermediate and Secondary schools (shown in hashed blue areas and labelled):
  - 4) De La Salle College, Gray Avenue; and
  - 5) Kings College, adjacent to Hospital Road.

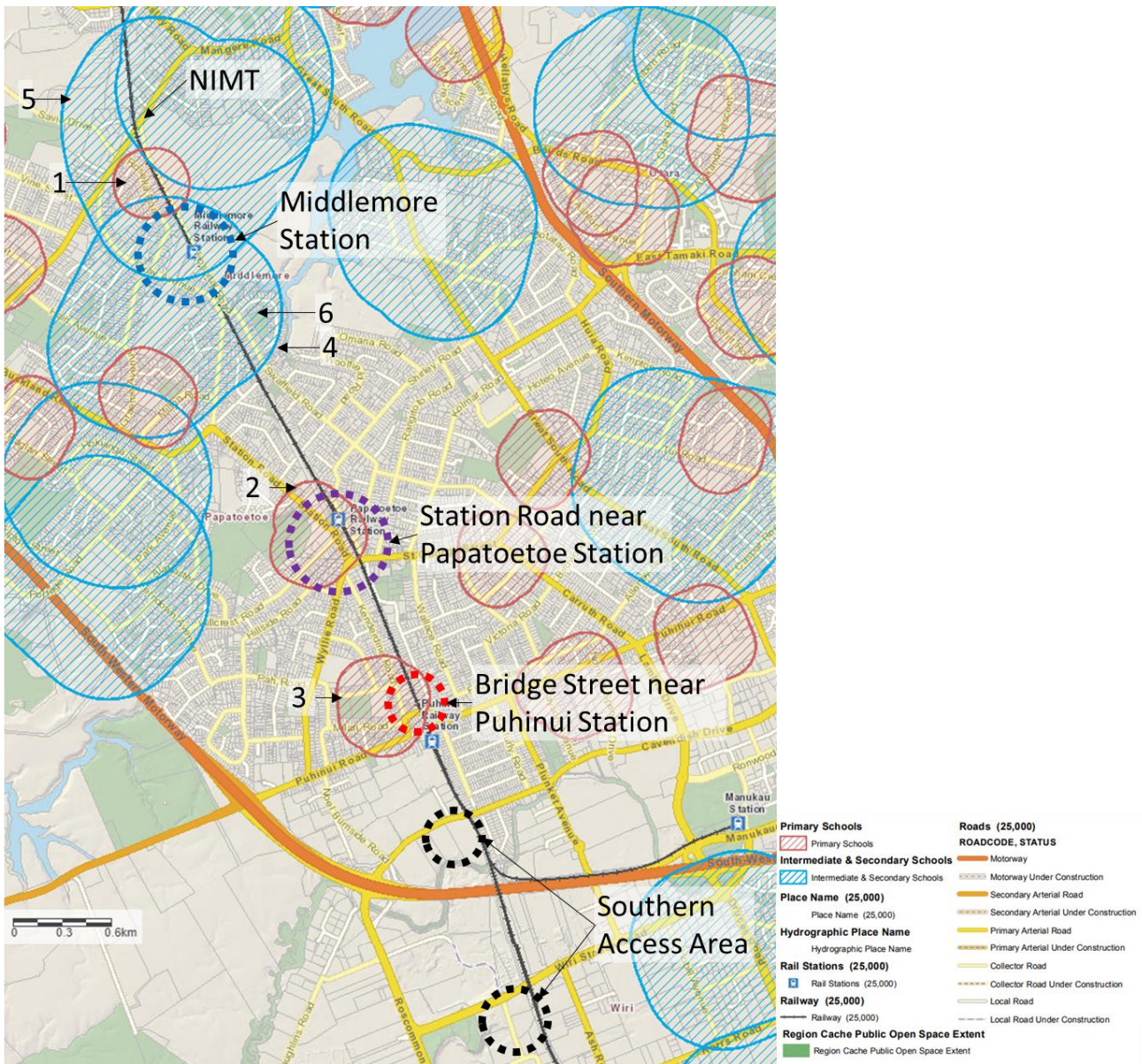


Figure 2-4: Location of schools within the vicinity of Proposed Designation (Base map source: Auckland Council GeoMaps)

### 3. Existing Transport Environment

In the project scope there are three areas that alteration to the designation is required to enable the third main and associated rail infrastructure to be constructed. The following section describes the current transport environment in the context of these areas including the road network, current walking and cycling facilities and access to public transport facilities.

#### 3.1 Bridge Street near Puhinui Station

Puhinui Road forms a main east-west road across south Auckland and provides a direct link to Auckland Airport to the west. It is classified as a Secondary Arterial road in the Chapter 4 Road Classification of the Auckland Transport Code of Practice<sup>2</sup>. The function of the road is to provide movement within the district between key nodes. It is a two-lane two-way road, with right turning bays into side roads. On-road cycle lanes are provided on both sides of the road, adjacent to the kerb on the southern side with no parking, and between parking areas and the road carriageway on the northern side. Both sides of Puhinui Road and Kenderdine Road has footpaths separated from the carriageway / parking / cycle lanes by grass verges as shown in Figure 3-1.

The NIMT intersects Puhinui Road severing connection at this point. To cross the rail corridor the road dog-legs using a short section of Kenderdine Road, Bridge Street and Cambridge Terrace before continuing east as Puhinui Road. Over the road bridge, the formed road corridor narrows and the cycle lanes and parking are removed as shown in Figure 3-2.

At Bridge Street the seven-day average annual traffic volume of approximately 17,000 vehicles per day was recorded in August 2019. The current speed limit is posted at 50km/h however, due to the tight corners as the road crosses over the rail line the speeds were generally observed to be lower.

Intersecting Bridge Street is Kenderdine Road at a Give Way control. This road provides a north-south road parallel to the rail corridor on the western side. It serves a residential area with properties rear boundary adjacent to the rail corridor. Kenderdine Road provides one entrance to Papatoetoe South School approximately 130m from the intersection with Bridge Street. It is a two lane, two way long straight road, with parking permitted on both sides as shown in Figure 3-3. The current speed limit is posted at 50km/h with a recorded average daily traffic count of 3,750 in 2016<sup>3</sup>. Footpaths are provided on both sides of the road separated from the carriageway with a grass berm. A raised zebra crossing is located near 79 Kenderdine Road at the entrance to Papatoetoe South School. There are no cycle facilities provided along Kenderdine Road.

Clendon Avenue intersects Cambridge Terrace and Puhinui Road on the east side of the road corridor, adjacent to the Puhinui Station at a Give Way control. This is a two-lane two-way road serving a residential area with footpaths on both sides separated from the carriageway by grass berms. Parking is also permitted on both sides of the road. Along the length of the road there are speed bumps to slow traffic down. There is no vehicle access to Cavendish Drive at the southern end, but pedestrian access is provided.

<sup>2</sup> Auckland Transport draft Code of Practice 2013

<sup>3</sup> Auckland Transport Open GIS Data, <https://data-atgis.opendata.arcgis.com/datasets/average-daily-traffic-counts>



Figure 3-1: Kenderdine Road looking south to Puhinui Road and Puhinui Road/Kenderdine Road intersection looking west along Puhinui Road



Figure 3-2: Bridge Street looking west over the rail line and looking east from towards Kenderdine Road



Figure 3-3: Kenderdine Road, looking north from zebra crossing and looking south towards Bridge Street

With the temporary closure of the Puhinui Station no passenger trains currently stop at Puhinui Station. As an alternative, a new free bus service (Route 349 Puhinui loop bus service) has been created during the closure to collect people wishing to use the train and connect them to the Papatoetoe Station in a clockwise loop. This bus currently stops outside No. 232 Puhinui Road, to the west of the station and outside No. 174 Puhinui Road, to the east of the station. It runs at 10 minutes frequency during peak times, every 20 minutes during off peak and every 30 minutes in the evenings during the week.

The 380 Airporter service currently runs between the Airport and Papatoetoe Station with the temporary closure of the Puhinui Station during construction. This will revert to the Puhinui Station along Puhinui Road as an express service between the airport, station with an additional connection to the Manukau Town Centre.

### 3.2 Station Road near Papatoetoe Station

Similar to Puhinui Road, Station Road is a Secondary Arterial Road<sup>4</sup>. Around Papatoetoe Station, Station Road is a two lane, two-way road, with cycle lanes in both directions and a painted flush median. Bus stops are located at the entrance to the Park and Ride and station entrance. A signalised pedestrian crossing facilitates movement of people across the busy road. In July 2019, traffic counts recorded a seven-day average traffic volume of approximately 21,000 vehicles per day. The current speed limit is posted at 50km/h however, due to Papatoetoe West School adjacent to the station on the western side of the road, a School Speed Zone is enforced during school drop off and pick up times reducing the speed limit to 40km/h, shown in Figure 3-5.

Footpaths are provided for on both sides of the road. On the eastern side a grass berm separates people from vehicles. On the western side, a wider footpath is provided. Adjacent to the school the wide footpath turns into a shared path to enable cyclists to travel safely around the bus stops and a drop off / pick up short-term parking area. An aerial view of the site relative to the described features is provided in Figure 3-4 below.



Figure 3-4: Station Road and surrounds (Source: Auckland Council GeoMaps)

<sup>4</sup> Chapter 4 Road Classification, Auckland Transport draft Code of Practice 2013

South of the station is the signalised intersection of Station Road and Wyllie Road. This is a signalised controlled T intersection with a left turn slip lane for westbound traffic from Station Road to Wyllie Road (see Figure 3-6). A church is located on this corner. There is a pram crossing/drop kerb<sup>5</sup> with tactile pavers at this point. Signalised pedestrian crossings are located across Wyllie Road and across the northern approach of Station Road. On-road cycle lanes are provided throughout the intersection, along with advanced stop boxes at the limit lines. Each approach has two lanes generally separating vehicle movements.

The northern end of Kenderdine Road intersects Wyllie Road approximately 80m south of Station Road. Wyllie Road is marked as a two-lane, two-way road, but queuing occurs as a result of the right turn at the signals with Station Road in which vehicles were observed forming two lanes to allow left turning traffic to create a shorter queue.

Station Road continues over the rail line and intersection with St George Street and Shirley Road at a signalised intersection. This intersection has cycle facilities through the intersection and pedestrian crossings of three of the four approaches.



Figure 3-5: Station Road layout looking towards signalised pedestrian crossing



Figure 3-6: Station Road / Wyllie Road intersection with left turn slip lane into Wyllie Road

Gordon Road is a short cul-de-sac in a residential area off Portage Road east of the Station Road/Portage Road/Gray Avenue roundabout. There is a footpath on southern side of the road and a grass berm on the northern side. The speed limit on this two-lane, two-way road is 50km/h with no restrictions on parking.

### 3.3 Middlemore Station

The Middlemore Station area includes Orakau Road, Rosella Road and Gray Avenue, as well as the Middlemore staff car park and the support services to the west of the station as shown in Figure 3-7.

Orakau Road is a cul-de-sac providing access to Middlemore Station and pedestrian access to Middlemore Hospital and to the staff car parking areas and a multi storey secure car parking building. Vehicle access to the car parking areas currently is from a private access road at the end of Orakau Road. The speed limit along the road is 50km/hr however, as it turns and runs parallel to the rail line within the hospital site (adjacent to the proposed station), the speed limit is decreased to 20km/h. This reduction is intended to control the pedestrian and vehicle interaction with flows moving between the station and car park accesses respectively. This restriction is shown in Figure 3-8.

Orakau Road has 90 minute time restricted angled parking on the western side of the road and no parking on its eastern side. There are no cycle facilities provided within this area.

<sup>5</sup> A pram crossing or drop kerb is where a break in the kerb line is made to create a ramp between the footpath and road. This allows people to easily cross the road, particularly if they have mobility issues or using a wheeled object (e.g. pram, scooter, wheelchair, mobility aid).

Footpaths along Orakau Road are provided on both sides of the road along with pram crossings on desire lines to facilitated movement of people between the car park, street and station and over the pedestrian overbridge over the rail line. The last traffic count undertaken were in 2002<sup>6</sup> prior to the extension of the car parking facilities.

There are three car parks access off the end of Orakau Road, the multi storey and at-grade car park for staff and a smaller car park to the north that serve staff and patients of the Renal Self Care, Whitiara Diabetes and Te Whare Rapu Ora units. All staff are regularly users of these car parks and require a pass to access the car park. There are a small number of day-patient car park spaces available and similarly these are patients who frequently attend these hospital services.



Figure 3-7: Middlemore Station and surrounds

<sup>6</sup> Approximately 1,850 vehicles per day in 2002 according to the Auckland Transport Open GIS Data, <https://data-atgis.opendata.arcgis.com/datasets/average-daily-traffic-counts>



Figure 3-8a and b: Orakau Road looking south from the cul-de-sac and Orakau Road from Middlemore Station looking west to car park entrances and drop off area

Orakau Road is accessed through a Give Way priority controlled, T intersection with Gray Avenue users having right of way. Gray Avenue provides a north-south connection between Massey Road and Station/Portage Roads. Similar to other local roads, it is a two-lane, two-way road, with a 50km/hr speed limit and parking permitted either side. The average traffic volumes recorded in 2018 were approximately 10,250 vehicles per day. Bus stops are located outside De La Salle College, between Orakau Road and Rosella Road. As shown in Figure 3-9, there is a raised zebra crossing to provide safe access across the road for school students.

Roselle Road is a local road between Gray Avenue and Massey Road with similar characteristics to Orakau Road. It provides access to residential properties and had traffic volumes of 1,950 vehicles per day recorded in 2006. This road is also controlled by a Give Way priority controlled, T intersection with Gray Avenue. Footpaths are provided on both sides of the road, separated from parked vehicles and residential frontages by grass berms. Located on the northern side are a small group of local shops. Past this, the road narrows as it has a few corners. Speed bumps are located over a 700m stretch and a 35km/h advisory speed warning sign as shown in Figure 3-10.



Figure 3-9: Looking north along Gray Avenue from Orakau Road intersection and looking north from Gray Avenue towards Rosella Road



Figure 3-10: Rosella Road, looking east from Gray Avenue and looking east from further east along the street

### 3.4 Southern Access Areas

Access to the rail corridor is required from two locations:

- Cavendish Drive
- Langley Road

#### 3.4.1 Cavendish Drive

Cavendish Drive is classified as a Primary Arterial road in the Chapter 4 Road Classification of the Auckland Transport Code of Practice<sup>7</sup>. The function of the road is to provide for through traffic movements. It is a four lane two-way road, with right turning bays into side roads and a flush median separating opposing directions. On-road cycle lanes are provided on both sides of the road, adjacent to the kerb. No parking is permitted and footpaths are present on both sides. All major intersections are signalised.

On Cavendish Drive, to the west of the access area, a seven-day average annual traffic volume of approximately 15,800<sup>8</sup> vehicles per day was recorded in April 2013. The current speed limit is posted at 60km/h.

Intersecting Cavendish Drive to the north is Nesdale Avenue, a short cul-de-sac serving an industrial area. The road has one lane in each direction with a posted speed limit of 50km/h. Each side of the road has a footpath separated from the road by a grass berm. At the intersection to the south is a sealed private road serving two businesses.

#### 3.4.2 Langley Road

Langley Road is located off Wiri Station Road. It is a local road providing access to surrounding land use. The road caters for two-way traffic with road markings at intersections. There are no traffic volumes recorded for Langley Road which serves a small industrial area. Narrow footpaths are located on both sides of the road with grass berms separating them from the carriageway. The 50km/h speed limit is posted at the intersection with Wiri Station Road.

Wiri Station Road is an arterial road that runs east-west through this area. It was the old SH20 before the SH20-1 Manukau Extension motorway was opened in January 2011. As such, it has two lanes in each direction separated by a raised median. The intersection at Langley Road has turning lanes provided for all movements. A footpath is provided on the northern side of the road separated by a grass berm except where the road crossing over the rail corridor. Cycle lanes and advanced stop boxes are provided for on the approach to and at the intersection, though not along the rest of the road. The speed limit is 60km/h.

<sup>7</sup> Auckland Transport draft Code of Practice 2013

<sup>8</sup> Auckland Transport Open GIS Data, <https://data-atgis.opendata.arcgis.com/datasets/average-daily-traffic-counts>



## **4. Future Transport Environment**

This section describes the future transport environment in the context of the three areas. This includes and changes and upgrades to the road network, current walking and cycling facilities and access to public transport.

### **4.1 Bridge Street near Puhinui Station**

Puhinui Station is current undergoing an upgrade to become a major bus and train interchange<sup>9</sup>. Buses services will connect with rail at this location and will operate with 10-minute frequent services providing a direct connection to Auckland Airport and to Manukau Town Centre. The station closed on 28 September 2019 with the station expected to re-open in early 2021. The new Puhinui Station Interchange is expected to be fully completed by the end of March 2021. This upgrade will enable frequent bus and rail connections to make easy journeys to the airport, city centre and other areas. It will also improve safety for passengers with new lighting, HOP ticket gateline and CCTV systems installed. In addition, new shelters will be installed for passengers moving between bus and train services, as well as improved access and facilities for cyclists and pedestrians.

### **4.2 Station Road near Papatoetoe Station**

No known changes are planned for this area.

### **4.3 Middlemore Station**

No known changes are planned for the western side of the rail corridor.

### **4.4 Southern Access Areas**

No known changes are planned for these areas.

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<sup>9</sup> <https://at.govt.nz/projects-roadworks/airport-to-botany-rapid-transit/puhinui-station-interchange/>, Auckland Transport

## 5. Proposed Development

Section 5.1 describes the Third Main project (Package 1 as noted previously) and confirms the physical changes of the designation and the changes required to the transport network associated with the project.

### 5.1 Proposed Works

The construction of a third track for the NIMT including:

- Installation of a new 3.6km track between Middlemore Station and Wiri Junction, including a series of connections between tracks and a new overhead line electrical structures and signals;
- An upgrade Middlemore Station, including an extension of the existing pedestrian bridge and a six-car platform and an emergency egress footpath at the northern end of the station;
- Reorganisation of existing car parking at Middlemore Hospital to address construction of new platform and new access required;
- Installation of above ground rail infrastructure;
- The construction of retaining walls to stabilise railway cuttings; and
- Associated utility relocations and stormwater infrastructure.

A further summary of the works is provided in the AEE.

#### 5.1.1 Bridge Street near Puhinui Station

Works at Bridge Street include the construction of retaining walls along the western side of the rail corridor and to provide construction access. Generally, the rear part of the affected property is required only during the construction phase. The exception to this is No.10 Bridge Street, where due to the proximity of the dwelling to the retaining works, a permanent acquisition of a strip adjacent to the rail corridor is required. Construction of the retaining wall will occur from within the rail corridor.

The road reserve adjacent to No. 5 Clendon Avenue is proposed to have construction access to the Puhinui Station from Clendon Avenue along the southern boundary of this land parcel.

The Land Requirement Plans are included in an appendix of the NoR report. Figure 5-1 shows indicative locations of the properties affected<sup>10</sup> with a full description of how the properties will be used included in the NoR.

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<sup>10</sup> The properties are identified, not the extent of the potential land requirement

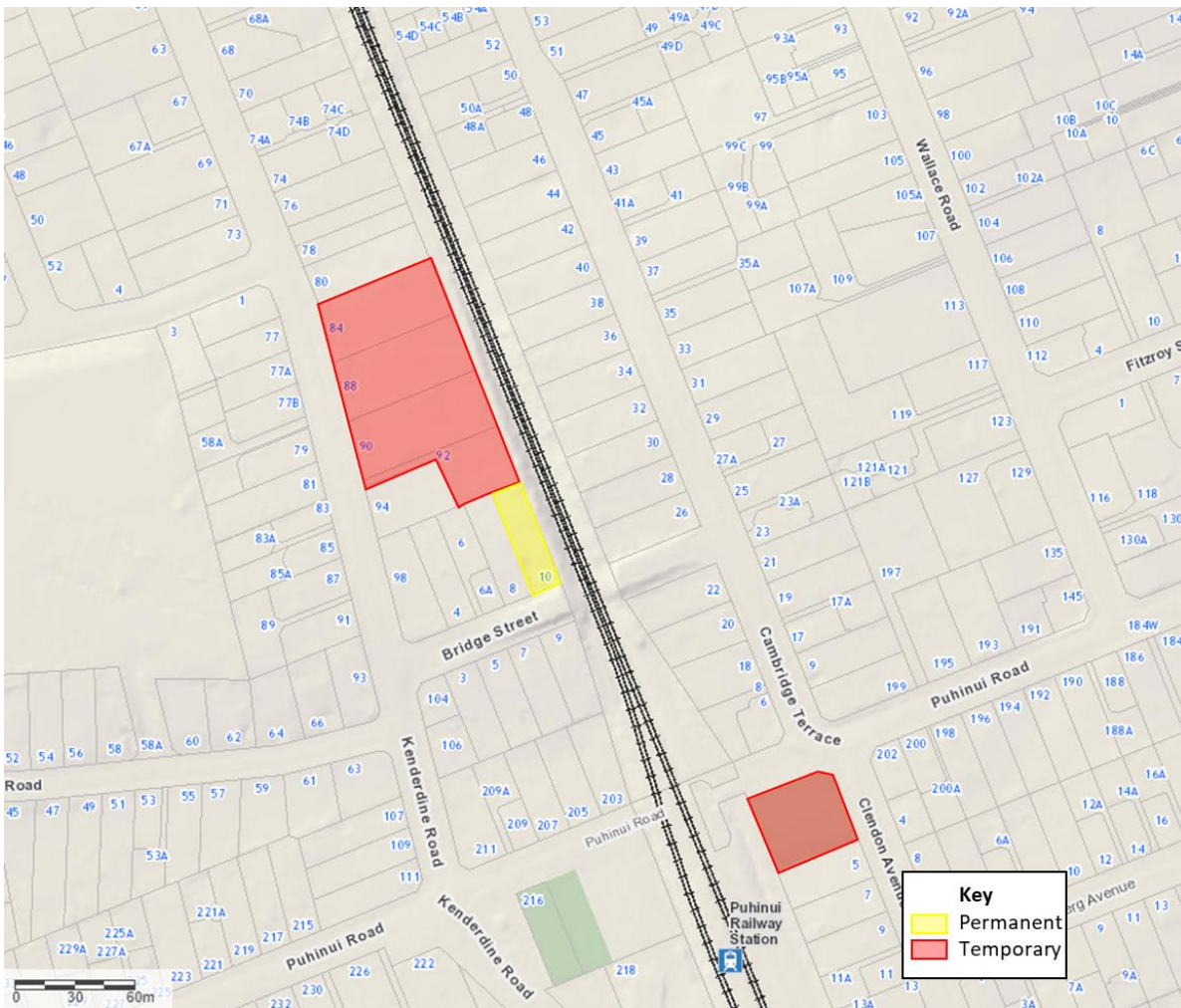


Figure 5-1: Proposed land requirement locations

### 5.1.2 Station Road near Papatotetoe Station

The alteration to designation required for the Third Main through this section is all located on the western side of the existing corridor. Many of these affected properties are required to enable the construction of a retaining wall (between the property and rail corridor) and are therefore expected to require temporary acquisition and/or access rights as a result of this project.

There are two other properties identified as permanent acquisition (No.'s 5 and 9 Station Road) due to the houses being located at the back of the section in close proximity to the proposed retaining structure. These are the only permanent works in this section. Access to these properties may be required to demolish the houses to enable construction.

Construction access is required to the rail corridor from No.'s 12 and 14 Wyllie Road and No. 18 Gordon Road (Gordon Park). Access is required through No.12 Wyllie Road in order to gain access to No.14 Wyllie Road and the rail corridor.

Gordon Park is currently an informal reserve and will be returned to public use once construction is completed. It is also proposed to use the reserve as a laydown area during construction.

Figure 5-2 shows the indicative locations of the properties affected. A full description of how the properties will be used included in the NoR along with the Land Requirement Plans as an appendix.

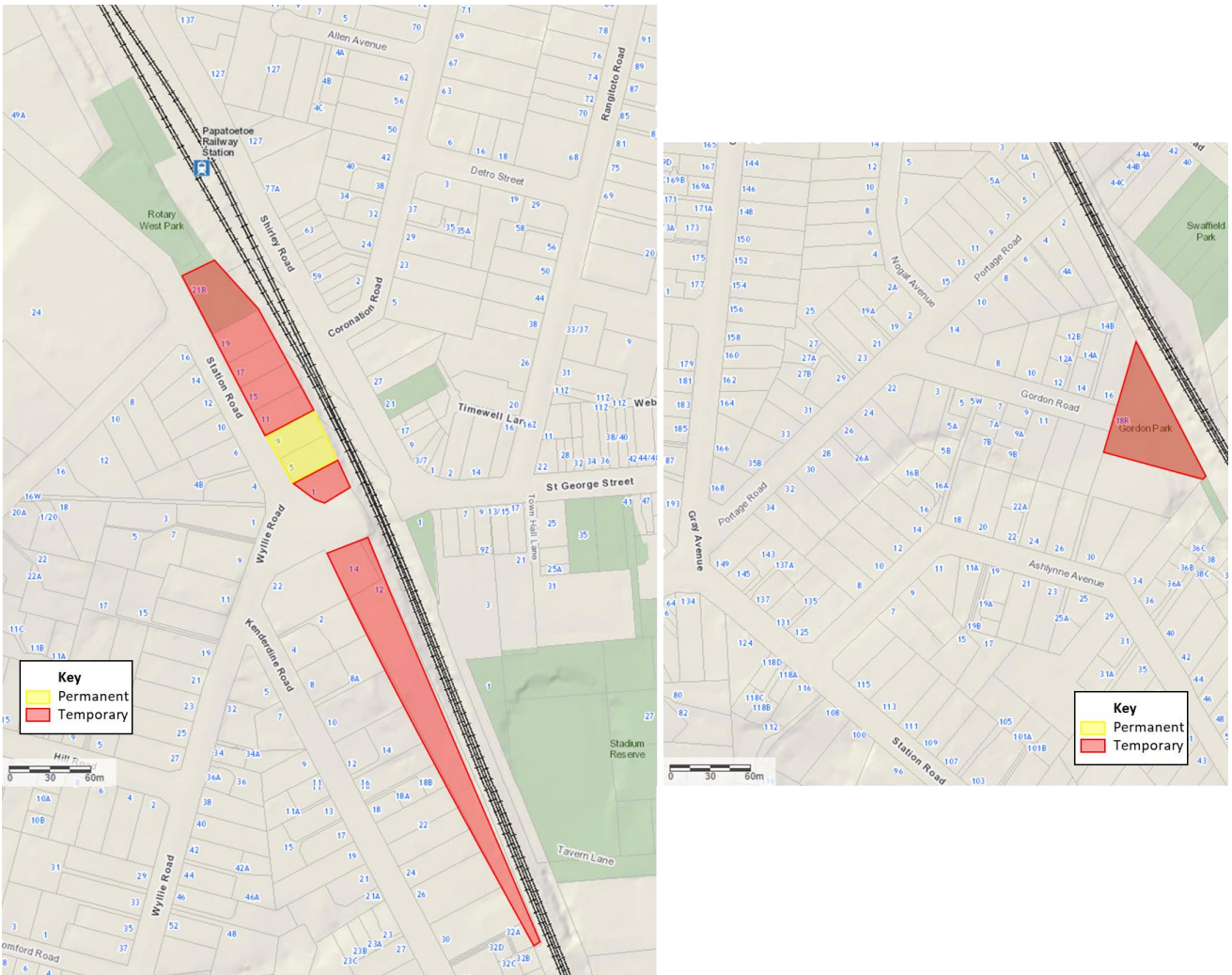


Figure 5-2: Proposed land requirement locations

### 5.1.3 Middlemore Station

The works at Middlemore Station are mainly focused on an upgraded station with a new platform to cater for the Third Main and extension to the existing platforms for future provision of nine-car services. The additional platform requires land from the Middlemore Hospital site and requires alteration to the three existing car parks. The proposed works are shown in Figure 5-3. As part of these works, a “kiss-and-ride” facility is created for people to drop off train passengers. This new facility may be used for hospital visitors to be dropped off here, but is unlikely to be used for hospital patients, given to distance to the main hospital site. The current pedestrian overbridge is intended to be extended over the new platform and the drop off zone. This will provide hospital staff direct access between the car parking building and the rail overbridge thereby eliminating conflicts with vehicles dropping people off at the train station.

For the two larger existing car parks, the existing vehicle access is also proposed to change. Instead of vehicles travelling from Gray Avenue to the terminus of Orakau Road and entering via secure entrances opposite the station (as shown in Figure 5-4), a new vehicle access and egress is proposed approximately 55m north of the intersection with Gray Avenue on Orakau Road. Both the at-grade and multi-storey car park will use this access and the approximate location of the vehicle crossover is shown in Figure 5-5 (along with minor circulation changes within the existing car park).

Approximately eight angled on-street car parking spaces will be removed to form the new two-way entrance. Within the car park, approximately 13 spaces will be removed to allow a new secure entry for staff to be created.

The relocation of the entrance is not included as part of the NoR and these works will be addressed through future resource consent applications and further engagement with Auckland Transport.

As part of the reconfiguration, the smaller car park to the northwest of the station, serving a range of medical related activities, will no longer be accessible from Orakau Road. The new and extended platforms no longer provide space to access the car park (see Figure 5-6). As such, an alternative access has been proposed from Rosella Road. The new accessway will be provided for construction and maintenance activities via No. 64 Rosella Road (as shown in Figure 5-7). The extended platform requires the removal of approximately 37 cars parks along the eastern boundary of the site<sup>11</sup>. The previous access will be re-configured<sup>12</sup>, and the remaining area reconfigured to maintain circulation through the car park. The development of the internal layout of the car park is subject to on-going discussion and consultation, for rationalising how the site functions, between KiwiRail and CMDHB regarding their further plans for the site. The car park is currently under design and will be detailed as part of the related Outline Plan. The spaces are expected identified as staff or patient parking in line with current practices along with the current enforcement practices in place to prevent rail passengers using the private spaces.

As noted above, No. 64 Rosella Road is proposed to be used as a laydown area during construction and maintained as a maintenance access and area following construction for access to the station and rail corridor.

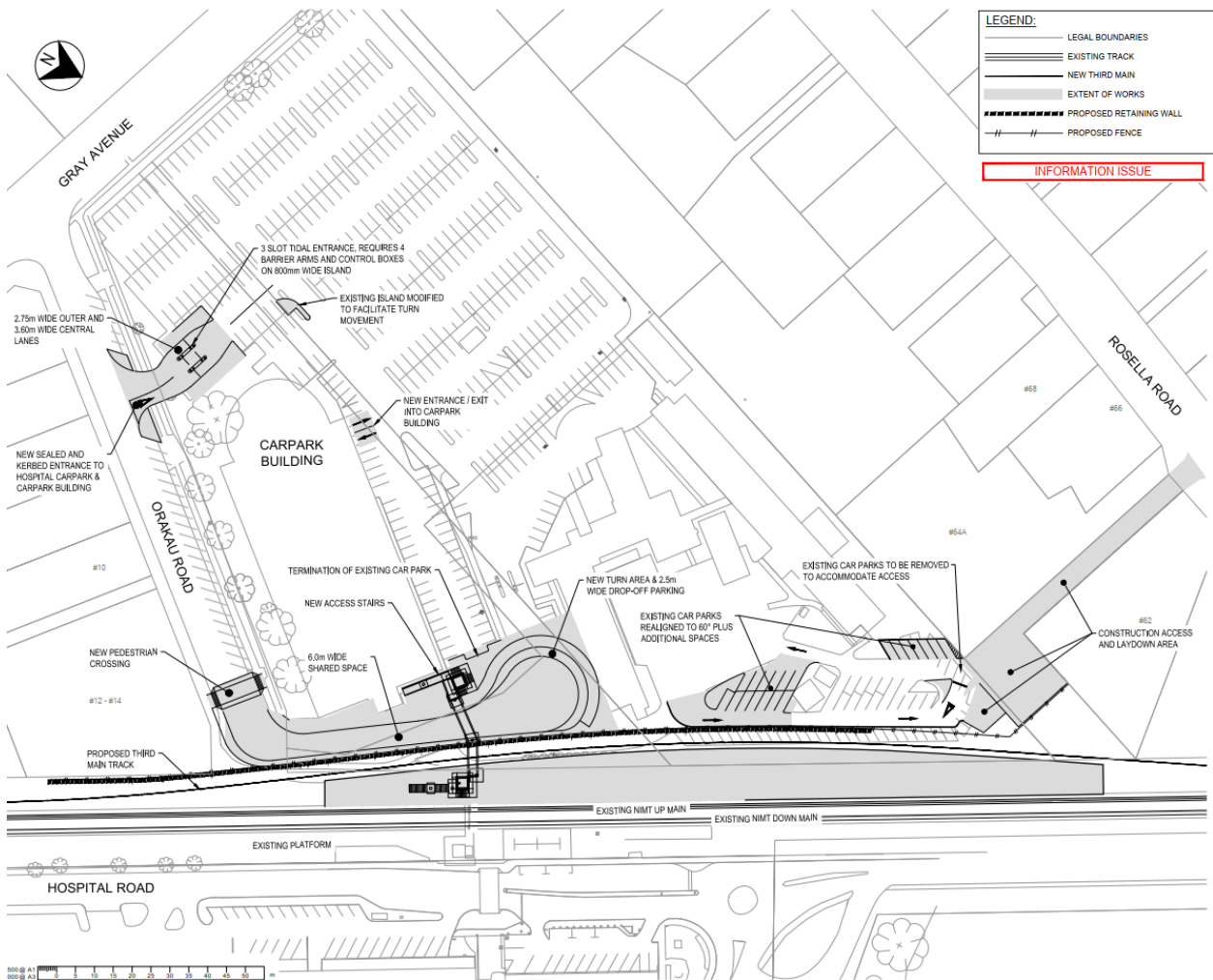


Figure 5-3: Proposed Works at Middlemore Station<sup>13</sup>

<sup>11</sup> As detailed in technical note Appendix 9 of the Design Report W2QP Business Case, version 2.0, 17/09/2019, KiwiRail

<sup>12</sup> As there will no longer be access from the hospital site from Orakau Road, the entry to the car park will be re-configured to allow vehicles to move around the car park effectively and the car parking spaces adjusted accordingly.

<sup>13</sup> KiwiRail\19.14 - Wiri to Quay Park (W2QP)\Working Folder\01\_Design\02 Drawings\00 - Concept\03 Middlemore Station\IA233800-SK300.dwg



Figure 5-4: Current at grade and multi storey main car park entrances to be relocated



Figure 5-5: Proposed location of new main car park entrance



Figure 5-6: Access to and current car park serving staff and outpatients



Figure 5-7: Proposed new access to the car park from 64A Rosella Road

#### 5.1.4 Southern Access Areas

At Cavendish Drive, alteration to the designation is required to provide access to the rail corridor. Access is proposed to be taken from the signalised intersection of Cavendish Drive and Nesdale Avenue, through a private road. This intersection currently allows all turning movements controlled through the signals to serve the two properties along the private road. Access along the private road and either side of the existing buildings at No. 212 Cavendish Road is sought to enable access to the rail corridor, as shown in Figure 5-8.

An alteration to the designation at Langley Road is proposed to provide access to the rail corridor. This is proposed along the southern boundary of No. 12 Langley Road to enable construction traffic to access the rail corridor, and maintenance vehicles to undertaken ongoing maintenance. Access to the rail corridor is already undertaken from this location though a fenced and gated access point on the south-eastern corner of the site as shown in Figure 5-9 .

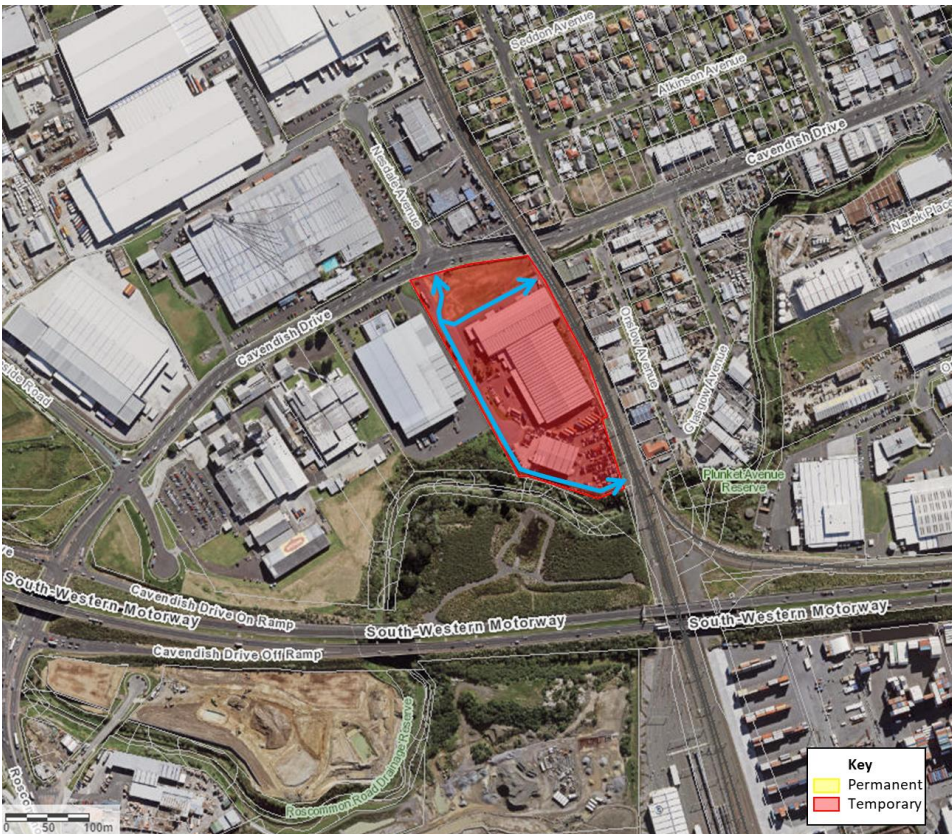


Figure 5-8: Proposed Access to the rail corridor off Cavendish Drive



Figure 5-9: Proposed Access to the rail corridor off Langley Road



## 5.2 Construction Programme

The design and construction of the Third Main works will occur over approximately 46 months. Indicative timeframes for each stage have been identified in the Design Report<sup>14</sup> and are detailed as follows:

- Design, Consenting and Procurement ~15 months;
- Signal Design Process ~14 months;
- Land Procurement and Designation ~ 2 years;
- Civil retaining walls ~ 15 months working across all three areas simultaneously – Bridge Street, Station Road and Middlemore;
- Pedestrian bridge and access provision at Middlemore Station ~1 year; and
- Civil construction earthworks and drainage ~ 1 year.

The majority of these activities are undertaken away from live operations but works in the corridor can only occur during closures.

### 5.2.1 Construction Access

There are a number of accesses proposed as potential construction site accesses. These include:

- Puhinui Road Terminus adjacent to Puhinui Station;
- Reserve Land, adjacent to No. 5 Clendon Avenue
- No.'s 5 and 9 Station Road;
- No.'s 12 and 14 Wyllie Road;
- Park and Ride at Papatoetoe Station;
- No. 18 Gordon Road;
- Opposite No. 115A Gray Avenue;
- Orakau Road;
- No. 64 Rosella Road;
- No. 100 Hospital Road;
- No. 212 Cavendish Drive; and
- No. 12 Langely Road.

There is currently access to the rail corridor off Puhinui Road and adjacent to No. 5 Clendon Avenue, which are being used for the upgrade of the Puhinui Station. It is proposed to continue to use these existing accesses to the rail corridor for the Third Main works.

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<sup>14</sup> Design Report W2QP Business Case, version 2.0, 17/09/2019, KiwiRail

## 6. Transport Effects Discussion

This section describes the operational and construction effects of the proposed alteration to designation. It defines the works required to enable to designation to be used to construct the Third Main in the future.

It should be noted that following transport effects assessment only addresses those works outside the current designation (i.e. the works subject to the alteration to designation assessed in the NoR). Any works inside the existing designation will be addressed by future Outline Plans and resource consents, and the transport effects of those works will be subject to assessment under those future applications.

### 6.1 Operational Effects

Overall the alteration to designation for the Third Main will allow construction in the future of an additional rail line and platforms for passenger trains. The Third Main will support more frequent passenger services with a greater number of carriages. They will also allow express services and freight to operate at greater capacity.

#### 6.1.1 Bridge Street near Puhinui Station

Following the designation of the additional land required for the alteration to designation and the construction of the Third Main, it is expected that there will be no effects on the network as there is no substantial land use change associated with this proposed alteration to designation. The land temporary required to enable construction works will be returned to its current use or developed on completion of works in accordance with its underlying zoning. The land permanently acquired through this alteration to designation process will form part of the Third Main construction and land excess to permanent requirement will be disposed of. For this area permanent land acquisition is proposed for a strip of land adjacent to the rail corridor at No.10 Bridge Street.

It is not anticipated that this property or the reserve land adjacent to No. 5 Clendon Avenue will be retained as permanent corridor access points.

As such, the transport effects of the proposed alteration to designation resulting from the Third Main are expected to be less than minor for this location.

#### 6.1.2 Station Road near Papatoetoe Station

Similar to the section above, the two permanently required properties will have no effect on the network as there is no substantial land use change associated with this proposed alteration to designation. It is anticipated that following the construction of the Third Main, the properties at No.'s 5 and 9 Station Road may be returned to their current use as a residential property.

As such, the transport effects of the proposed alteration to designation and long-term activities resulting from the Third Main are expected to be less than minor for this location.

#### 6.1.3 Middlemore Station

The proposed alteration to designation at Middlemore Station results in the greatest change to the local road network. The permanent works required as a result of the change in alteration to designation include:

- Change to the access for the at grade staff car park to the north, with access moving from Orakau Road to 64 Rosella Road and a reduction of car park spaces;
- Introduction of a formal "kiss and ride" / drop of point; and
- Expansion of the pedestrian overbridge over the Third Main and new platform to the multi storey car park building.

The relocation of the car park entrances from the end of Orakau Road is a positive effect of the project. By removing the movement of vehicles from this location this reduces the potential conflict between vehicles and

rail passengers. The introduction of the pedestrian overbridge also further assists with this. The installation of the kiss and ride is not anticipated to generate any additional traffic than currently undertakes this movement, as while not formalised there is sufficient room for this to be currently undertaken. It is further assessed that this project will not impact on the existing land uses within the immediate area. The upgrade to the station allows for both an increase in train frequency and capacity. Future passenger growth is anticipated from the local walking catchment and including potential future residential growth in the area to the east of the train line.

The relocation of the car park entry and extension of the pedestrian bridge to the car park building is expected to have minor positive effects on pedestrian safety. The continuous footpath on the western side of Orakau Road provides a direct connection to the pedestrian bridge eliminating conflict with vehicles. The new crossing point at the northern end of Orakau Road provides a well identified formal crossing location for people on the eastern side of Orakau Road to cross safely. The relocation of the main car park entrance will be considered as part of future resource consent applications.

The relocation of the smaller northern car park access from Orakau Road to Rosella Road will result a small change in traffic pattern. Currently vehicles travel along Orakau Road to access the hospital car park. The Middlemore Station upgrades requires the closure of the access and a new construction and maintenance accessway to be created at No. 64 Rosella Road. This new accessway is approximately 5.65m<sup>15</sup> wide allowing for two vehicles to pass each other or a vehicle to pass a pedestrian/cyclist. The proposed layout removes approximately 37 car parks, but the loss of these car parks will be partially addressed through the reorganisation of other on-site parking areas and further engagement between KiwiRail and CMDHB regarding car parking and access arrangements.

The effects of this access relocation to Rosella Road will be less than minor. This is due to the low volumes of traffic expected to utilise this access, the visibility at the new access location and the presence of traffic calming infrastructure already present in the road corridor near the new accessway. There are adequate sight lines at the Gray Avenue / Rosella Road intersection for safe movements to occur (see Figure 6-1 and Figure 6-2), while any vehicles travelling to/from Massey Road intersection must traffic through a signalised controlled intersection.

There is currently no all-day parking within the vicinity of the train station. As part of this alteration to designation no changes are proposed to all day parking for train passengers.

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<sup>15</sup>As detailed in technical note Appendix 9 of the Design Report W2QP Business Case, version 2.0, 17/09/2019, KiwiRail



Figure 6-1: View towards the north from Orakau Road looking towards Rosella Road on the right



Figure 6-2: View from Rosella Road looking north and south along Orakau Road

#### 6.1.4 Southern Access Areas

It is proposed to continue to use these access points to maintain the corridor on an on-going basis. The expected maintenance activities generated at these locations are not expected to generate a large number of vehicles resulting in minimal increase in traffic on the surrounding road network. Both the Cavendish Drive and Langley Road accesses are within industrial areas with controlled access through traffic signals off arterial roads. These roads are designed to accommodate heavy vehicles and should result in no noticeable effect on the network operations.

## 6.2 Construction Effects

A large proportion of the construction of the Third Main can be done away from the live tracks. The regular scheduled maintenance also requires closures which can be utilised during construction. As the design of the supporting works, specifically around Middlemore Station are still under design the construction planning and staging is being developed. The staging of the construction activities will form the basis for understanding the potential impact of these activities on the transport network. Through the construction traffic management plan these will be identified, mitigated and monitored to minimise potential impacts.

### 6.2.1 Bridge Street near Puhinui Station

Construction access to the rail corridor around Bridge Street is anticipated to be undertaken from two main locations. The first being beside Puhinui Station. This road was the old level crossing at the station until the Kenderdine Road / Bridge Street / Cambridge Terrace dog leg was constructed. This section of Puhinui Road has good visibility onto adjacent roads and direct access to the motorway for construction traffic leaving and arriving at site.

The second access to the rail corridor will be off Puhinui Road and adjacent to No. 5 Clendon Avenue, which is currently being used for access for the upgrade of the Puhinui Station. It is proposed to continue to use this same access for the Third Main corridor works.

With Puhinui Road forming the main east-west link to the airport, construction traffic should be minimised at network peak times. With staging of the project, the number of construction vehicles on site throughout the project is expected to change regularly. As such, a CTMP should be undertaken to identify the number and types of vehicles making the movements, as well as the routes they will take to deliver material and equipment to each area. The CTMP should also consider the surrounding traffic peaks to reduce any impact on the network depending the what construction activity is occurring. This plan will also need to be mindful of the surrounding schools and reserves.

During construction, the footpath and cycle lanes should be maintained at all times, where practicable. Any diversions should be short in length, well aligned and supervised. This will enable anyone using the diversion to be appropriately angled to ensure good inter-visibility and slow speeds.

It is assumed that all construction accesses will comply with vehicle crossing standard for Auckland Transport, along with temporary footpath or cycle lanes required.

Overall any construction effects can be effectively identified and controlled through the preparation of a CTMP. As such, the ensuing effects of the required construction activities can be appropriately managed, mitigated and/or removed when the proposal is built.

### 6.2.2 Station Road near Papatoetoe Station

The construction effects of the Third Main for this area are very similar to the Bridge Street construction area described above. Construction access will be required for the construction from the Park and Ride Station at No. 21 Station Road. This site is also likely to be used as a construction yard. There is currently good visibility turning into this site in both directions along Station Road. There is also a flush median that can be used to help vehicles move out of the main stream of traffic, reducing effects on traffic flows.

There are bus stops close to the access which may require relocation, depending on the type of vehicles accessing the construction area through the Park and Ride. However, their relocation can be addressed via the CTMP.

Access to No. 12 Wyllie Road is required through No. 14 Wyllie Road. As access to this site is within the left turn slip lane from Station Road into Wyllie Road, construction traffic routing will be important to identify and communicate to all drivers using this site. Opportunities exist at the Wyllie Road intersection to provide safe right turn movement from Wyllie Road into the construction area through the implementation of temporary traffic management, avoiding the need for heavy vehicles to travel through Old Papatoetoe. The safe operation of this construction access will also be addressed by the CTMP. Suitable controls are also required to enable the continued use of car parking at No.12 Wyllie Road with temporary construction access through this property. Engagement with the property owner will identify construction traffic management protocols in order to manage access times that would not give rise to any conflicts with church services and/or organised gatherings/community events are held at the site.

At No.'s 5 and 9 Station Street, it is anticipated that minimal works will be undertaken on these sites for the majority of the construction. Demolition of the rear structures at these locations will likely occur early in the programme to enable the construction of a retaining wall. It is expected that these activities will be undertaken fully on site, with vehicles turning left into the site and using the traffic signal timing to exit the site in a safe manner under a traffic management plan. Pedestrian and cyclist access along the corridor should be maintained at all times during construction and keep clear of construction vehicles.

Construction access is also required at Gordon Park, No. 18 Gordon Road. This local residential cul-de-sac is reasonably narrow so during periods where higher construction traffic volumes are anticipated, consideration should be given to temporary parking restrictions to facilitate safe vehicle movement along this short length of road.

A CTMP will be used to capture the above potential transport effects and identify the types of vehicle movements required, the volume of construction vehicles, staff parking or transport to/from site. This plan should also consider the working hours of each site individually at each stage of the project to minimise effects on the surrounding network, including during peak commuting and school hours. Given the proximity of the train line and the generally operational train line, travel by public transport, including train and buses, should be encouraged by the contractor as a way to not only reduce the number of trips to/from the site but also the parking demand for construction staff vehicles.

Overall any construction effects can be identified and managed through the preparation and implementation of an approved CTMP.

### **6.2.3 Middlemore Station**

The relocation of all northern car park access will be required to enable the station works to be undertaken. The timing and sequencing of these changes will be important as well as communicating these changes to the hospital staff and rail passengers. During construction, the CTMP will have to clearly define hours of operations and safe, clear paths for pedestrians and cyclists to gain access to the both the station and car park areas.

Pedestrian and cyclist access must be maintained at all time for all groups of people. Access to the lifts must also be maintained to provide access for low mobility users. Construction staging will need to provide safe, clearly sign posted crossing points, including pram crossings throughout the construction.

Access to all the car parks must also be maintained as these spaces are used by staff often on late / night shifts or early morning when there is limited passive surveillance around. Communication with the hospital staff to the changes during construction and to identify any other movement issues should be undertaken. Consideration to creating a temporary drop off zone at the end of Orakau Road should be reviewed to remove conflicts between construction traffic and kiss and ride vehicles.

Similarly, construction access to No. 64 Rosella Road will be managed through a CTMP, with defined operating hours, clear path for pedestrians across the construction site access, and information informing people of no station access. On-street parking on Rosella Road will need to be considered during construction to enable clear visibility in both direction while turning into and out of the proposed site access.

Opposite No. 115A Gray Avenue, access to the rail corridor is required from the road reserve on a temporary basis during the proposed construction. As this is on the outside of a curve, the visibility of vehicles leaving the site is assessed to be appropriate in both directions. The visibility for motorists turning right into this site is lower than expected prior to the yield point. However, as a vehicle approaches the proposed site access, as it is slowing to enter the site, the visibility increases again to an appropriate level. The flush median provides a safe point of entry for right turning traffic. It is recommended that parking be restricted on both sides of this road around the proposed site access to further increase visibility in the CTMP. The visibility for vehicles following turning construction vehicles is sufficient to identify vehicles that may be slowing to turn. This is anticipated to be managed through the CTMP.

### 6.3 Proposed Mitigation Measures

Overall the proposed mitigation for the proposed alteration to designation is the development and implementation of an approved CTMP. The CTMP will identify the risks and proposed mitigation specific to each site. These may include:

- Hours of operation to:
  - Minimise congestion of the roading network particularly around the hospital, schools and on the main route to the airport;
  - Priorities pedestrian access to train station and bus stops for transfers during peak times and during school hours; and
  - Restrict hours of operation or types of movements during peak network hours and school pick up and drop off times if required.
- Identify site access requirements including:
  - Identify type/size of vehicles required;
  - Vehicle tracking to allow all vehicles to turn around within the construction area, if possible;
  - Visibility requirements at proposed site access locations;
  - Areas of no parking restrictions and temporary loss of on street car parking;
  - Potential bus stop relocation requirements outside the Park and Ride;
  - Temporary traffic management requirements to facilitate safe movement of construction vehicles to/from site; and
  - Routes for construction vehicles to/from site, including any requirements for overweight or oversize equipment deliveries.
- Provide safe, clearly sign posted routes for pedestrians and cyclists around construction zones, separating them from construction traffic.

The CTMP should be developed in consultation with Auckland Transport, as the Road Controlling Authority. This may allow for modification to traffic signal phases in key locations to help mitigate temporary construction effects or support a change in pedestrian movement due to construction activities.

It is considered that with the use of a CTMP, the transport effects related to the alteration to designation will have no noticeable effect on the daily operation of the local road network. The CTMP will be provided with the Outline Plan or resource consent application as required.

## **7. Summary and Conclusion**

### **7.1 Summary**

Overall, the proposed alternation to designation is considered to have less than a minor effect on the local transport network. This assessment is based on the findings that the only permanent changes to the transport environment are at Middlemore Station with the expansion of the station and the new Kiss and Ride / drop off zone. The relocation of the car park access for the main at grade car park and the multi-story car park 150m towards Gray Avenue results in a small number of car parks being lost. The creation of the additional platform requires the relocation of the northern car park access to No. 64 Rosella Road with a loss of approximately 37 car parks. Discussions are on-going between KiwiRail and CMDHB regarding the future plans for the site and associated access/parking arrangements. There may be opportunities to create additional spaces in consultation with Middlemore Hospital.

During construction, a number of properties required partial acquisition to enable retaining walls and access to the rail corridor. The transport related effects during construction are expected to be adequately managed through a detailed CTMP.

### **7.2 Recommendations**

It is recommended that a detailed CTMP be developed in consultation with Auckland Transport to define:

- the type, and number of construction vehicles, any potential congestion impact on the network and mitigation for these effects;
- Safe site access requirements including routes to/from the site, temporary traffic control measures required;
- Safe pedestrian and cyclist routes across and around construction sites /accesses including school and hospital routes; and
- Minimise any potential conflicts between pedestrian and construction activities at stations and park and ride facilities.