



# Western Ring Route – Waterview Connection



# Assessment of Social Effects



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# Contents

1.	Summary Statement.....	1
2.	Purpose of Report .....	2
2.1	Purpose and Objectives .....	2
2.2	Assumptions and Exclusions .....	3
2.3	Relationship with Health Impact Assessment .....	3
3.	Description of Project .....	6
3.1	The Waterview Connection Project .....	6
3.2	Project Sectors .....	7
3.3	Project Construction Summary .....	9
3.4	Description of Works in Each Sector.....	10
3.5	Reserve Reinstatement Measures .....	22
4.	Methodology .....	27
4.1	SIA Process and Framework .....	27
4.2	Information Sources and Methods.....	29
4.3	Regional Social Impact Assessment Framework .....	34
4.4	Local Social Impact Assessment Framework .....	38
4.5	Stages for Impact Assessment.....	43
4.6	Assessment Scale.....	43
5.	Existing Environment.....	44
5.1	Overview.....	44
5.2	Sector 1 .....	51
5.3	Sector 3 .....	59
5.4	Sectors 5 and 7 .....	62
5.5	Sector 6 .....	73
5.6	Sector 8 .....	78
5.7	Sector 9 .....	85
6.	Regional Social Impact Assessment.....	94
6.1	Transport, Accessibility and Connectivity .....	94
6.2	Economic Growth and Development.....	96

6.3	Environmental Sustainability .....	97
6.4	Healthy Communities .....	98
7.	Local Social Impact Assessment.....	101
7.1	Effects during the Planning Phase .....	101
7.2	Effects during the Construction Phase .....	111
7.3	Effects once Operational .....	130
8.	Design, Mitigation and Monitoring .....	150
8.1	Mitigation by Design .....	150
8.2	Environmental Management Plans/Procedures .....	154
8.3	Additional Recommended Mitigation .....	156
8.4	Additional Recommended Monitoring .....	161
9.	Summary .....	163
9.1	Summary of Regional Impacts .....	163
9.2	Summary of Local Impacts .....	164

## Appendices

Appendix A – Statutory and Strategic Context

Appendix B – Reserve Survey Data

Appendix C - Consultation Summary

Appendix D – Media Review

Appendix E – Demographic Profile of Local Study Area

Appendix F – Completed Social Impact ‘Checklist’

## 1. Summary Statement

In 2009 the NZ Transport Agency (NZTA) confirmed its intention that the 'Waterview Connection Project' would be lodged with the Environmental Protection Authority as a Proposal of National Significance. The Project includes works previously investigated and developed as two separate projects: being the SH16 Causeway Project and the SH20 Waterview Connection. The key elements of the Waterview Connection Project are:

- Completing the Western Ring Route (WRR) (which extends from Manukau to Albany via Waitakere);
- Improving resilience of the SH16 causeway between the Great North Road and Rosebank Interchanges to correct historic subsidence and 'future proof' it against sea level rise;
- Providing increased capacity on the SH16 corridor (between the St Lukes and Te Atatu Interchanges);
- Providing a new section of SH20 (through a combination of surface and tunnelled road) between the Great North Road and Maoro Street Interchanges; and
- Providing a cycleway throughout the surface road elements of the Waterview Connection Project corridor.

This report provides an assessment of the Waterview Connection Project ('the Project') in relation to social impacts during the planning, construction and operational phases of the Project.

## 2. Purpose of Report

### 2.1 Purpose and Objectives

The purpose of this Assessment of Social Effects/Social Impact Assessment (SIA) is to provide assessment of social impacts to inform the Notices of Requirement (NoR) and Assessment of Environmental Effects (AEE) for the Waterview Connection Project. The assessment has been prepared by:

- Developing a study area profile and assessment framework to identify the social consequences and impacts (benefits and disbenefits) of the Project on a regional and local scale<sup>1</sup>;
- Using the SIA framework to assess the social impacts of the Project on a regional and local scale. Impacts will be assessed for the planning, construction and operation phases of the Project; and
- Identifying appropriate measures to avoid, remedy or mitigate the social impacts identified in the planning, construction and operation phases of the Project.

This SIA forms one part of the overall environmental assessment which contributes to the wider decision making process. It has been prepared in accordance with section 5(2) of the Resource Management Act (RMA), which provides for the avoidance, remediation and mitigation of impacts on the environment (including people and communities), and schedule 4(2) of the RMA, which requires the effects on neighbourhoods and communities to be considered when preparing an assessment of environmental effects. Other sections of the RMA relevant to this SIA are set out in Appendix A (Statutory and Strategic Context).

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<sup>1</sup> In 2009, the Project was identified as a 'road of national significance' to support traffic volumes, reduce congestion, improve safety and support economic growth. Given that the Auckland region is home to approximately one third of New Zealand's population (with over 1.3 million people in 2006), regional impacts associated with the Project are considered to be nationally relevant in the context of transport funding and interest from national/government organisations.

## 2.2 Assumptions and Exclusions

The following assumptions and exclusions have been applied to this SIA:

- All assessment is based on plans 20.1.11-3-D-N-910-101 to 20.1.11-3-D-N-910-119, dated 24/06/2010, and the AEE project description (construction and operation), dated 24/06/2010;
- This SIA has been informed by a number of relevant technical assessments. Assessment of effects in these specialist areas has been carried out by the relevant technical author, and has been reported in this SIA where relevant to potential social impacts (for example, noise or air quality impacts on local residents). In this regard, the SIA provides a 'social lens' on many of these other technical elements;
- Assessment of route options and alternatives from a social impact perspective is briefly considered in this SIA (section 8), and is further detailed in Part D of the AEE documentation; and
- Tangata whenua values have been assessed in a separate Cultural Assessment.

## 2.3 Relationship with Health Impact Assessment

A broad definition of health and wellbeing is adopted in this SIA, in line with the 1948 World Health Organisation definition of health:

*'A state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity'.*

The potential physical health consequences of the Project have been assessed in a strategic level Health Impact Assessment (HIA) undertaken as part of the development of the 2010 Auckland Regional Land Transport Strategy (ARLTS)<sup>2</sup>. Following the consideration of the specific issues and recommendations of this HIA, completion of the WRR (including the Waterview Connection) was confirmed as a key project within the ARLTS<sup>3</sup>.

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<sup>2</sup> HIA is most effectively undertaken early in the policy development process or when a number of strategic options are being considered (New Zealand Public Health Advisory Committee, 2005 *A Guide to Health Impact Assessment*, p7).

<sup>3</sup> Auckland Regional Land Transport Strategy 2010, p56.

In addition, further Project-specific assessment has been undertaken in particular areas of relevance, which is intended to complement (but does not attempt to repeat) the health assessment already undertaken as part of the ARLTS. Table 2-1 shows the specific local HIA elements that are considered in this SIA and other project-specific technical documentation.

**Table 2-1: Consideration of Potential Health Impacts in the ARLTS and Project Documentation**

HIA Element	Where Considered
<p><b>Physical/Epidemiological Health</b></p> <ul style="list-style-type: none"> <li>Potential physical and epidemiological health consequences of the Project, including from air and noise emissions.</li> </ul>	<p><b>ARLTS Health Impact Assessment</b></p> <ul style="list-style-type: none"> <li>Provides strategic level assessment of the physical health consequences of the ARLTS options (notable variables include the number of vehicle air pollution health events for the population aged over 30 years in Auckland, and estimated annual costs of vehicle air pollution health events for the region).</li> </ul> <p><b>Air Quality Assessment</b></p> <ul style="list-style-type: none"> <li>Considers air quality effects of the Project against relevant legal standards and guidelines<sup>4</sup>;</li> <li>Compares PM10 and PM2.5 levels of a ‘do nothing’ vs ‘Project’ scenario, and quantifies the change in exposure at nearby properties sensitive receptors (in terms of examining community air pollution effects).</li> </ul> <p><b>Noise Assessment</b></p> <ul style="list-style-type: none"> <li>Considers noise effects of the Project against relevant legal standards and guidelines.</li> </ul>

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<sup>4</sup> Project investigations have confirmed that air discharges are below the National Environmental Standard for ambient air quality, which is set in recognition of the health/exposure impacts of air emissions. As such, further assessment of the potential physical health consequences of the Project has not been undertaken.



HIA Element	Where Considered
<p><b>Perceptions of Health Impacts</b></p> <ul style="list-style-type: none"> <li>Perceived physical and epidemiological health consequences of the Project, including from air and noise emissions.</li> </ul>	<p><b>Social Impact Assessment</b></p> <ul style="list-style-type: none"> <li>Perceptions of health impacts have been widely reported in Project consultation. These perceptions are considered as part of local 'wellbeing and way of life' impacts (section 7).</li> </ul>
<p><b>Individual and Community Wellbeing</b></p> <ul style="list-style-type: none"> <li>Social/cultural factors: Including people's way of life, social cohesion/participation, cultural values/practices, fear of crime, perceptions of safety, community reputation/character;</li> <li>Economic factors: Including income level/generation opportunities;</li> <li>Environmental factors: Including air quality, noise, environmental health, urban design and land use, sites of cultural significance;</li> <li>Population-based services: Including access to community facilities such as employment and education opportunities, housing, public transport, health/social services, leisure opportunities; and</li> <li>Individual/behavioural factors: Including physical activity opportunities, personal safety, feelings of anxiety, fear and sense of control over one's life.</li> </ul>	<p><b>ARLTS Health Impact Assessment</b></p> <ul style="list-style-type: none"> <li>Provides strategic level assessment of road crashes/safety, the availability of travel modes/choices and the accessibility of public transport in lower socio-economic areas.</li> </ul> <p><b>Social Impact Assessment</b></p> <ul style="list-style-type: none"> <li>Considers social/cultural factors, economic factors, population-based services, individual/behavioural factors as part of the assessment of impacts on people's 'attitudes, expectations and aspirations', 'wellbeing and way of life', 'culture' and 'community' (section 7).</li> </ul>

Overall, relevant health impact issues for the Project are deemed to have been sufficiently considered either as part of the ARLTS HIA, or the Project-specific assessment outlined in Table 2-1.

### 3. Description of Project

#### 3.1 The Waterview Connection Project

The Waterview Connection Project is the key project to complete the Western Ring Route (WRR), providing for works on both SH16 and SH20 to establish a high quality motorway link that will deliver the WRR as a Road of National Significance (RoNS). This is shown in Figure 3-1.



Figure 3-1: Waterview Connection Location

The recent completion of the Manukau and Mount Roskill Extension projects on SH20 means that this highway now extends from Manukau in the south to New Windsor in the north, terminating at a roundabout interchange with Maioro Street and Sandringham Road. Through the Project, the NZTA proposes to designate land and obtain resource consents in order to construct, operate and maintain the motorway extension of SH20 from Maioro Street (New Windsor) to connect with SH16 at the Great North Road Interchange (Waterview).

In addition, the Project provides for works on SH16. This includes works to improve the resilience of the WRR, raising the causeway on SH16 between Great North Road and Rosebank Interchanges, which will respond to historic subsidence of the causeway and 'future proof' it against sea level rise. The Project also provides for increased capacity on the SH16 corridor, with additional lanes provided on the state highway between St Lukes and Te Atatu Interchanges, and works to improve the functioning and capacity of the Te Atatu Interchange.

### 3.2 Project Sectors

Figure 3-2 shows the location and Sectors associated with the Project (generally defined by differences in construction and consent/designation requirements). These Sectors are defined in the Project Glossary.

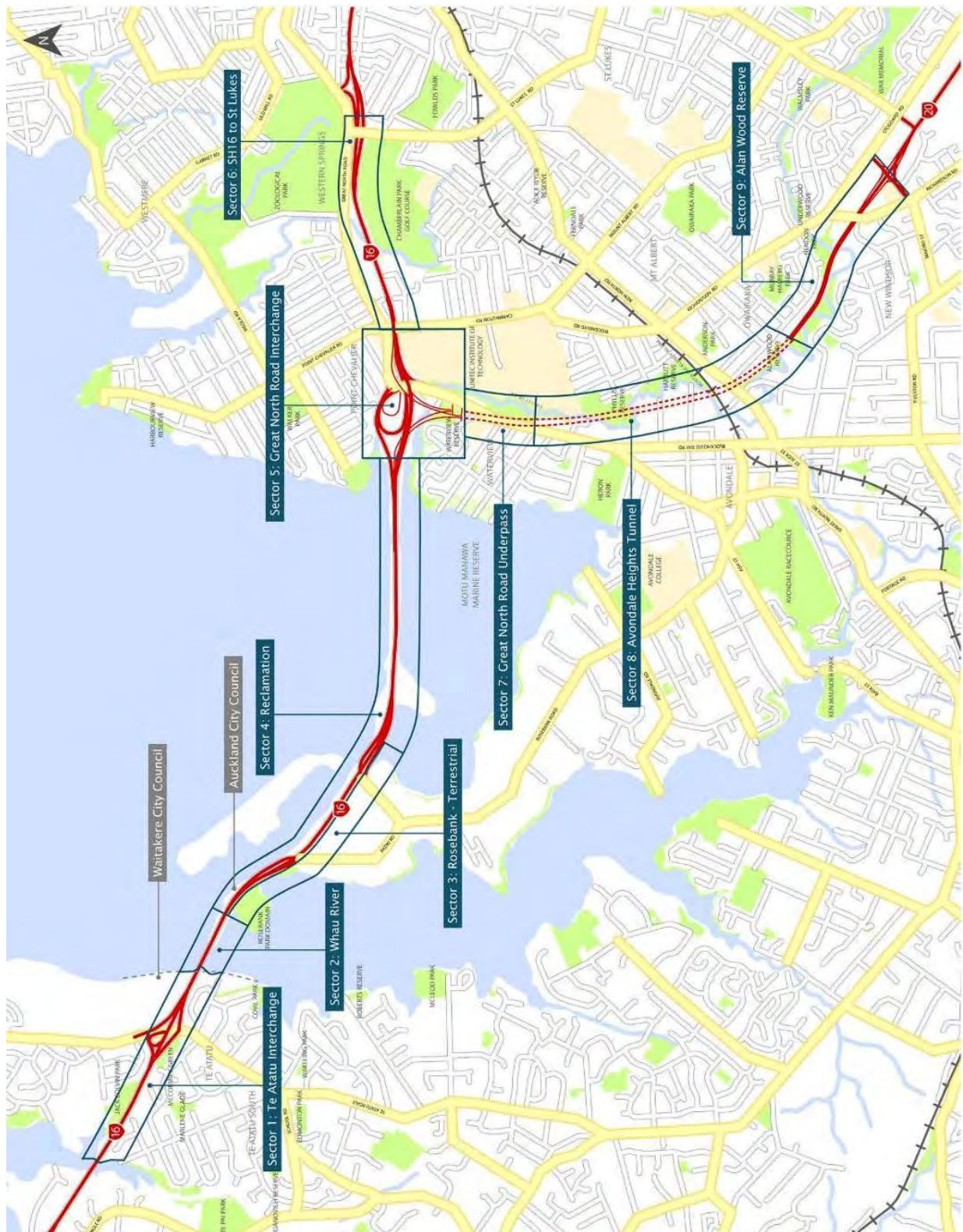


Figure 3-2: Waterview Connection Sectors



### 3.3 Project Construction Summary

Table 3-1 provides a summary of the Project construction programme.

**Table 3-1: Construction Programme Summary**

Sections of Works	Year					
	1	2	3	4	5	6
Te Atatu Interchange	█	█	█	█	█	
Causeway and Whau Bridges	█	█	█	█	█	█
Great North Road Interchange				█	█	
SH16 Great North Road to St Lukes			█	█		
Tunnel	█	█	█	█	█	
SH20: Tunnel to Maioro Interchange	█	█				

Typical construction hours being sought are:

- Driven tunnel construction: Monday - Sunday, 24 hours<sup>5</sup>; and
- Surface activities: Generally Monday – Saturday, 6am – 7pm (with the exception of a limited number of night works proposed in order to minimise traffic disruption).

There are twelve construction yards proposed along the route of the Project. In general, the construction yards will operate during daytime from 6am to 7pm Monday to Saturday, and 8am - 3pm on Sunday (to allow receipt of materials and plant for the upcoming week work, and to undertake maintenance work on equipment). However, as night time works are required on occasions across all Sectors, there will be a requirement for

<sup>5</sup> As many potential environmental effects of construction (eg. noise and lighting effects) are shielded by the ground.

access to some or all of the yards at night. Perimeter lighting will be required; this will be designed to meet relevant council bylaws and standards. The construction yards for the driven tunnel (yards 6, 7, 9 and 10) will be active 24 hours a day, however the night time works within these yards will be limited, as the majority of work will be undertaken underground. It has been assumed for the purposes of assessment that construction yards will need to be available for contractor use throughout the whole duration of the Project. Upon completion of the works, the construction yards will be disestablished and the areas reinstated.

### 3.4 Description of Works in Each Sector

The following provides a brief description of works in each Sector, as relevant to the social environment and potential social impacts considered by this SIA. A full description of works and construction activities in each Sector can be found in Part A of the AEE.

#### 3.4.1 Sector 1

**The Project has the following land occupation/acquisition requirements in Sector 1:**

- Permanent acquisition of 41 dwellings in Titoki Street, Alwyn Avenue, Marewa Street, Milich Terrace and Te Atatu Road, to accommodate the upgraded Te Atatu interchange. One of these properties will be acquired from Housing New Zealand;
- Permanent acquisition of a portion of land from 16 parcels in Titoki Street, Alwyn Avenue, Marewa Street and Milich Terrace, to accommodate SH16 widening;
- Temporary occupation of approximately 4.1ha of Harbourview Orangihina Park for construction laydown purposes. Approximately 0.4ha of Harbourview Orangihina Park will be permanently acquired to accommodate the upgraded Te Atatu interchange;
- Permanent acquisition of approximately 0.2ha of McCormick Green, to upgrade the existing Northwestern Pedestrian/Cycle Way; and
- Temporary occupation of approximately 0.9ha of Jack Colvin Park for construction purposes. Approximately 0.6ha of inaccessible land (due to the presence of a Transpower pylon and separation by the CMA) will be required permanently for a new stormwater wetland.

**Elements of Project construction relevant to the SIA include:**

Major construction activities in Sector 1 include the realignment of SH16 (expected to take approximately 36 months), changes to the Te Atatu Interchange (approximately 42 months), and reclamation and construction of stormwater pond at Jack Colvin Park (6 months).

Construction yard 1 is located within Sector 1, located within 4.2ha of Harbourview Orangihina Park. Access to the construction yard will be off Te Atatu Road North (approximately 50m north of Titoki Street). The yard will be used for offices/ablutions, construction plant and equipment storage, materials storage/laydown, a workshop, refuelling and contractor parking.

Night works are required to carry out the Te Atatu Interchange bridge deck replacement, to construct localised sections of the on/off ramps where works need to tie in with the existing Te Atatu Road, and to construct the underpass. Demolition and placement of the new Te Atatu Bridge beams over the motorway will require temporary night time closure of parts of SH16 to maintain public safety.

During the widening of SH16, traffic management measures will be put in place to ensure the existing number of lanes on the motorway and ramps remain operational throughout works. Works on the Te Atatu Interchange will be undertaken over four phases so that the existing functionality and lanes in the interchange will be maintained. Temporary barriers will be installed to isolate the work site from passing traffic.

**Operational elements of the Project relevant to the SIA include:**

- Enlargement and reconfiguration of the on and off ramps at the Te Atatu Interchange to accommodate additional lanes and to provide for bus shoulders and priority for buses and other High Occupancy Vehicles (HOV's);
- Widening of SH16 to provide an additional lane and new bus shoulders in each direction (including a bus shoulder on the westbound off-ramp);
- An additional lane in each direction on Te Atatu Road and upgraded pedestrian/cycle facilities;
- Replacement of the existing underpass connecting Te Atatu Bridge to Te Atatu Road (near Titoki Street) with an improved underpass;
- Provision of a series of at-grade pedestrian crossings across the interchange (to align with current informal crossing points and to fit in with interchange signals);
- Upgrading of the Northwestern Pedestrian/Cycle Way through McCormick Green, and extension of the Northwestern Pedestrian/Cycle Way westbound along SH16 through to Henderson Creek and beyond;
- Permanent stormwater wetland in Jack Colvin Park (in that part of the park which is currently inaccessible to park users) and reinstatement works including planting, landscaping, fencing and carparking;
- Noise walls (up to 2m in height north of SH16 and up to 3.5m in height south of SH16) and landscaping along the motorway edge and interchange. Open Grade Porous Asphalt (OGPA) will also be used to mitigate the noise effects at their source; and

- A new private accessway to reconfigure access to residential properties at 356, 356A and 358 Te Atatu Road.

### 3.4.2 Sector 2

#### **Elements of Project construction relevant to the SIA include:**

Major construction activities in Sector 2 include widening of the bridge decks (expected to take approximately 28 months), construction of the pedestrian/cycle bridge (10 months) and reclamation around the bridge abutments (4 months).

Widening of the Whau River Bridge on SH16 will be undertaken over four phases and will maintain operation of existing traffic lanes throughout the works. This will allow the existing number of lanes to remain operational throughout works, and the carriageway lanes and shoulders will be narrowed. Temporary barriers will be installed to isolate the work site from passing traffic.

#### **Operational elements of the Project relevant to the SIA include:**

- Widening of the existing Whau Bridges to provide an additional lane and new bus shoulders in each direction;
- A replacement dedicated cycle/pedestrian bridge alongside the existing Whau Bridges, to accommodate the Northwestern Pedestrian/Cycle Way;
- OGPA surface to mitigate the noise effects at their source; and
- Landscaping and stormwater filtering along the motorway.

### 3.4.3 Sector 3

#### **The Project has the following land occupation/acquisition requirements in Sector 3:**

- Permanent acquisition of a small section of business zoned land from 5 parcels of land on Rosebank and Patiki Roads, to accommodate widening of SH16; and
- Temporary occupation of approximately 1.4ha of Rosebank Park Domain for construction purposes. Approximately 1.2ha of Rosebank Park Domain will be permanently acquired in order to accommodate the access upgrade into the Domain, improvements to the footpath/cycleway, additional westbound traffic lane and bus shoulder, and associated stormwater treatment devices.



**Elements of Project construction relevant to the SIA include:**

Major construction activities in Sector 3 include SH16 widening (expected to take approximately 24 months), construction of retaining walls (11 months), replacement of the existing pedestrian/cycle bridge (7 months) and construction of a new access road to the Rosebank Park Domain (6 months).

Before the new Patiki pedestrian/cycle bridge can be installed, the existing cycle bridge must be demolished. This work will require cyclists to use Patiki Road as a diversion during these works. Night closures will be required to accommodate the crane and excavators required.

**Operational elements of the Project relevant to the SIA include:**

- Minor reconfiguration of the existing Rosebank Interchange and Patiki off-ramp bridge;
- Widening of the existing state highway corridor to provide an additional lane in both directions (which requires some realignment of the Northwestern Pedestrian/Cycle Way);
- Improvements to the existing bus shoulder to provide bus shoulders in each direction;
- Widening of the existing bridges at the Rosebank interchange and Patiki Road;
- Replacement of the existing cycle/pedestrian bridge at Patiki Road to accommodate the Northwestern Pedestrian/cycle way and provide a more attractive bridge design, and raised Pedestrian/Cycle Way on retaining wall at Rosebank Park Domain (separating the Pedestrian/Cycle Way from vehicle traffic);
- Provision of a link from the Northwestern Pedestrian/Cycle Way to the local road network at Patiki Road;
- Replacement of the road access to the Rosebank Park Domain with separated vehicle and cycle/pedestrian lanes;
- Existing timber boardwalk to be widened and provided with guardrail;
- Landscaping along the motorway; and
- Landscaping and fencing along existing ramp abutment and Northwestern Pedestrian/Cycle Way.

### 3.4.4 Sector 4

#### **Elements of Project construction relevant to the SIA include:**

Major construction activities in Sector 4 include realigning the Waterview Inlet and Oakley Inlet (expected to take around 8 months), raising and widening the causeway by reclamation (54 months), and widening the causeway bridges (22 months).

For the majority of construction works the existing number of lanes will remain operational, with the width of lanes narrowed. The works do require a short period of SH16 having only five lanes (providing for a contra-flow traffic management arrangement to provide three lanes for peak flows).

#### **Operational elements of the Project relevant to the SIA include:**

- Widening of the state highway corridor to provide an additional lane eastbound and two additional lanes westbound;
- Reclamation of the existing causeway between Waterview and Rosebank, including provision of coastal protection mechanisms and raising the causeway to allow for sea level rise associated with climate change and future settlement;
- Improvements to the existing bus shoulder to provide shoulders in each direction;
- A replacement dedicated cycle/pedestrian bridge alongside the existing Causeway Bridges, to accommodate the Northwestern Pedestrian/Cycle Way and to achieve a consistent 3m width;
- Landscaping and stormwater filtering along the motorway; and
- Restoration/planting is also proposed on Traherne Island.

### 3.4.5 Sector 5

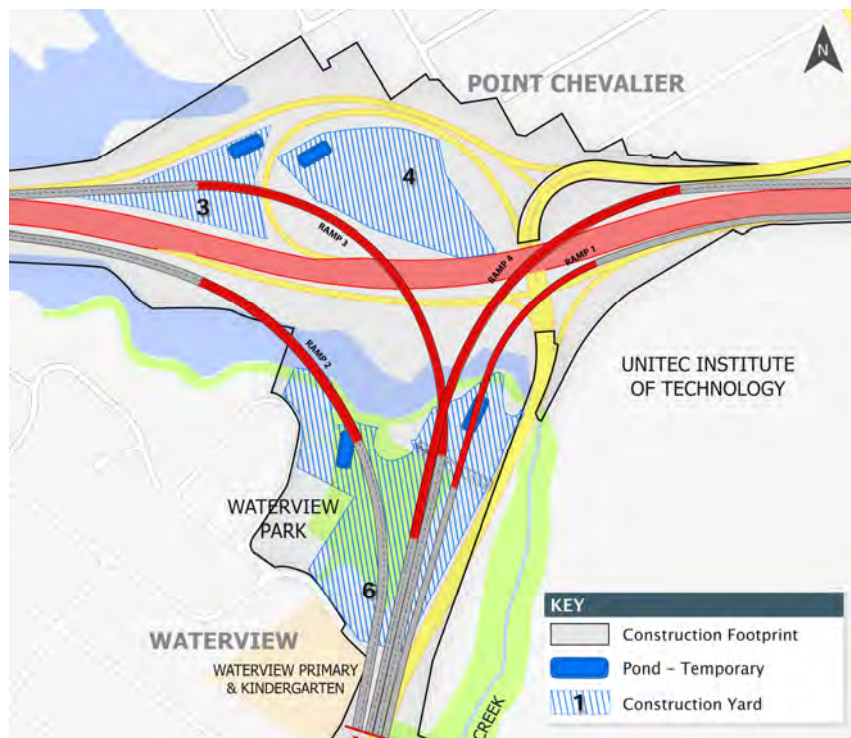
#### **The Project has the following land occupation/acquisition requirements in Sector 5:**

- Permanent acquisition of 81 dwellings (including 56 from Housing New Zealand) in Cowley Street, Great North Road and Herdman Street, to construct the Great North Road interchange;
- Temporary occupation of Waterview Reserve (100% of the approximately 2.5ha reserve) for construction laydown purposes. Approximately 1.9ha of Waterview Reserve will be permanently acquired to accommodate ramps for the new Great North Road interchange, a tunnel control ventilation building and parking area;
- Temporary occupation of approximately 0.15 ha of Waterview Esplanade for construction purposes;

- Temporary occupation of approximately 0.14 ha of Cowley reserve for construction purposes; and
- Permanent acquisition of the 1.6ha unnamed parcel of open space between SH16 and Great North Road to accommodate the merging of the SH20 to SH16 citybound ramps.

**Elements of Project construction relevant to the SIA include:**

Major construction activities in Sector 5 include construction of the Great North Road Interchange ramps (expected to take approximately 24 months) and construction of the approaches to the tunnel portal (12 months). Three construction yards are located within Sector 5, as shown in Figure 3-3.



**Figure 3-3: Location of Sector 5 Construction Yards**

Construction yards 3 and 4 are located within the designated Great North Road Interchange area. Yard 3 will be used by the causeway contractor for offices/ablutions, construction plant and equipment, storage/laydown, a field laboratory, workshop and contractor carparking. Yard 4 will be used for stockpiling soil material from the tunnel and the Great North Road Underpass construction. The spoil for the causeway may be stockpiled for extended periods, so appropriate sediment mitigation measures such as covering or grassing the stockpiles, or isolating the area around the stockpiles through the construction of bunds or trenches, will be employed. The yard will be used for construction plant and equipment, storage and laydown areas, a pugmill, conveyor and/or trucked tunnel spoil storage, lime mixing/spoil drying and contractor carparking. Construction site access will be managed by the Traffic Management Plan.

Yard 6 is the one of the main construction yards for the tunnel. It is located in Waterview Reserve, adjacent to Waterview Primary School and Kindergarten. It will be operated 24 hours a day, 7 days a week, with a reduced level of operations at night as only below ground construction works will occur. The yard will be fully fenced for security and access will be controlled. It is expected that this yard will have a staged use and will also be used by the contractor constructing the Great North Road Interchange, and on completion of the tunnel excavation works. The yard will be used for offices/ablutions, construction plant and equipment, storage and laydown, workshops, a refuelling facility, conveyor and/or trucked spoil storage (in a covered building), steel fixing, a bentonite plant, concrete batching plant and contractor carparking. Site access is from Cowley Street (rather than Herman Street which provides access to the school, kindergarten and residential properties).

Work in the median and on structures over live carriageways will be undertaken during night time lane/full closures. The site will be made safe and maintained in accordance with the Code of Practice for Temporary Traffic Management. The existing Northwestern Pedestrian/Cycle Way and cycle linkage along Great North Road will be maintained during the construction period.

**Operational elements of the Project relevant to the SIA include:**

- A new interchange at Great North Road to provide motorway-to-motorway connections between SH16 and SH20. Ramp heights range from just above ground level (outer ramps) to 17m (citybound onramp);
- Reconfiguration of the Northwestern Pedestrian/Cycle Way is required to ensure connectivity through the new interchange;
- Twin layer OGPA surface to mitigate noise impacts at source;
- Landscaping to create a 'buffer' along the interchange to visually counterbalance the new interchange structures, including the creation of a landscaped area within the interchange, along the riparian Oakley Creek tidal mouth and significant bunding around the edge of Waterview Reserve;
- Permanent stormwater wetland in Waterview Reserve;
- Reserve reinstatement measures in Waterview Reserve (detailed in section 3.5); and
- Provision of an all-weather track with interpretive signage through the Star Mill archaeological site.

### 3.4.6 Sector 6

**The Project has the following land occupation/acquisition requirements in Sector 6:**

- Permanent acquisition of 4 dwellings in Great North Road and Parr Road South, to construct the retaining wall for SH16 widening;

- Permanent acquisition of the vacant site at 1036B Great North Road to accommodate construction works;
- Permanent acquisition of the vacant site at 1074 Great North Road (currently zoned as part residential, part open space), to provide a permanent stormwater wetland; and
- Permanent acquisition of approximately 0.1ha of open space at Western Springs Gardens, to accommodate SH16 widening.

**Elements of Project construction relevant to the SIA include:**

Major construction activities in Sector 6 include SH16 widening (expected to take approximately 12 months) and widening either side of the Carrington Overbridge (12 months). Construction yard 5 is located within Sector 6, which will be the main yard for the widening works along SH16. Access to the construction yard will be from Great North Road. As part of the widening works will be undertaken at night, the construction yard will operate at night. The yard will be used for offices/ablutions, construction plant and equipment storage, materials storage/laydown, lime and/or cement drying and contractor parking.

Night works will be required to complete some aspects of the widening works between Great North Road Interchange and St Lukes, adjacent to the live motorway. Widening of SH16 in Sector 6 will be carried out using shoulder closures with minor mainline and ramp realignments and associated lane/shoulder narrowing. Temporary barriers will be installed to isolate the work site from passing traffic.

**Operational elements of the Project relevant to the SIA include:**

- Widening of the state highway corridor to provide an additional lane in each direction between the Great North Road Interchange and St Lukes Interchange;
- A bus priority lane in the eastbound direction;
- Noise walls (up to 6m in height north of SH16 and up to 4m in height south of SH16) and landscaping along the motorway edge and interchange. OGPA will be used to mitigate the noise effects at source;
- Landscaping along SH16; and
- A permanent stormwater wetland at 1074 Great North Road.

### 3.4.7 Sector 7

**The Project has the following land occupation/acquisition requirements in Sector 7:**

- Permanent acquisition of 22 dwellings in Great North Road (including one from Housing New Zealand), to construct the Great North Road Underpass;
- Temporary occupation of approximately 2.7ha of Oakley Creek Esplanade Reserve during construction;
- A designated accessway from Great North Road to Waterview Primary School (not currently used) is included as part of the construction footprint, to construct the Great North Road Underpass; and
- Designation of the Waterview Superette, though it is anticipated that the dairy will be able to remain fully operational throughout construction and the effects on the dairy will be managed so that this occurs (as per Part A of the AEE).

**Elements of Project construction relevant to the SIA include:**

Major construction activities in Sector 7 include construction of the Great North Road Underpass (expected to take approximately 24 months), and construction of the northern ventilation building (18 months). Night works are necessary with the Great North Road Underpass where traffic connections are required to the existing road. Construction of the underpass will be separated into three main stages to ensure that at least four lanes are maintained for Great North Road traffic at all times. Great North Road will be temporarily realigned during construction, and reinstated following construction (including all pedestrian and cycle paths).

Construction yard 7 is located within Sector 7 (shown conceptually in Figure 3-4), located within 2.14ha of Oakley Creek Esplanade Reserve. The yard will operate 24 hours a day, 7 days a week, with a reduced level of operations at night as only below ground construction works will occur. Access to the yard will be off Great North Road. The yard will be used for offices/ablutions, construction plant and equipment, a bentonite plant, a flocculation plant, ventilation compressors, transformers, storage/laydown, workshops, refuelling and contractor parking. North-south access through Oakley Creek Esplanade Reserve will be maintained during construction.

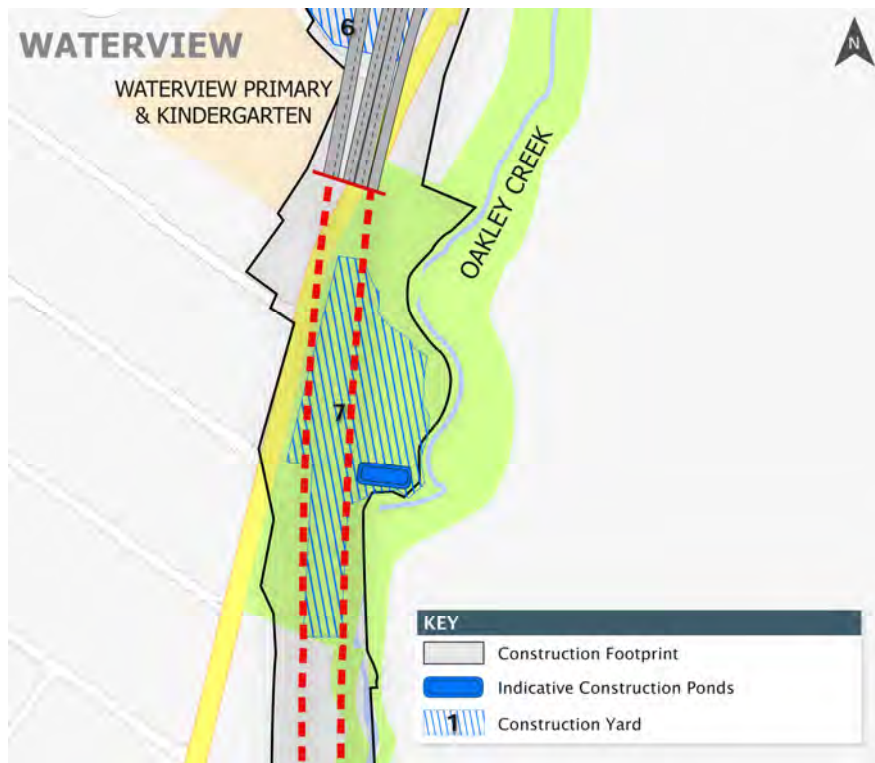


Figure 3-4: Location of the Sector 7 Construction Yard

Operational elements of the Project relevant to the SIA include:

- Two tunnels beneath Great North Road;
- Ventilation stack (25m high) and control building (approximately 17m in total height, with some 7-8m of the bulk above ground), located adjacent to the western side of Great North Road between Herdman Street and Oakley Avenue; and
- Reserve enhancement measures in Saxon Reserve (see section 3.5).

### 3.4.8 Sector 8

The Project has the following land occupation/acquisition requirements in Sector 8:

- Acquisition of the strata rights to 154 dwellings, to enable construction and operation of the bored tunnels; and
- Permanent acquisition of one residential property at 36 Cradock Street to construct, maintain and operate the emergency smoke exhaust stack.

**Elements of Project construction relevant to the SIA include:**

Tunnelling and associated mechanical/electrical fit out (including ventilation systems) is the main construction activity to be carried out in Sector 8 (expected to take approximately 48 months). Tunnel excavation will be carried out 24 hours a day.

**Operational elements of the Project relevant to the SIA include:**

- Two bored tunnels approximately 2km long beneath the designated route; and
- Emergency smoke exhaust stack at 36 Cradock Street.

**3.4.9 Sector 9****The Project has the following land occupation/acquisition requirements in Sector 9:**

- Acquisition of 29 dwellings (including 14 from Housing New Zealand) in Hendon Avenue and Valonia Street to accommodate the new surface section of motorway, Richardson Road Bridge and the realignment of Valonia Street;
- Acquisition of a small portion of the rear of 16 dwellings in Hendon Avenue;
- Acquisition of one vacant site (with a resource consent allowing for 83 residential dwellings);
- Acquisition of a small portion of the rear of 7 parcels of business zoned land at Richardson Road/Stoddard Road (including the Richardson Road Tavern, warehouse/retail buildings and the carpark of the Samoan Assembly of God); and
- Temporary occupation of approximately 7.7ha of Alan Wood Reserve/Hendon Park, with approximately 3.2ha of Alan Wood Reserve permanently required to accommodate the new surface section of motorway.

**Elements of Project construction relevant to the SIA include:**

Major construction activities in Sector 9 include construction of the southern portal and ventilation building (expected to take approximately 18 months), construction of the surface motorway (12 months), construction of the Richardson Road Bridge (12 months) and construction of the Hendon pedestrian/cycle bridge (6-9 months). Five construction yards are located within Sector 9, occupying a total of 7.7ha of Alan Wood Reserve/Hendon Park as shown conceptually in Figure 3-5.





Figure 3-5: Location of Sector 9 Construction Yards

Yards 9 and 10 are the primary construction yards for the tunnel and will be operated 24 hours a day, 7 days a week, with a reduced level of operations at night as only below ground construction works will occur. Key activities include offices/ ablutions, construction plant and equipment storage, materials storage and laydown, tunnel spoil stockpile (in a covered building), field laboratory, workshop, transformers, a refuelling facility and contractor parking. A concrete batching plant will be located within yard 10, to produce shotcrete for the ground support within the tunnel as the tunnel is advanced (as tunnel construction is a 24 hour operation, shotcrete needs to be available 24 hours for safety of the workforce and stability of the tunnel). A rock crusher will also be located in yard 10 for a period of approximately 1 year.

Construction yard 8 is a laydown area for the tunnel contractor. It may also be used for contractor parking and offices/ablutions. Yards 11 and 12 are lay-down areas for contractor, and may also be used for offices/ablutions, workshops/laboratories and contractor parking.

Night works are required to complete the Richardson Road bridge tie in. The diversion of Oakley Creek is required to allow excavation of the southern portal approach. Pedestrian and cycle access will be maintained, with appropriate diversions to divert pedestrians and cyclists where necessary. This will be undertaken in accordance with the Temporary Traffic Management Plan.

**Operational elements of the Project relevant to the SIA include:**

- Southern portal of the tunnels;

- New surface motorway extending from the southern tunnel portal to the Maioro Street Interchange;
- New on and off ramps connecting the northern part of the Maioro Street Interchange;
- Noise walls (up to 2.5m in height north of SH20, up to 4m south of SH20) and landscaping along the motorway edge and interchange;
- Ventilation stack (25m high) and building;
- Extension of the SH20 Cycleway through this Sector, connecting to the Maioro Street Cycleway under the proposed Richardson Road Bridge. Crossing facilities will be provided at the Maioro Street Interchange to allow for pedestrian and cycle movements in all directions;
- New Hendon cycle/pedestrian bridge to provide a north-south link over SH20 and Alan Wood Reserve;
- Bridging of Richardson Road allowing for two lanes of traffic, the potential for parking, a shared pedestrian and cycle path, and the future Avondale Southdown rail corridor;
- Realignment of Valonia Street to provide for the SH20 connection under Richardson Road;
- Two permanent stormwater wetlands in Alan Wood Reserve;
- Restoration of the Oakley Creek stream corridor; and
- Reserve reinstatement measures at Alan Wood Reserve (detailed in section 3.5).

### 3.5 Reserve Reinstatement Measures

The approach to reinstatement of reserve land impacted by the Project is to provide replacement land within or very close to the Project area<sup>6</sup>, and to provide an appropriate replacement of active facilities on a 'like for like' basis. This approach enables the NZTA to confidently deliver the open space mitigation package<sup>7</sup>.

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<sup>6</sup> Consultation has indicated a strong preference for open space mitigation directly within the local area affected, rather than upgrading facilities/reserves which are within walking distance and providing enhanced connections to these facilities.

<sup>7</sup> Given that the NZTA has limited scope to acquire reserve land outside of the Project area (while the NZTA can offer financial mitigation replace open space, it cannot confidently conclude that this will occur within an acceptable time period).

### 3.5.1 Waterview Reserve

The proposed reinstatement package includes replacement land and bunding to offset visual impacts at Waterview Reserve, as well as an expansion to Saxon Reserve. The intention of this approach is that (post construction) the returned area of open space at Waterview Reserve becomes an 'active recreation node', while the 'community reserve function' is resettled at the expanded Saxon Reserve (a more central location in the Waterview community). Overall, 'like for like' quantity replacement is exceeded by approximately 0.6ha<sup>8</sup>. The proposal also includes a 20m wide coastal esplanade walking route along the southern edge of Oakley Creek/Cowley Reserve to provide passive recreation opportunities. The new reserve will have a large area of street frontage and a significant 30m bund/buffer to offset the noise and visual effects of the motorway (this will screen the majority of views towards the interchange). 'Like for like' quality of active facilities will be provided locally within the Waterview Community (including the sportsfield, basketball court, volleyball court, toilet block and playground; but excluding the degraded netball/tennis courts which have not been used for a number of years). The proposed replacement areas for the impact at Waterview Reserve are shown in Figure 3-6 (over the page).

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<sup>8</sup> 1.9ha of reserve is impacted, which will be replaced by 2.5ha in the proposed mitigation works.

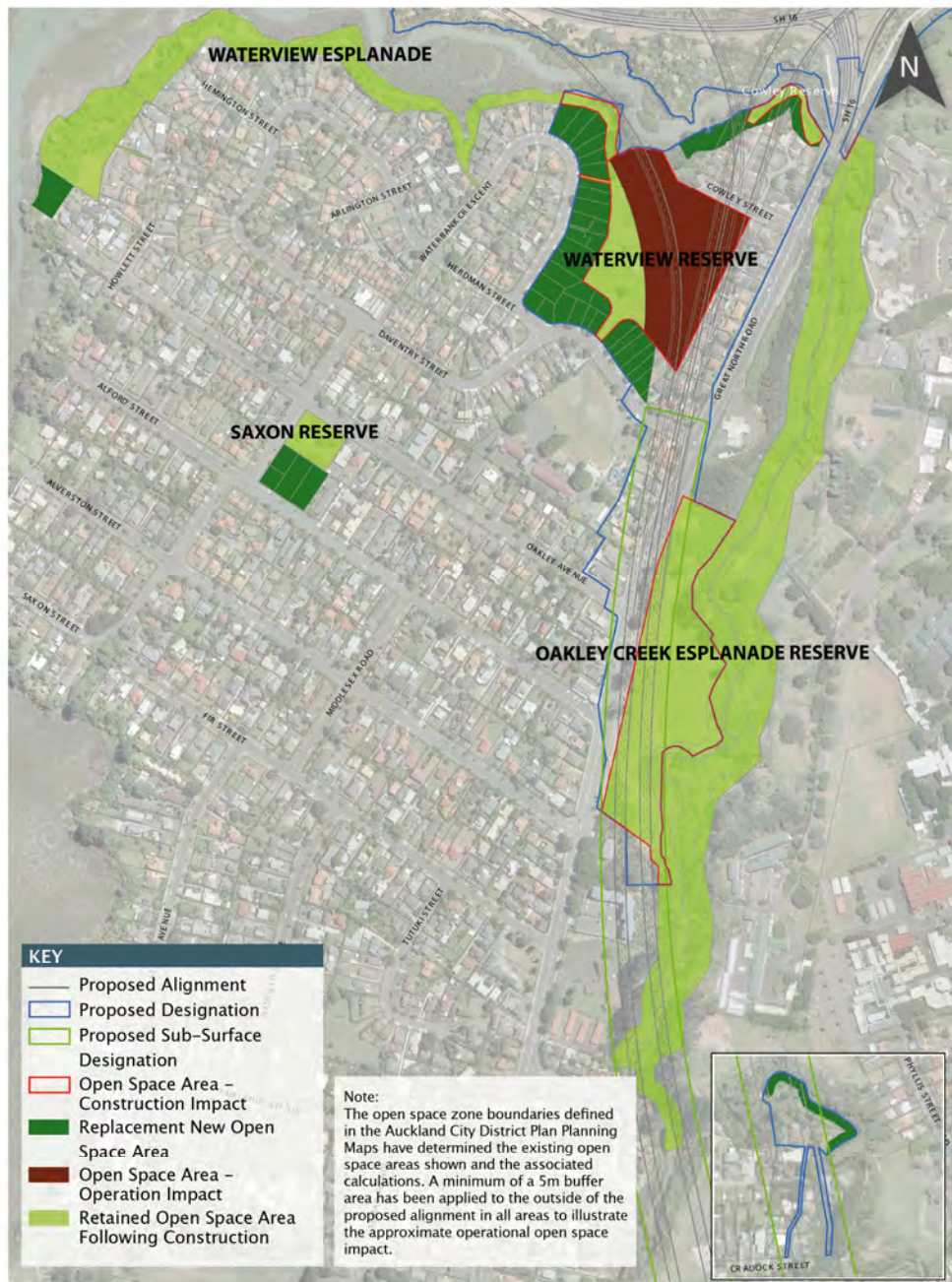


Figure 3-6: Proposed Reserve Reinstatement Solution at Waterview Reserve

### 3.5.2 Alan Wood Reserve/Hendon Park

The proposed mitigation package includes replacement land in Alan Wood Reserve/Hendon Park which will exceed 'like for like' quantity replacement by approximately 0.55ha<sup>9</sup>. The NZTA can return all existing facilities owned by ACC (including the sportsfields, basketball court and toilet block), plus an additional senior sportsfield where ACC will obtain full ownership rights. In addition, the Hendon Bridge will provide appropriate access to the sportsfields for the Owairaka community. Proposed reserve replacement for Alan Wood Reserve/Hendon Park is shown in Figure 3-7 (over the page).

### 3.5.3 Mitigation of Active Open Space during the Construction Period

Three temporary junior playing fields will be provided at Alan Wood Reserve as mitigation for the loss of playing fields at both Waterview Reserve and elsewhere in Alan Wood Reserve during the construction period. In addition, a temporary playing field area will be provided on the edge of the Waterview Reserve/Waterbank Crescent (a safe area adequately separated from the construction yard).

It is also recommended that the expansion/development of Saxon Reserve occurs at the beginning of the construction period to allow for this area to be utilised for recreation during the construction period<sup>10</sup>.

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<sup>9</sup> Approximately 3.2ha of reserve is impacted permanently by the Project, which will be replaced by 3.75 ha of reserve in the proposed mitigation works. Land associated with the future Avondale Southdown rail corridor will remain in the current lease arrangement with the New Zealand Railways Corporation (until the rail designation is implemented).

<sup>10</sup> It is acknowledged that this will be dependent on property negotiations, given that Saxon Reserve is outside of the Project designation footprint.





**KEY**

- Proposed Alignment
- Proposed Designation
- Proposed Sub-Surface Designation
- Open Space Area - Construction Impact
- Replacement New Open Space Area
- Open Space Area - Operation Impact
- Retained Open Space Area Following Construction

Note:  
The open space zone boundaries defined in the Auckland City District Plan Planning Maps have determined the existing open space areas shown and the associated calculations. A minimum of a 5m buffer area has been applied to the outside of the proposed alignment in all areas to illustrate the approximate operational open space impact.

Reserve Name	Existing Open Space Area (ha)	Existing Open Space Area - Construction Impact (ha)	Approx Existing Open Space Area - Operation Impact (ha)	Retained Approx Open Space Area (ha)	Proposed New Open Space Area (ha)	Balance of New vs Operational Impact on Open Space (ha)
Alan Wood Reserve	9.25	-7.18	-3.19	6.06	0.36	-2.82
Valonia Reserve	0.51	0.00	0.00	0.51	3.26	3.26
Hendon Park	1.69	-0.49	0.00	1.69	0.12	0.12
<b>Total</b>	<b>11.45</b>	<b>-7.67</b>	<b>-3.19</b>	<b>8.26</b>	<b>3.74</b>	<b>0.55</b>

Figure 3-7: Proposed Reserve Reinstatement Solution at Alan Wood Reserve/Hendon Park

## 4. Methodology

### 4.1 SIA Process and Framework

The International Association for Impact Assessment (IAIA)<sup>11</sup> states that Social Impact Assessment (SIA) is:

*'Analysing, monitoring and managing the social consequences of development. Social impact assessment includes the processes of analysing, monitoring and managing the intended and unintended social consequences, both positive and negative, of planned interventions (policies, programs, plans, projects) and any social change processes invoked by those interventions'.*

The IAIA notes that SIA can be undertaken in different contexts and for different purposes, but that the following principle is important across all SIA:

*'The improvement of social wellbeing of the wider community should be explicitly recognized as an objective of planned interventions, and as such should be an indicator considered by any form of assessment. However, awareness of the differential distribution of impacts among different groups in society, and particularly the impact burden experienced by vulnerable groups in the community should always be of prime concern'.*

The SIA has been ongoing throughout the SH20 Project, while the SH16 section of the Project was added to the scope of this SIA in 2009, following the decision to combine the projects as a single proposal of national significance to be taken through the statutory process. Between 2000-2010 for SH20, and 2009-2010 for SH16, SIA has been closely integrated with the planning and design process<sup>12</sup>. This integrated assessment process has relied significantly on stakeholder and community consultation, with consultation results and SIA conclusions contributing towards route option assessments (as detailed in section 8 of this SIA and Part D of the AEE), design modifications and the development of mitigation measures to minimise concerns identified in consultation.

Figure 4-1 sets out the framework used to identify and assess the social impacts associated with the Project.

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<sup>11</sup> International Association for Impact Assessment, 2003 *Social Impact Assessment International Principles*.

<sup>12</sup> One author of this SIA has held a key role in the Project planning and consultation process since 2000, which has enabled this close integration.



Figure 4-1: SIA Framework



### 4.1.1 International Themes for Social Impact Assessment

The IAIA outlines the key potential areas to consider when undertaking a SIA. In summary, these areas include:

- **People's Way of Life:** How people live, work, play and interact;
- **Culture:** People's shared beliefs, customs, values and language or dialect;
- **Community:** The cohesion, stability, character, services and facilities;
- **Political Systems:** The extent to which people are able to participate in decisions that affect their lives, the level of 'democratisation' that is taking place, and the resources provided for this purpose;
- **The Environment:** The quality of the environment that people live, work and socialise in (eg. air and water that people use, the availability and quality of the food they eat, the level of hazardous risk, dust and noise they are exposed to the adequacy of sanitation, their physical safety, and their access to and control over resources);
- **People's Health and Wellbeing:** The state of physical, mental, social and spiritual wellbeing;
- **People's Personal and Property Rights:** Particularly whether people are economically affected, or experience personal disadvantage which may include a violation of their civil liberties; and
- **People's Fears and Aspirations:** This relates to perceptions about people's safety, their fears about the future of their community, and their aspirations for their future and the future of their children.

In addition to the above matters, people's attitudes are also considered relevant in undertaking this SIA.

## 4.2 Information Sources and Methods

A range of information sources and methods have been used to prepare this SIA. These are detailed below.

### 4.2.1 Site Visits and Observational Surveys

SIA site visits were undertaken between 2003 and 2010. The main focus of site visits was to compile a study area profile for this SIA, and to gain an understanding of how residents' use/enjoyment of parks/other community facilities would be affected by the Project.

Observational surveys were carried out in 2006 and 2010 for those active open space areas affected by the Project, to provide input into this report and the Project reserve reinstatement solution. This data was supplemented by usage information from Council Parks departments. The results of the 2010 observational survey, together with Council usage data, are presented in Appendix B.

## 4.2.2 Community and Stakeholder Consultation

Community and stakeholder consultation feedback has formed a key information source for this SIA. Appendix C provides a detailed overview of consultation undertaken, and its relevance to this SIA. A brief overview of consultation methods and information sources used to inform this SIA is provided below.

### Newsletters/Feedback Forms

Formal written consultation opportunities occurred at major stages of the Project design development. Information newsletters and feedback forms were sent to stakeholders and members of the community in 2009 (for the SH16 Project), in 2000, 2002, 2003, 2006, 2008 and 2009 (for the SH20 Project). Newsletters/feedback forms were available on the NZTA website, were distributed among study area residents (between 10,000-18,000 newsletters were typically sent out in each round of consultation for SH20, and approximately 100 for SH16<sup>13</sup>), and people who had registered their details on the SH16 and SH20 project databases (which currently contain a combined total of 5,700 physical addresses and 1,200 email addresses).

Specific feedback sought in the SH20 newsletters that was used as an information source for the SIA related to:

- Information about the communities in the local study area, including community values and sites of importance (eg. reserves, community/transport connections);
- Route options/corridors;
- Attitudes on Transit/NZTA preferred alignment and construction options;
- Specific areas of concern with respect to 'preferred option' proposals; and
- Suggestions for mitigation options.

The SH16 newsletter was distributed prior to the inclusion of this part of the Project in this SIA. The purpose of the newsletter was to inform people of the Project and open days, rather than to seek feedback.

### Open Days

Open days were held for the separate SH16 and SH20 Projects, The purpose of open days was to present information to the public (for SH20, this involved initially outlining the results of route assessment exercises

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<sup>13</sup> Reflecting the narrower scope of investigation, consultation was targeted at directly adjacent landowners/occupiers.

and technical investigations, and then presenting the preferred construction option(s) for the Project, whereas for SH16 only the preferred construction option was presented), and to invite feedback<sup>14</sup>. Most recently, a series of four 'project expos' were held in March 2010 to present the joint SH16-20 Project to the community (including to present design changes made in response to consultation feedback from 2009). Members of the SIA team were present during SH20 and combined SH16-20 open days as observers, to understand the community views and scope of issues/queries raised during these sessions, and as presenters of seminars highlighting how some of the social issues identified had been responded to in Project design and mitigation.

### Focus Groups

Community focus groups were held for the SH20 Project in 2002, 2003 and 2006, to:

- Inform the community about the Project and design options;
- Obtain information about what was important to the community (a data source for the SIA); and
- Provide opportunities for community input into the development of various aspects of decision making (in particular possible mitigation measures).

Focus groups provided an opportunity to gain an in-depth insight into the issues, concerns and ideas of the public. Focus groups discussed important community sites/facilities, pedestrian linkages and community values, and were also held on specialist topics including noise, air pollution, visual impacts, parks/reserves and Oakley Creek. Focus groups were facilitated by members of the Project team and SIA team, with approximately 180-200 people involved. Focus groups were advertised on the Project website, newsletters, open days and drop-in centres, and were usually attended by self appointed members. However, some participants were actively invited (eg. community group and church leaders).

### In Depth Interviews

In March-April 2010, a series of 36 in depth interviews focused on the joint SH16-20 Project were held with randomly selected residents in Te Atatu Peninsula/Te Atatu South (Sector 1), Waterview (Sectors 5/7) and Owairaka/New Windsor (Sector 9). The purpose of these interviews was to validate the scope of issues and

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<sup>14</sup> Members of the study team (including NZTA representatives and technical experts) were available to respond to questions and receive verbal feedback at open days. Where relevant, feedback forms were available at open days. Open days were widely advertised on the NZTA website, by email to those people on the Project email database, by paid advertising in print media (including local and ethnic papers), and by press releases. Further details of open days/information days are included in the Consultation Reports prepared for the Project.

concerns identified in previous focus groups and consultation exercises, particularly given the time lapse since earlier SH20 focus groups (with the last being in 2006). Further, this method was specifically intended to address issues of representativeness in SH20 Project consultation, to represent a balanced community perspective. Interviews have been used as a 'validation tool' to confirm that the range of views expressed in consultation can be considered representative given the factors outlined above. The company which conducted the interviews has confirmed that the interviews were successful in addressing issues of representativeness<sup>15</sup>.

### Stakeholder Feedback

Stakeholder feedback has formed an information source for the SIA, predominantly in scoping issues and concerns to undertake the regional and local social impact assessment for both SH16 and SH20. Relevant stakeholders (notably ARC, ACC and WCC) have been involved in developing the mitigation solutions put forward for the Project (eg. in the wider design vision set out in the Urban and Landscape Design Framework) and in the Project technical assessments including this SIA. Stakeholder feedback is summarised in Appendix C, and is reported in detail in Project Consultation Reports and Part D of the AEE.

### Specific Meetings with the SIA Team

Where issues were particularly complex or where consultation feedback was out of date, the SIA team has held further interviews with key stakeholders<sup>16</sup>. Stakeholder consultation that has been ongoing via NZTA representatives has been reported to the SIA team where relevant (including feedback from Waterview Primary School, Waterview Kindergarten and Housing New Zealand).

## 4.2.3 Review of Relevant Waterview Connection Technical Reports

The SIA has drawn on a number of Project technical reports where these assessments are relevant to potential social impacts and concerns expressed in consultation, in order to provide a 'social lens' in regard to these technical matters. Technical reports reviewed include:

- Technical Report G.1 *Assessment of Air Quality Effects* (Beca, 2010);

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<sup>15</sup> Interviews were conducted by an independent market research company in people's homes (six were observed by a SIA team member or NZTA representative). It was decided to use interviews rather than focus groups to better understand the views of local people (in a setting where there was less potential to be influenced by other participants).

<sup>16</sup> For example, between February and June 2010 this has involved ACC, Waterview Primary School and Kindergarten, the Ministry of Education, Rutherford College and St Francis School.

- Technical Report G.2 *Assessment of Archaeological Effects* (Clough & Associates, 2010);
- Technical Report G.5 *Assessment of Construction Noise Effects* (Marshall Day Acoustics, 2010);
- Technical Report G.9 *Assessment of Land and Groundwater Contamination* (Beca, 2010);
- Technical Report G.12 *Assessment of Operational Noise Effects* (Marshall Day Acoustics, 2010);
- Technical Report G.13 *Assessment of Ground Settlement Effects* (Beca, 2010);
- Technical Report G.18 *Assessment of Transport Effects* (Beca, 2010);
- Technical Report G.19 *Assessment of Vibration Effects* (Marshall Day Acoustics, 2010);
- Technical Report G.20 *Assessment of Visual and Landscape Effects* (Stephen Brown Environments, 2010); and
- *Assessing the Wider Economic Impacts from the SH20 Waterview Connection* (Ascari Partners, 2007).

A 2009 report by Captivate Limited referenced in communications with Waterview Primary School (*Waterview Connection Project - Waterview School and Kindergarten: Awareness and Attitudes of Parents/Caregivers - Communication Research Results*) has also provided a useful supplement to Project consultation reports and technical assessments.

#### 4.2.4 Literature Review and Internet Research

Literature review and internet research has provided a further method for obtaining information on communities, community facilities, the statutory and strategic social planning context, and in scoping the potential social impacts associated with the Project. The following information was reviewed as part of the SIA:

- Social/environmental impact assessments of similar motorway/tunnel projects in New Zealand and overseas;
- Council policies, strategies and plans (identified in Appendix A);
- Print media coverage of the Waterview Connection (see Appendix D);
- Health Impact Assessment for the Auckland Regional Land Transport Strategy;
- Heart of the Whau (Avondale-Waterview Historical Society, 2003);
- Council parks usage data (see Appendix B);

- Ministry of Education data on school rolls and decile ratings;
- Auckland Regional Transport Authority annual cycle monitoring results;
- 2006 Census of Population and Dwellings (Statistics New Zealand);
- Atlas of Socioeconomic Deprivation in New Zealand (NZDep2006) (White, Gunston, Salmond, Atkinson and Crampton, 2008); and
- Real Estate Institute of New Zealand statistics.

## 4.3 Regional Social Impact Assessment Framework

### 4.3.1 Scoping Relevant Regional Issues

Overall, the Western Ring Route (of which the Waterview Connection is a key part) is recognised as a nationally and regionally significant project, providing transportation linkages for the wider Auckland region, particularly Auckland City, Waitakere City and Manukau City. Scoping of the relevant regional issues associated with the Project has been undertaken through the following processes:

1. Review of IAIA SIA principles (set out in section 4.1.1);
2. Review of NZTA requirements for consideration of social impacts;
3. Review of Council LTCCP community outcomes and relevant resource management themes in statutory and strategic documents; and
4. Review of stakeholder feedback on regional issues.

The outcomes of processes 2 - 4 are outlined below.

### Review of NZTA Requirements for Consideration of Social Impacts

The NZTA identifies a number of potential social impacts associated with the planning, construction and operation of state highway projects<sup>17</sup>. These include impacts associated with:

- Environmental externalities, including noise and vibration and air quality;
- Impacts on culture and heritage, eg. archaeological sites and people's customs;
- Visual quality and urban design – the aesthetics of the built environment;
- Community cohesion, in particular those impacts from accessibility and severance;
- Public health; and
- Access and mobility – the ability of state highway projects to connect users to community, recreational, health and educational facilities.

### Review of Council LTCCP community outcomes and relevant resource management themes in statutory and strategic documents

Understanding Council LTCCP community outcomes and relevant resource management themes from applicable statutory and strategic documents is important in considering the Project's likely social impacts on a regional scale. The statutory and strategic context for the Project, as relevant to the SIA, is summarised in Appendix A. Themes of relevance<sup>18</sup> from the regional and district level plans and strategies identified are:

- **Transport, Accessibility and Connectivity:**
  - Statutory and policy guidance in Auckland recognises transport and accessibility as a key community outcome, setting out objectives relating to improved travel times, reliability and multi-modal transport choices. Improving accessibility/ connectivity has the potential for significant social benefits, enabling people and communities to better connect and provide for their social and economic wellbeing;

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<sup>17</sup> NZTA Minimum Standard Z/19: Social and Environmental Management

<sup>18</sup> Based on the consideration of IAIA social impact 'themes' in section 4.1.1

- Outcome of the New Zealand Transport Strategy (NZTS), Auckland Regional Policy Statement (ARPS), Auckland Regional Growth Strategy (ARGS), Auckland Regional Land Transport Strategy (ARLTS), Auckland Transport Plan (ATP), ARC Long Term Council Community Plan (ARC LTCCP), WCC Long Term Council Community Plan (WCC LTCCP), ACC Long Term Council Community Plan (ACC LTCCP), WCC District Plan, ACC District Plan, ACC Growth Management Strategy (ACC GMS), 'Avondale's Future', Auckland City Cycling and Walking Framework (ACC CWF), Waitakere City Walking and Cycling Strategy (WCC WCS), National State Highway Strategy (NSHS) and NZTA Environmental Plan.
- **Economic Growth and Development**
  - Promoting economic growth and development is a priority of a number of strategic Auckland regional documents, and has social benefits particularly in terms of people's economic opportunities/wellbeing and quality of life;
  - Outcome of the NZTS, ARPS, ARGS, ARLTS, ARC LTCCP, WCC LTCCP, ACC LTCCP, ACC GMS and 'Avondale's Future'.
- **Environmental Sustainability**
  - Environmental sustainability (characterised by high amenity and people's perceptions of environmental sustainability) are identified as important to the Auckland regional community;
  - Outcome of the NZTS, ARPS, ARLTS, ARGS, ARC LTCCP, WCC LTCCP, ACC LTCCP, WCC District Plan, ACC District Plan, WCC OSS, ACC OSS, 'Avondale's Future', ACC CWF, WCC WCS, NSHS and NZTA Environmental Plan.
- **Healthy Communities**
  - Planning for healthy communities is a further social consideration, and particularly prominent theme in transportation planning policy guidance. The Health Impact Assessment (HIA) undertaken for the ARLTS identified four important health and wellbeing issues for transport developments: safety; access and mobility; 'active' modes of transport; and emissions and noise. The HIA also identifies equity in wellbeing outcomes as of importance to transport planning;
  - Outcome of the NZTS, ARLTS, ARGS, ACC District Plan, ACC LTCCP, WCC LTCCP, ACC CWF and WCC WCS.

### Stakeholder Feedback

Generally, there is strong recognition of the strategic importance of the Project among stakeholders, in relation to completing the WRR and providing an important transportation link to support Auckland's growth. Key regional issues raised by stakeholders (particularly Council and business/economic interests) were:

- Transport benefits: Key themes raised by stakeholders included:



- That there is an urgent need to complete the WRR to provide more reliable travel times and improve access to destinations around Auckland (including to the airport);
- Capacity upgrade works to SH16 were supported in order to maximise the transport benefits of the Waterview Connection; and
- A need to balance the Project with investment in public transport and other sustainable transport projects over the next ten years;
- Economic benefits: Stakeholders identified that completion of the WRR is crucial to providing economic and productivity benefits to businesses in the Auckland region;
- Environmental and ecological impacts: Stakeholders identified that the Project has the potential to impact negatively on regionally significant environments (for example the Motu Manawa (Pollen Island) Marine Reserve);
- Parks/open space: The need to recognise the overall impact of park/reserve take across the region was highlighted by some stakeholders.

These feedback points fit particularly with ‘Transport, Accessibility and Connectivity’, ‘Economic Growth and Development’ and ‘Environmental Sustainability’ statutory and strategic context themes identified above.

Stakeholder responses on regional issues are detailed further in Appendix C. Council and community/environmental group stakeholders also provided feedback in relation to local issues - this feedback is reported in section 4.4.1.

#### 4.3.2 Regional SIA Framework

From the range of issues identified in the scoping exercise carried out in section 4.3.1 above, a regional SIA framework has been compiled which reflects the range of regional issues and potential impacts considered to be relevant to the Project. This regional assessment framework is as follows:

- **Transport, accessibility and connectivity;**
- **Economic growth and development;**
- **Environmental sustainability; and**
- **Healthy communities.**

## 4.4 Local Social Impact Assessment Framework

### 4.4.1 Scoping Relevant Local Issues

The Waterview Connection is recognised as a regional project, and therefore has regional outcomes (eg. transportation benefits). However, as a physical infrastructure project it is recognised that it is at the local level in particular where there is the potential for adverse social impacts. In other words, it is important to recognise the different geographic Sectors of both the positive and potentially adverse social impacts of the Project. Scoping of the relevant local issues/concerns associated with the Project has been undertaken through the following processes:

1. Review of IAIA SIA principles (set out in section 4.1.1 above)
2. Review of NZTA requirements for consideration of social impacts (set out in section 4.3.1 above);
3. Review of local social impacts of motorway/tunnel projects;
4. Review of community and stakeholder consultation feedback on local issues; and
5. Review of Project media coverage on local issues<sup>19</sup>.

Processes 3 - 5 are outlined below.

#### Review of Social Impacts of Motorway/Tunnel Projects

A brief review of motorway and tunnel projects being constructed through established urban areas (overseas and within New Zealand) has been undertaken<sup>20</sup>. Local social impacts and concerns associated with these projects were:

- Construction impacts, including amenity, noise and traffic impacts; pedestrian/cycle access disruptions; and potential for anxiety associated with vibrations from tunnel construction. Schools,

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<sup>19</sup> Excluding NZTA media releases.

<sup>20</sup> Projects reviewed include the Wellington Urban Motorway Extension, Auckland SH20 Mt Roskill Extension (2009), Auckland Victoria Park Tunnel (under construction), Te Rapa Bypass (construction yet to commence), Brisbane North-South Bypass Tunnel (under construction), Sydney Lane Cove Tunnel (2007) and Sydney Cross City Tunnel (2005).

hospitals and individuals such as the elderly and disabled were identified as particularly sensitive to these impacts;

- Social benefits from travel time reductions, improved accessibility to important community infrastructure and facilities, reduced congestion and diversion of traffic off local roads (while anticipating recognising that the potential redistribution of traffic can also result in some localised adverse impacts associated with increased traffic on certain local feeder roads and/or loss of local access in certain areas);
- Health impacts (and concerns over such impacts) from ventilation stack emissions (for tunnel projects), and also during construction and tunnelling (due to noise, vibration and dust impacts);
- Wellbeing impacts including stress and anxiety associated with property acquisition and the displacement of existing land uses, and the feeling of loss of control and annoyance;
- Severance and disruptions to neighbourhood connectivity;
- Visual amenity impacts and change in neighbourhood character, but also the opportunity for improvements to above-ground amenity were identified for tunnel projects;
- Reduction in traffic volumes on local streets;
- Potential changes to the demographic/community composition of local neighbourhoods, eg. as a result of rising house prices from increased accessibility or from 'blight' associated with the anticipation of environmental/amenity degradation from Projects; and
- Creation of opportunities to improve urban amenity and pedestrian/cycle access post-construction.

### Review of Community and Stakeholder Consultation Feedback

Consultation provided the primary information source for this report. Extensive consultation for the Project has been undertaken with the community and stakeholders since SH20 investigations began in 2000, and SH16 investigations began in 2007. Responses to the Project have varied for different route and construction options. Overall feedback has been mixed, and has highlighted the following local social issues associated with the Project:

- Belief in the importance to the Project to Auckland's economy and tourism potential;
- Support for improvements to traffic and congestion in Auckland, and for including opportunities for public transport as part of the Project;
- Concern over impact on local communities, including:
  - Potential severance of communities;

- Loss of community connectivity; and
- Loss of housing stock (including the displacement of households and impacts on surrounding communities);
- Impact on open space/reserves and Oakley Creek (including loss of open space and community sports facilities, and a reduction in the 'enjoyment value' of open space/reserves and facilities located adjacent to an open motorway);
- Air quality impacts from motorway/ventilation stacks (including concern over associated health impacts);
- Visual and noise impacts of motorway – including impacts on nearby residents and users of open space, and the changed character and 'feel' of local neighbourhoods that this can bring about;
- Environmental and ecological impacts, including potential impacts on the coastal environment, water quality, local flora and fauna, and conservation values;
- Impacts on heritage/archaeological sites;
- Impact on property values;
- Impact on local schools and kindergartens, especially Waterview Primary School and Kindergarten;
- Construction impacts, including noise, vibration, air quality and traffic impacts, and disruption to community infrastructure (including sensitive sites such as education facilities, places of religious assembly, libraries and other facilities), commercial areas and employment sites;
- General opposition to building a motorway in the study area/questioning of the need for the Project;
- Belief that public transport should be prioritised over motorways;
- Stress and frustration was expressed over the change in design options to build the Project (which has created a high level of uncertainty among local residents), and others disappointed that the twin tunnel option proposed in 2008 would not be built;
- Concern over the 'criminal element' that the motorway may attract, for example graffiti and vandalism;
- Impact on vehicle, pedestrian and cycle connections (and the importance of reinstating any lost connections); and
- Issues of equity - belief that there will be no benefits to local residents who will not have easier access to the motorway due to the proposed location of interchanges.

Further information relating to Project consultation is provided in Appendix C, and in Part D of the AEE.

### Review of Project Media Coverage

The Project has had a significant media profile since SH20 Project discussions began in 2000. In particular, media coverage has highlighted the following local social issues and concerns associated with the Project:

- Traffic/congestion improvements (and the need to 'solve Auckland's traffic problems') and related economic benefits;
- Concern over the extent of residential property acquisition and the impact that this has on individuals and families – particularly the uncertainty this is introducing to people's lives and impacts on people's ability to 'move on' until a decision is made on the Project;
- Support for minimising local community impacts by constructing the Project as a tunnel;
- Changing promises to the community for a number of years, and that these 'false starts' are causing uncertainty and anxiety among residents. This has sometimes been paired with negative publicity over the way in which route decisions/revisions and property acquisition decisions have been communicated;
- Air quality impacts on local residents and schools;
- Opportunities for community participation in the Project, including concern that such opportunities will be reduced if the Project will be assessed through the national consenting process;
- Concern over impacts on heritage/archaeological sites (eg. the Star Mill site);
- Whether pedestrian and cycling bridges should be built over SH16; and
- Community concern over environmental effects and annoyances, including impacts on air quality, ecology, noise and a loss of open space/amenity.

Refer to Appendix D for a copy of media articles reviewed as part of this process.

#### 4.4.2 Local SIA Framework

From the range of issues identified in the scoping exercise carried out in section 4.4.1 above, a local SIA framework has been compiled which reflects the range of local issues and potential impacts considered to be relevant to the Project. This framework has been used as a 'checklist' of issues to systematically identify local social impacts in section 7 of this report. The local assessment framework is as follows:

**Attitudes, Expectations and Aspirations**

- Attitudes to the Waterview Connection including perceptions of equity;
- Impact on the future plans, expectations and aspirations of individuals and communities, including people’s expectations of neighbourhood character and safety.

**Wellbeing<sup>21</sup> and Way of Life**

- Changes to wellbeing (including stress/anxiety);
- Perceived health impacts;
- Impacts on quality of life;
- Impacts on patterns of day to day living, including at-home activities and accessibility/connectivity;
- Impacts on people’s property rights;
- Impacts on leisure and recreation opportunities, including impacts on reserves/open space.

**Culture**

- Changes to shared beliefs, values or practices;

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<sup>21</sup> As set out in Table 2-1 of this report, factors deemed to influence individual and community wellbeing include:

- Social/cultural factors: Including people’s way of life, social cohesion/participation, cultural values/practices, fear of crime, perceptions of safety, community reputation/character;
- Economic factors: Including income level/generation opportunities;
- Environmental factors: Including air quality, noise, environmental health, urban design and land use, cultural sites;
- Population-based services: Including access to community facilities such as employment and education opportunities, housing, public transport, health/social services, leisure opportunities; and
- Individual/behavioural factors: Including physical activity opportunities, personal safety, feelings of anxiety, fear and sense of control over one’s life.

- Impacts on cultural/heritage landscapes.

#### Community

- Impacts and disruption to community infrastructure, commercial areas and employment sites/structures;
- Changes to community cohesion, structure/demographic composition, stability and character, including those resulting from severance or lost housing stock;
- Creation/exacerbation of social tensions and divisions within the community.

## 4.5 Stages for Impact Assessment

There are four potential stages where social impacts can occur during a project:

- Planning/consultation;
- Construction/implementation;
- Operation; and
- Closure/decommission (if relevant).

This assessment will consider social impacts during the planning, construction and operation phases of the Project. It is not considered relevant to consider the potential impacts associated with closure of the proposed project. It is also noted that some effects of the planning phase have already occurred, given the ten year history of the SH20 Project.

## 4.6 Assessment Scale

The assessment scale used in this report is as follows:

- A social benefit – **positive** (further defined as significantly positive, moderately positive or minor positive impacts);
- An adverse social impact – **negative** (further defined as significantly negative, moderately negative or minor negative impacts); or
- Neither a social benefit nor impact – **neutral**.

## 5. Existing Environment

### 5.1 Overview

While the Waterview Connection is regarded as a nationally and regionally significant project, it is important to recognise that the social impacts of the Project (particularly the potential adverse impacts) extend over a more localised area. In this respect, a local SIA study area has been set for the purposes of profiling the existing environment and for assessing local social impacts associated with the Project. Figure 5-1 shows the local SIA study area and relevant Census Area Units (CAU's) of interest.

The local study area covers a large geographic extent and has a diverse population. Most Sectors (with the exception of Sectors 2, 3 and 4) are dominated by residential land uses, and each of these residential areas is described within this section of the report. Sector 3 is dominated by business/industrial uses (a business area supporting the wider local and regional community). Just over 65,000 people lived in the study area CAU's in 2006, up from 56,000 people in 1996 (growth of almost 16% over this period). A full demographic profile for the local study area CAU's is provided in Appendix E<sup>22</sup>, and specific demographic information relating to communities within the study area is included in the following section. Sectors 2 and 4 include areas of SH16 and the CMA, and are not specifically addressed in this existing environment description (other than the Northwestern Pedestrian/Cycle Way, which runs through Sectors 2 and 4). The study area is located within the Auckland region, represented by the Auckland Regional Council, Waitakere City Council (Sector 1) and Auckland City Council (Sectors 2-9)<sup>23</sup>.

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<sup>22</sup> Represented statistically by the Census Area Units (CAU's) in the local study area, as shown on Figure 5-1. Data is based on the 2006 Census, which is now 4 years out of date. However, the Census remains the most comprehensive dataset available to develop a community demographic profile. Certain variables from the 1996 and 2001 Censuses are also included to show trends over time.

<sup>23</sup> From October 2010, the study area will be represented by a single Auckland Council.





Figure 5-1: Local SIA Study Area

This section provides a description of the variables that have been used to provide insight into the local study area existing environment:

- Insight into people's **attitudes, expectations and aspirations** is particularly provided through the inclusion of consultation feedback (reported in this section and in more detail in Appendix C), information on Council strategies and community infrastructure/facilities of particular importance to local people;
- Insight into people's **wellbeing and way of life** is particularly provided through the inclusion of consultation feedback (reported in this section and in more detail in Appendix C), common locations for accessing social services and attending school, travel patterns, reserves and recreation areas;
- Insight into people's **culture** is particularly provided through the inclusion of community values articulated in consultation, archaeological/heritage sites, consultation feedback (reported in this section and in more detail in Appendix C), and places of religious assembly/affiliation; and
- Insight into local **communities** is particularly provided through the inclusion of information about local town centres, community infrastructure and resources, community meeting spaces, consultation feedback (reported in this section and in more detail in Appendix C), and the demographic composition of communities (eg. population growth, ethnic composition, socio-economic status).

Specific attention is given to the location and use of community infrastructure and resources in the local study area, which are important for social wellbeing and provide insight into how people live, work, play, and interact; community identity and character; how people access services and facilities; and their aspirations for the future of these communities. There is a particular focus on educational facilities and reserves/recreational areas, which were identified as important community resources during consultation for the SH20 Project.

Figure 5-2 shows the location of the major transport links in the local study area, and Figure 5-3 shows the location of the major pedestrian links. Figure 5-4 shows the location of school zones within the local study area. Figure 5-5 shows local concentrations of social and pensioner housing in the study area. Maps of key community infrastructure are included within the description of each Sector (below)<sup>24</sup>.

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<sup>24</sup> Maps highlight sites of particular importance from an SIA perspective, but are not intended to provide an exhaustive list of community sites of interest in the area. Sites have been identified from site visits, consultation feedback and internet sources.

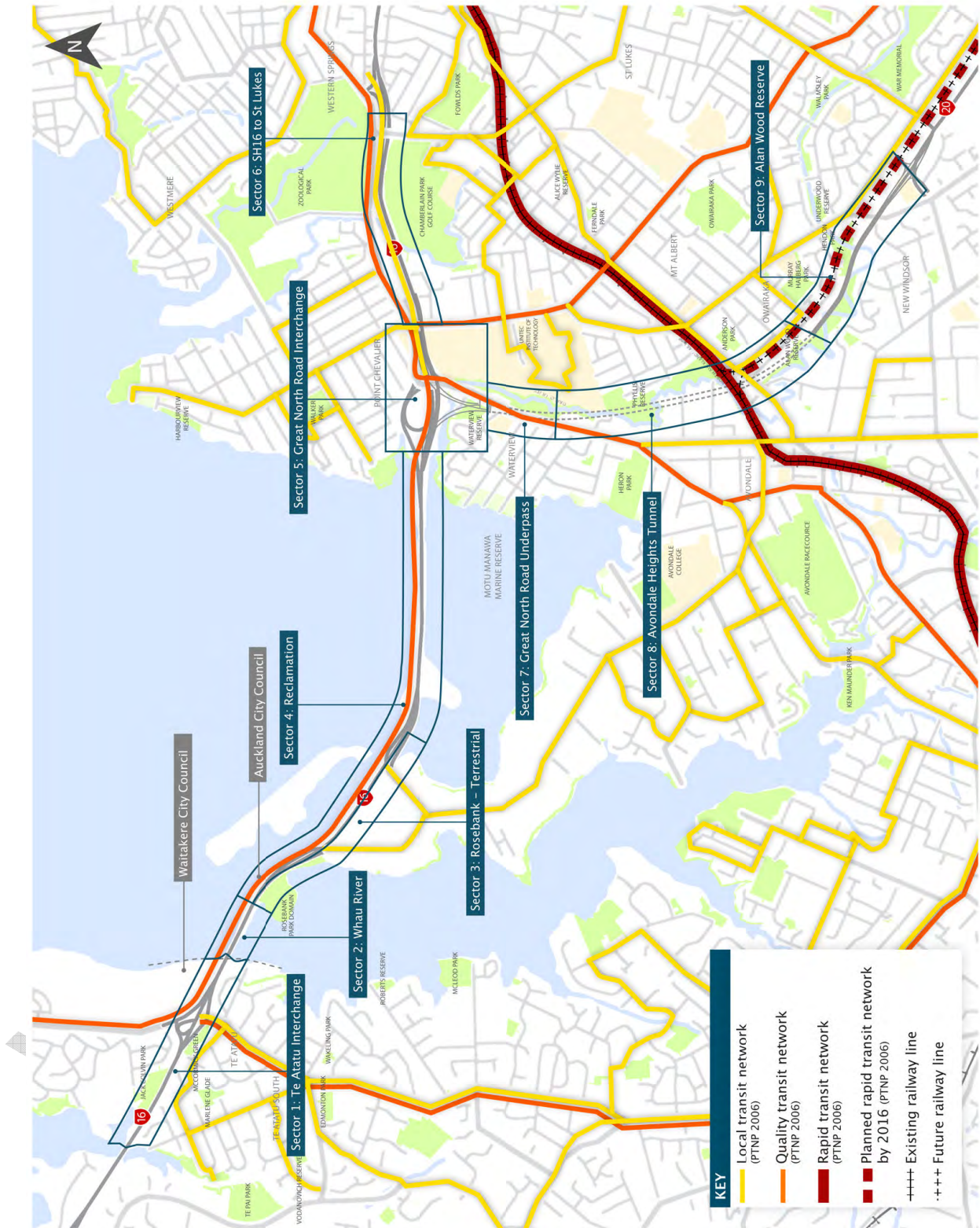


Figure 5-2: Major Transport Links in the Study Area



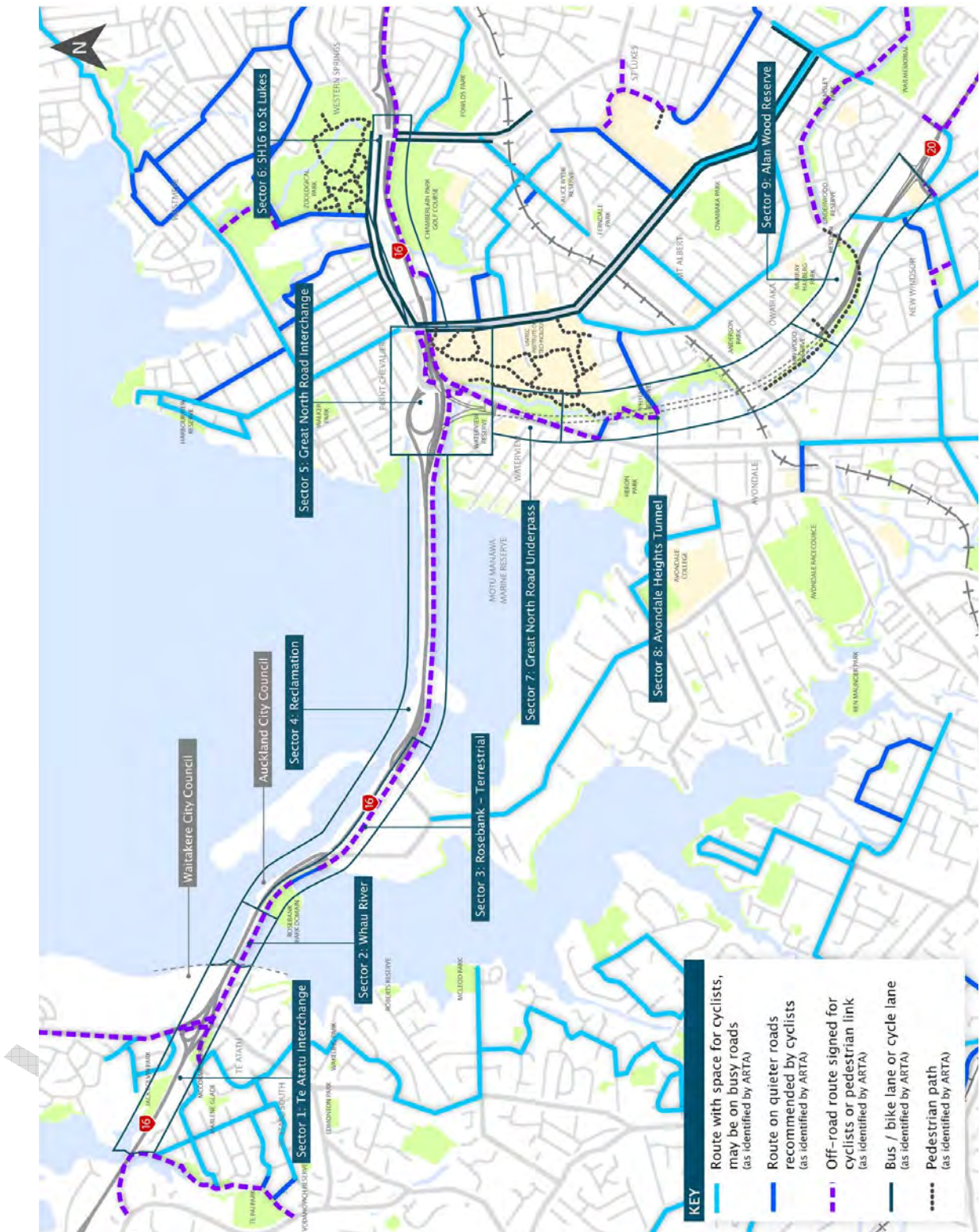


Figure 5-3: Major Pedestrian Links in the Study Area



Figure 5-4: School Zones in the Study Area



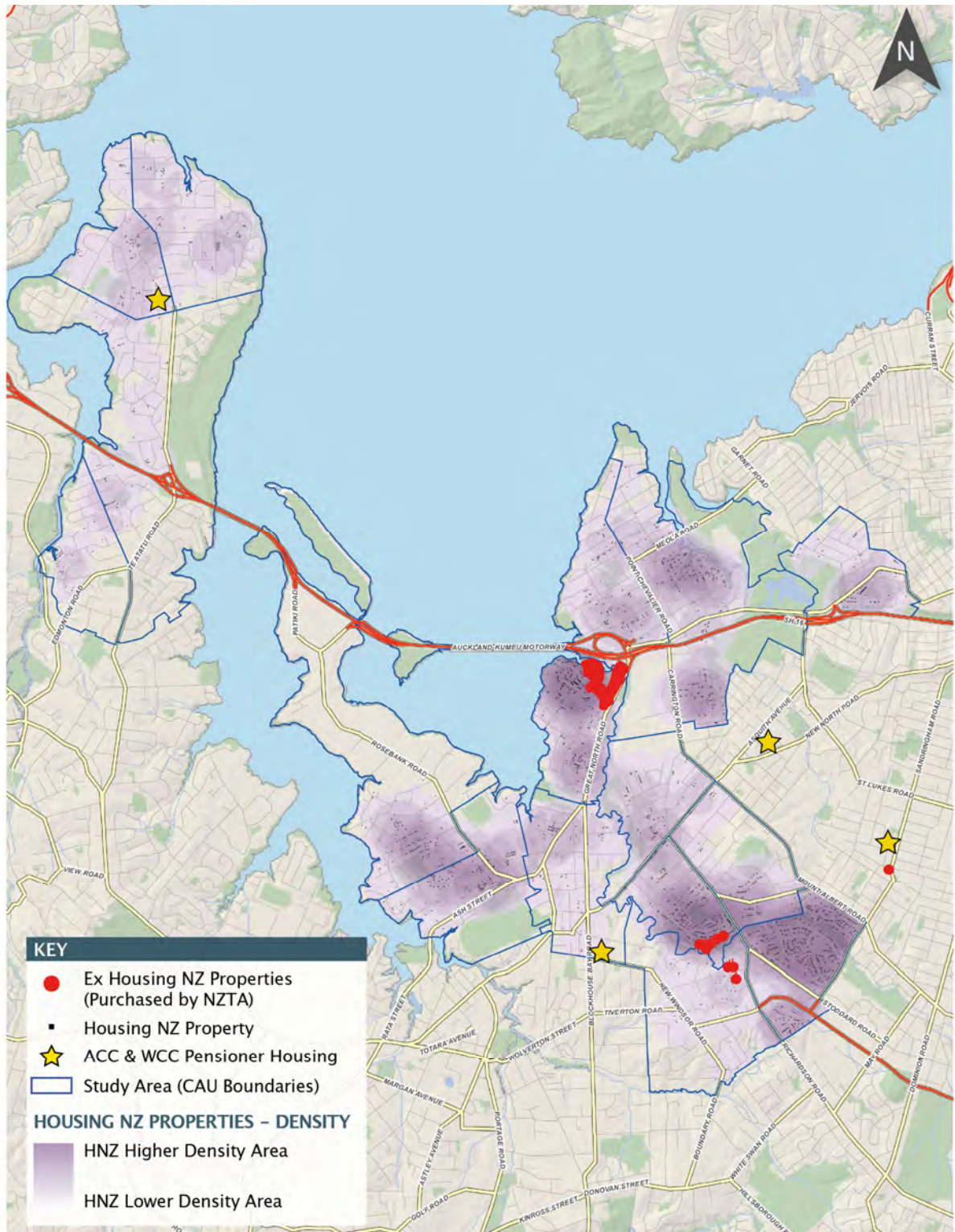
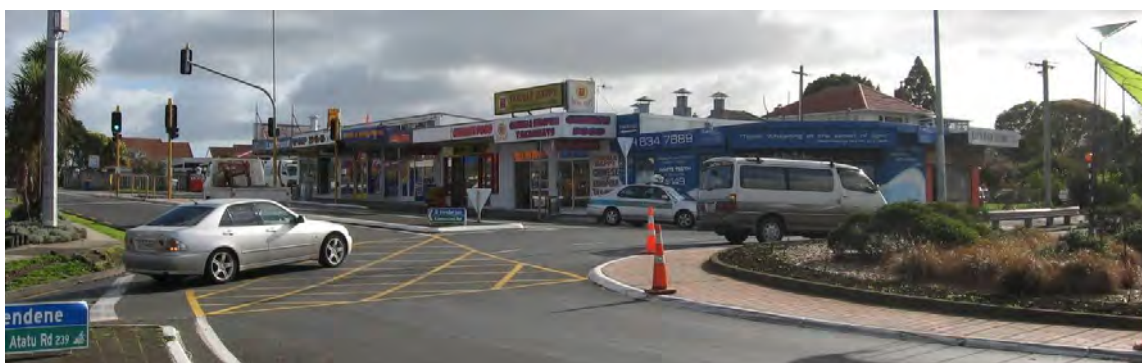


Figure 5-5: Local Concentrations of Social and Pensioner Housing in the Study Area

## 5.2 Sector 1

### Overview

Sector 1 covers the residential areas of Te Atatu/Te Atatu South (south of SH16) and Te Atatu Peninsula (north of SH16). These areas are currently separated by SH16 and the Te Atatu Interchange, though a strong social connection exists between these areas. Te Atatu Road provides the key north-south link in the area, connecting schools, community facilities and shops that are present on both sides of SH16. There is a community centre/hub on either side of SH16 – one at Te Atatu South and another on the Te Atatu Peninsula. Te Atatu South is an older community centre and is also recognised as an important urban area in the Growth Management Strategy for Waitakere City. The Te Atatu shops include a number of retail outlets, commercial services, a gymnasium and medical facilities (the Te Atatu South Medical Centre, offering a general practice facility, and a pharmacy opposite the Medical Centre). There is also a police station located in Te Atatu South. There are a number of places of religious assembly in Te Atatu South, many of which are located on Waipari Road.



**Figure 5-6: Te Atatu South Town Centre**

The Te Atatu Peninsula town centre and community have developed substantially since the development of SH16 in the 1950's. The area has grown rapidly over the last decade and is identified as an important area of growth in the Growth Management Strategy for Waitakere City. The town centre offers a range of retail shops, medical facilities (The Peninsula Medical Centre, offering a local doctor/medical facility, physiotherapy and a pharmacy), commercial services, a library and a community centre. Hospice West Auckland, located in the northern area of Te Atatu Peninsula provides free care and services for individuals with terminal or life-threatening illness and their families, serving a wider west Auckland catchment. Places of religious assembly are located along the Peninsula and include a Baptist and a Samoan Church. The town centre is located approximately 1km north of the Te Atatu Interchange and is represented by the Te Atatu Peninsula Business Association. The area is the subject of the Te Atatu Peninsula Town Centre Concept and Implementation Plan (2008), which aims to provide for more local shops and services for the Peninsula area. Further, facilities in the Peninsula town centre and main street are planned for redevelopment in response to growth trends (eg. community centre and library). It is noted that the growth expected in the Te Atatu Peninsula (eg. in the Town

Centre Concept and Implementation Plan) does not focus on links between this area and the south. This indicates that there may be an increased separation of these communities in the future.



**Figure 5-7: Te Atatu Peninsula Town Centre**

The community facilities provided in both of these suburbs infer a degree of distinction in services between these communities. However, for other activities such as library visits and school attendance (see below), the connection between these areas is evident. Both areas provide employment opportunities for local residents. In terms of historic heritage, there are a number of middens along the coast of the Whau river. The remains of the historic Auckland Brick & Tile Co. brickworks site are also located along the Whau River, north of SH16.

Figure 5-8 over the page provides a map of community infrastructure and areas of interest in Sector 1.

### Community

2006 Census data indicates strong demographic similarities between the five CAU's that make up this Sector<sup>25</sup>. Just over 18,500 people lived in the wider Sector 1 study area in 2006. Population growth has been high since 2006, with Te Atatu Central and the northern point of the Te Atatu Peninsula having the highest growth from 2001 (19% and 17% respectively), demonstrating significant growth across the Sector. Between 21-25% of residents had resided in their current dwelling for less than 1 year, and a cumulative total of 53-61% for less than 4 years. Durham Green had the highest proportion of residents who had lived in the same dwelling for the least amount of time (indicating a relatively high degree of residential mobility), while Edmonton and Matipo had relatively lower rates of mobility, and the highest proportion of residents who have resided in their current dwelling for more than 30 years (8% and 10% respectively).

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<sup>25</sup> Wakeling, Edmonton, Matipo, Te Atatu Central and Durham Green.





Figure 5-8: Community Infrastructure in Sector 1

Ethnic composition is very similar across the area, with European the predominant ethnic group, followed by Asian, Maori and Pacific Islander. English is the most common language spoken within Sector 1, followed by Maori. Maori speakers may be more prominent in this Sector due to the Maori language full immersion school located at Rutherford College, on the northern side of SH16. Within the meshblocks affected by property acquisition, the predominant ethnic groups are European (53%), Asian (20%), Pacific Islander (18%) and Maori (13%). The meshblock directly north of SH16 has a particularly high proportion of Maori residents (18%). Like other areas in Auckland, ethnic diversity has increased markedly since 1996 - there has been a decrease in the proportion of European residents in these meshblocks, and a consequential increase in the proportion of Asian and Pacific Island residents.

The majority of households within Sector 1 are one-family households. However, there are a significant number of single-person households (24%) within this Sector in the Edmonton CAU (on the southern side of SH16) and Matipo CAU (on the northern side of SH16). The majority of people living within the Sector 1 area own/partly own, their own home (with little change in home ownership rates since 2001). Concentrations of Housing New Zealand properties are relatively low in Sector 1, with properties lightly scattered in all CAU's and some small areas of concentration in the northern areas of the Te Atatu Peninsula. There is a WCC pensioner housing unit close to the Te Atatu Peninsula town centre. Deprivation rates<sup>26</sup> are similar between the north and south of SH16 (as shown in Figure 5-9), with a trend of lower rates of deprivation towards the eastern coastal area of the Te Atatu Peninsula. The CAU's of Matipo, Durham Green and Edmonton hold a deprivation rating of 7, Te Atatu Central holds a deprivation rating of 6 and Wakeling holds a deprivation rating of 5. Deprivation ratings have remained relatively constant since 1996, with variation being limited to +/-1 for each CAU.

Within this area there are two meshblocks that will be particularly affected by the Project through the planned property acquisition (see Figure 5-9). Immediately north of SH16, the meshblock encompassing Titoki Street has a deprivation rating of 7, indicating a relatively high rate of deprivation which is only slightly higher than the surrounding area. South of SH16, the meshblock where most full property acquisition is proposed has a deprivation rating of 6, which is generally on a par with or slightly lower than the surrounding area. Meshblocks south of SH16 that are affected by partial property acquisition, or more limited property acquisition, have deprivation rankings of between 5 and 8, as shown in Figure 5-9.

The Te Atatu Residents and Ratepayers organisation is an active group in Sector 1, but the group has not (to date) indicated an interest in providing feedback on the Project. Consultation and interviews have suggested that there is a relatively low level of interest/awareness of the Project among residents living in Te Atatu South and the Te Atatu Peninsula. Of those residents who were aware, there is generally high level of support for the

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<sup>26</sup> The Deprivation index is explained more fully in Appendix E. It is a composite of nine Census variables that provide an 'indicator' of relative material and social deprivation, using a scale from 1 - 10 (with 10 representing the most deprived 10% of areas in New Zealand).

Project (given the important connectivity role that SH16 plays for local residents), provided that impacts are adequately mitigated.

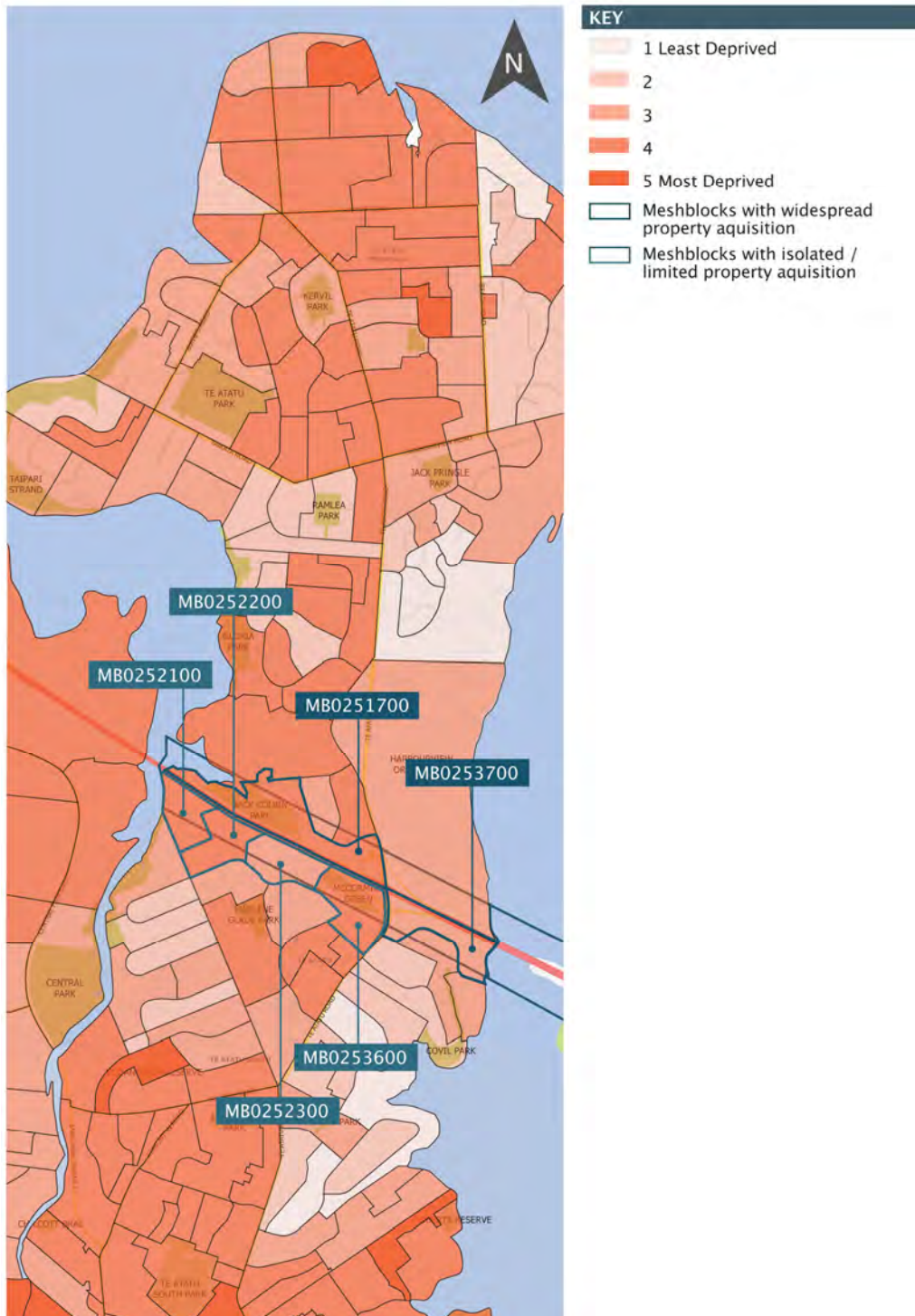


Figure 5-9: Deprivation in Sector 1 (2006)

## Educational Facilities

Rutherford Primary School is a state primary school in the Te Atatu Peninsula, which had a roll of 237 students in 2009. The 2009 school decile rating was 5, indicating that its roll sits around the middle range with respect to the proportion of students from lower socio-economic communities. Flanshaw Road School, another state primary school, is located south of SH16. In 2009 the school had a roll of 333 students and a decile rating of 5, indicating that its roll also sits around the middle range with respect to the proportion of students from lower socio-economic communities. The inclusive zoning of these primary schools provides another indicator of the maintenance of a single community between the north and south of SH16. Anecdotally, it is understood that the catchment for each school is drawn from the wider Sector 1 environment.

Rutherford College is a state secondary school with a large roll of 1,301 students in 2009. The school zone extends throughout Sector 1, with approximately one third of students living north of SH16 (in the Te Atatu Peninsula), and two thirds living on the southern side of SH16. Consequently, a significant number of students and parents cross the Te Atatu Interchange each day when travelling to and from school. Student use of the Te Atatu Interchange underpass is encouraged for traffic safety reasons. In 2009, the school decile rating was 6, indicating that its roll sits just above the middle range with respect to the proportion of students from lower socio-economic communities. The school's main issue with the Project relates to traffic impacts on the Te Atatu Interchange, both during and post construction, and the delays this may cause for students and parents. Rutherford College also hosts community education classes, and the Te Kura Kaupapa Maori o Te Kotuku School (including Kohanga Reo), which is a state primary school teaching exclusively in the Maori language. This school had a roll of 29 students in 2009 and a decile rating of 3, indicating that its roll sits below the middle range with respect to the proportion of students from lower socio-economic communities. There is no zone scheme in place at the primary school.

Te Puna Reo O Manawanui Early Childhood Centre is a childcare facility (kohanga reo) aimed at Maori children, located on Titoki Street directly adjacent to SH16. The centre had a roll of 30 students at their last Education Review Office (ERO) Report in 2007. During communications with the centre in 2009, no specific concerns were raised in relation to the Project.

Other early-childhood educational facilities north of SH16 include the Te Kotuku Kohanga Reo (discussed above), and Rutherford Preschool (both located in the vicinity of Rutherford College), and Funtimes Childcare, located further north in the Te Atatu Peninsula. South of SH16, the Flanshaw Early Childhood Centre and the Viti Centre Preschool provide early childhood education services for the surrounding local population.

## Reserves and Recreation Areas

There are a number of reserves, open space and recreation areas located within Sector 1. Jack Colvin Park (adjacent to SH16 on the northern side of the motorway, with access from Titoki Street) is a significant recreation resource in the area which is used for both passive and active recreation. The park is approximately 4ha in size and contains two formal sports fields which are used year-round for rugby league by the Te Atatu Rugby League Club and the Auckland Rugby League Club. The sports fields are used during the summer and winter seasons, and are booked for a maximum of 25 hours per week during the summer. During the winter season, the fields are used in the evening and on the weekends to their maximum capacity. The clubs also



make use of the area beside the sports field under the lights for regular sports practice. The park contains the Te Atatu Rugby League clubrooms, a car park and bench seating located along the southern side of the sports field. Jack Colvin Park is well used by students attending local schools, in particular students of Rutherford College. There is a small section of land on the far side the park which is currently inaccessible to the public (and would require the creation of a bridge to access).



**Figures 5-10 and 5-11: Jack Colvin Park**

McCormick Green is a smaller local reserve of approximately 1.4ha in size, located between SH16 and Royal View Road on the southern side of the motorway (access is from McCormick Road). The Northwestern Pedestrian/Cycle Way runs along the southern boundary of McCormick Green, adjoining SH16. The reserve provides passive recreation opportunities and does not contain any recreation facilities.

Harbourview Orangihina Park is a significant area of open space in Waitakere City (approximately 83ha), located on the northern side of SH16.



**Figure 5-12: Harbourview Orangihina Park**

The southern part of the park (adjoining the Te Atatu Interchange) is identified within the Reserve Management Plan (RMP) as being the only area within the park used for formal activity. This part of the park is currently fenced off from public use and is leased to the Te Atatu Pony Club for private horse riding/events. This area of the park has also been identified by the RMP as a potential location for a public transportation facility, and by the District Plan as a location for a future marae. The northern part of the park has been set aside as a scenic reserve for passive recreation and is open to the public. This part of the park provides access to the CMA. Much of the park provides wide views of Auckland city.

The Te Atatu Boating Club (located on Bridge Avenue) provides a boat launch, clubhouse, maintenance shed and dinghy pontoons. Almost 650 families belong to the club, which are attracted from a relatively wide catchment. The club's main matter of interest in the Project relates to the maintenance of the Whau River navigation channel.

The Henderson Creek walkway (which is also used by cyclists) runs under SH16 over the Henderson Creek and provides public access to the CMA. This walkway can be accessed from a number of locations within Te Atatu.

### **Travel Patterns and Community Linkages/Connections**

SH16 is a vital transport link for Te Atatu/Te Atatu Peninsula residents to access other areas of Auckland in the west, east, north and south. In addition to the road network, there are a number of other transport modes which provide community linkages and connections (including pedestrian links). The Northwestern Pedestrian/Cycle Way runs alongside SH16, through McCormick Green and then connects into the local road network. The Old Te Atatu Road Cycleway and the Te Atatu Road Cycleway also provide important connections. Auckland Regional Transport Authority (ARTA) monitoring indicates that these connections are used by between 100 - 350 cyclists per day and that their use has increased significantly over the monitoring period between 2007 and 2009 (generally by 30-50%). The most widely used cycle connection in the area is the Northwestern Pedestrian/Cycle Way, with many people using the link as a 'commuter route' to and from the direction of the Auckland CBD.

Formal pedestrian linkages are provided through the Sector 1 study area, with important linkages being those which provide north-south access over the Te Atatu Interchange. There is a shared pedestrian/cycle path along both sides of Te Atatu Road over the interchange, and also a pedestrian underpass beneath the interchange. The underpass is used by a number of school children during school traffic peaks, most of whom are pupils of Rutherford College (College policy dictates that the underpass should be used by students when crossing the interchange to get to and from school, for traffic safety reasons). Anecdotal evidence, mostly from people at Project open days, suggests differing opinions in regard to this underpass, with some negative comments received relating to CPTED concerns, specifically around the lack of 'surveillance' in the area. Other comments favoured the use of the underpass and indicated that the alternative level crossing option has pedestrian safety implications associated with the danger of cars running red lights and people not using the crossing signals.



**Figure 5-13: Te Atatu Interchange Underpass**

There are two main bus services in the area (as shown on Figure 5-2 earlier in the report): services to and from Auckland city, and services between Te Atatu South and the Te Atatu Peninsula. Bus services to and from Auckland city run all day and particularly cater for work commuters (with 35 peak services), but also provide weekday and weekend services with less focus on peak time travel. The bus service connecting the northern and southern areas of SH16 further indicates the social connection between these areas.

Vehicle ownership rates are high within the Sector 1 community, with 90-94% of households having access to at least one vehicle, and 13-20% having access to three or more vehicles. Vehicle ownership rates have steadily increased across the Sector since 1996, with a trend towards more households having access to two or more vehicles (and a consequential decline in the number of households having access to no or one vehicle). Whilst there is a high frequency of bus services into the CBD during the week, 2006 Census data shows that the Sector 1 area has the highest proportion of people who drive or are driven to work (rates have been steadily increasing since 1996). Within the Wakeling CAU, 77% of residents drive to work, closely followed by Te Atatu Central and Durham Green (76% of residents). Only 3-5% of residents reported taking public transport to work (considerably less than the 8% average of the wider study area. It is noted that the proportion of local residents commuting to work by public transport has fallen since 1996), and 2-5% cycled, walked or jogged (which may be reflective of the longer travel distances between people's workplaces). The proportion of residents working in Auckland city and Waitakere city are roughly equal (generally between 40-50% in each destination), with slightly more working in Auckland city. Between 10-14% of residents living in the Sector 1 area worked in the Auckland CBD.

## 5.3 Sector 3

### Overview

Sector 3 includes the Rosebank Peninsula industrial and business area, a regionally significant employment hub. Rosebank's history is of medium to heavy intensive industry dominated primarily by the manufacturing industry, and the area continues to remain an industrial hub. However, commercial buildings catering to predominantly

office activity are developing in the area. The industrial area is zoned for Business 5 (low to medium intensity industrial activity) and Business 6 (heavy industrial activity) in the Auckland City Council District Plan.

There are no residential areas or community facilities in Sector 3. However, residential activity does exist in the suburb of Rosebank (to the south of the Industrial Peninsula) and adjacent to the suburb of Avondale. Within this area, there is a relatively high concentration of Housing New Zealand accommodation.

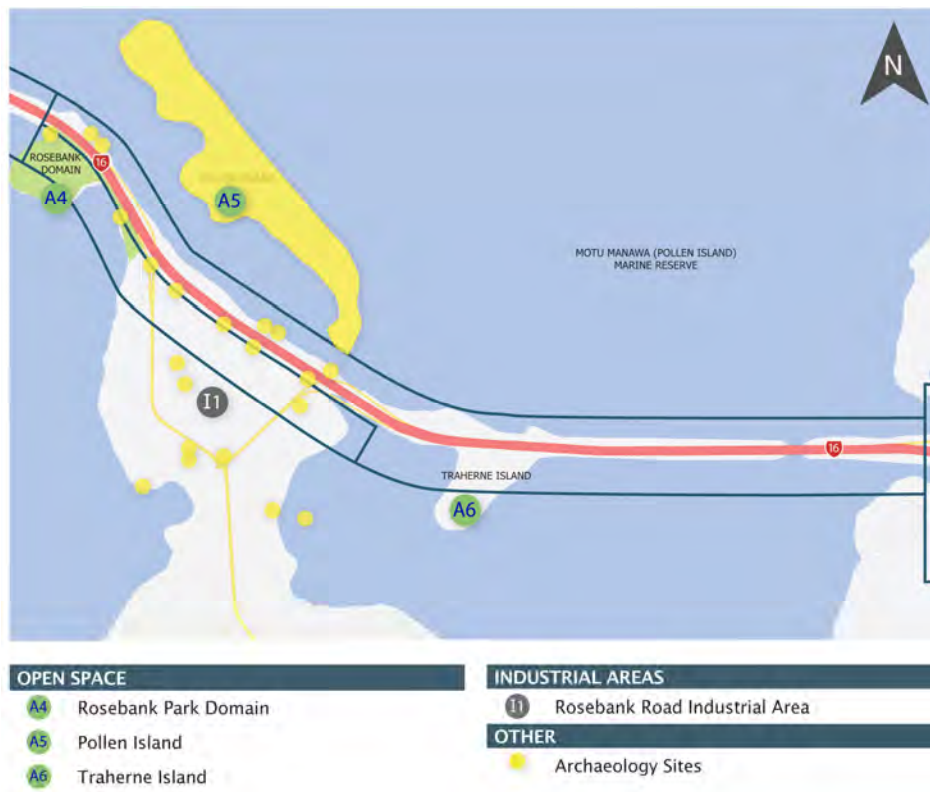


Figure 5-14: Community Infrastructure in Sector 3

The Rosebank Peninsula is the largest employment area in proximity to the study area, with 813 business units employing 8,240 people in 2009, and providing 3% of the City’s total employment. ACC have prepared ‘Rosebank 2030’, which is a business precinct plan which seeks to retain and grow existing industries and to generate additional employment in the area. Consultation with Rosebank Peninsula business operators suggests that different business types had different ‘working populations’ - manufacturing and plant businesses tended to have a higher proportion of their workforce drawn from the local and surrounding area, while service and wholesale trade businesses had workforce populations from a wider Auckland regional catchment. This is reinforced by the 2006 Census data which shows generally 2-4% of the local study area (and 9% and 15% respectively of the immediately adjacent Avondale West and Rosebank CAU’s) worked in the Rosebank CAU.

There are a number of archaeological sites at the northern end of the Rosebank Peninsula (including former Maori settlement areas and middens), though most have been modified/destroyed substantially as a result of historic industrial and motorway development.



### Reserves and Recreation Areas

The Rosebank Park Domain (located directly adjacent to SH16) provides approximately 6.6ha of recreational land which is used almost solely for go-karting and a speedway. The domain is primarily a dirt track with grandstand seating, and is leased to Power Sports Ltd and KartSport Auckland (which had over 100 club racers in 2010). Access to the domain is via a single lane access road off Patiki Road. The domain's easy access from SH16 coupled with the small number of kart clubs within the Auckland Region means that this facility attracts users from a wide catchment area.



**Figure 5-15: Rosebank Park Domain**

Pollen Island and Traherne Island are zoned as open space areas by ACC. Other than by boat, there is no access available to Pollen Island, and limited access to Traherne Island. The Motu Manawa (Pollen Island) Marine Reserve is a national marine reserve. Consultation feedback has indicated that this area is highly valued by a number of people in local and wider regional communities (particularly residents living along SH16 in Sectors 1 and 6), for ecological and environmental reasons.

### Travel Patterns and Community Linkages/Connections

The Northwestern Pedestrian/Cycle Way travels alongside the westbound carriageway of SH16, directly adjacent to vehicle traffic along the Whau Bridge (Sector 2) and Causeway Bridge (Sector 4). ARTA monitoring in 2009 indicated that relatively few users entered/exited the cycleway at Patiki Road (63 daily users, with only a marginal increase from 2008).

There are east and westbound bus services to the Rosebank Peninsula industrial area from SH16, which mainly offer weekday peak trips, providing for commuters working in the area. There are also regular north-south services along the peninsula on both weekdays and weekends.

Consultation by ACC for Rosebank 2030 identified that Rosebank Road is an arterial road for traffic from SH16 travelling to Avondale, Mount Albert, Blockhouse Bay and other southwestern suburbs. A common concern of residents/businesses relates to congestion on Rosebank Road, which causes difficulties for pedestrians crossing the road safely. Peak periods of traffic congestion occur during the morning peak hour from 7:30-9am and the afternoon peak hour 3-5:30pm, the majority of which are considered to be vehicles dropping off children at Avondale College and Avondale Intermediate School.

## 5.4 Sectors 5 and 7

### Overview

For the purposes of describing the existing environment, Sectors 5 and 7 have been combined as the areas are geographically linked and share a number of the same community facilities and infrastructure. Residential activity is the predominant land use in these Sectors, encompassing Waterview and the Unitec residential village on Great North Road (south of SH16) and Point Chevalier (north of SH16). These residential areas are separated by SH16 and the Great North Road Interchange, and represent distinct residential communities. Unitec (described in Sector 6) creates a distinctive identity in the area. The Unitec residential village on Great North Road accommodates approximately 190 students.

The Waterview community typically accesses social and commercial services (eg. medical facilities, retail outlets and libraries) at either Point Chevalier (described as part of Sector 6) or Avondale (described as part of Sector 8), both of which are walkable within around 20-30 minutes from most locations. This movement is also reflected in the frequency of the bus services between these areas (discussed below). Few local shops/services are located in Waterview itself. Of these, the Waterview Superette on Great North Road is well frequented (despite the adjacent three vacant shops on the corner of Alford Street). As well as being a convenience store for local residents, the dairy is an important local food shop for less mobile residents including the elderly.



Figure 5-16: Waterview Superette

The BP petrol station on Great North Road is also well patronised by local residents as well as people driving through Great North Road. There is a small block of five shops on Daventry Street, however during a site visit in 2010 only two of these shops were operating (a laundromat and a takeaway business). These shops have a history as short stay/transient businesses<sup>27</sup> with low occupancy rates observed throughout the ten year history of Project investigations. Overall, these local businesses in Waterview are not considered a major commercial hub for the area, but rather represent small scale local support services. The Point Chevalier centre serves the population living north of SH16. Places of religious assembly are located in Waterview and Point Chevalier, as shown in Figure 5-17 (over the page). Of note, these include the Waterview Methodist Church (which is rented out for community purposes and has been used as a venue for Project open days), and a number of orthodox churches in Point Chevalier. Waterview Primary School and Kindergarten and the Waterview Reserve (discussed below) are particularly important facilities for the Waterview community, given that there are few other community/commercial 'hubs' in the suburb.

There is a significant heritage landscape within the Sector 5/7 environment, associated with the historical importance of the Oakley Creek to both Maori and European settlers. The historic Star Mill site is the most significant area, spanning both sides of Oakley Creek. However, the site currently has no easy public access and is completely screened by vegetation (with archaeological features only able to be observed at close range). Part of the mill site (including the remains of a basalt walled wheel pit, concrete machine bases, a Cornish boiler relating to the tannery, and an iron plate relating to an earlier boiler) are located on a private property in Cowley Street. The Star Mill site is in good condition and has been recognised throughout consultation as an area of cultural importance to the wider SH20 community. North of the Great North Road Interchange, there is a historic basalt drystone wall near the eastbound off-ramp. South of the interchange there are a number of sites relating to Maori occupation along Oakley Creek, including midden, pits and terraces. There are also sites relating to early European industry and farming, including a possible mill site and drystone walls.

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<sup>27</sup> Over the course of the Project, there has been intermittent use of these buildings for shops such as fast food and a dairy.

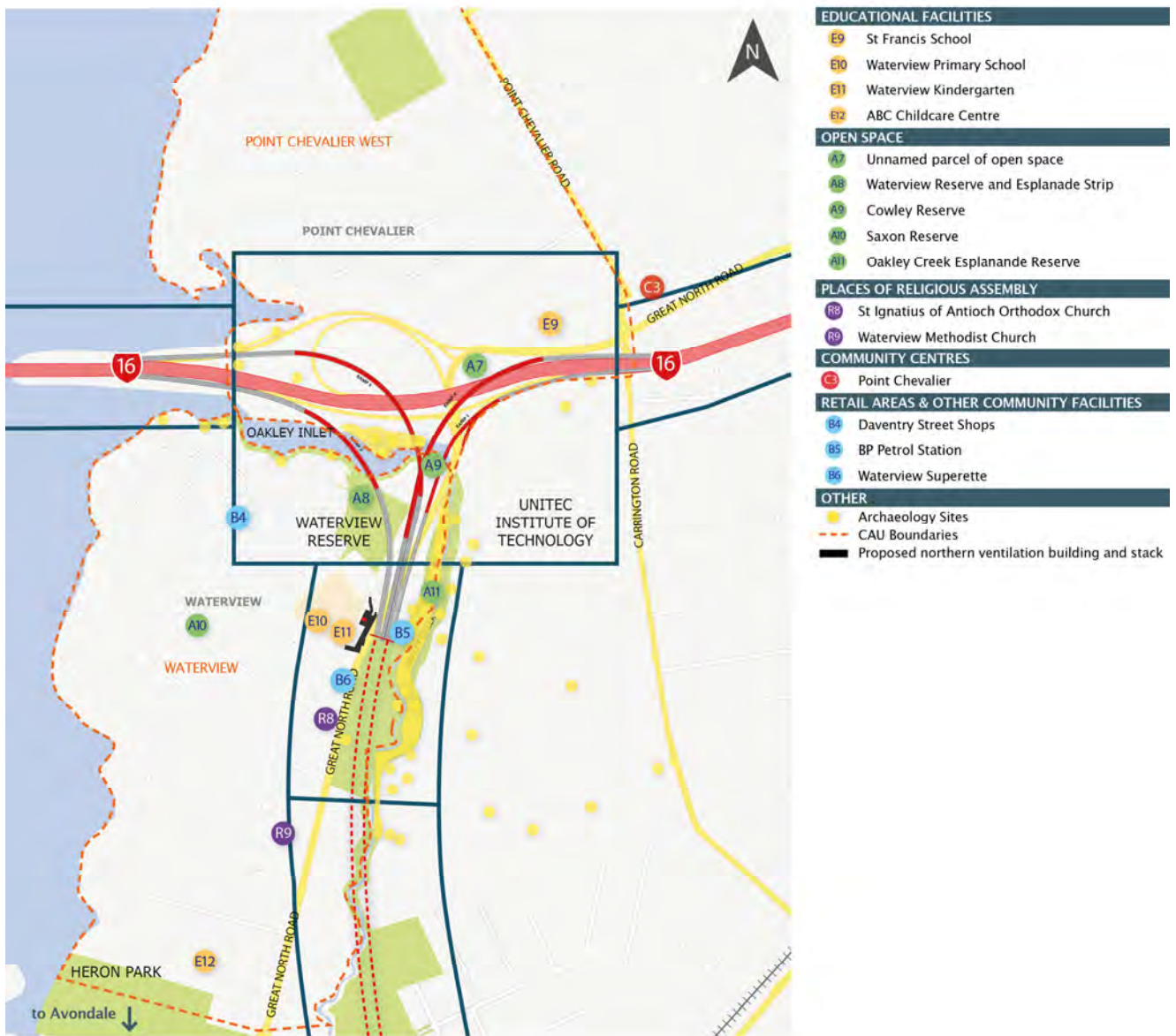


Figure 5-17: Community Infrastructure in Sectors 5 and 7

The ACC Future Planning Framework (FPF) sets out a number of medium and long-term community outcomes/aspirations that the Council wants to achieve by 2030. Of particular significance to Sector 5 Project are the mapped aspirations for Great North Road and SH16 as key road passenger transport routes, the maintenance of cultural heritage sites, and an improved pedestrian/cycle environment along Great North Road (to SH16) and along the Waterview Esplanade Reserve, and an ‘urban forest’/ecological corridor. The FPF takes into account the Project (the former 2008 driven tunnel proposal) and envisages future ‘large site comprehensive development’ in the vicinity of the Project tunnel portal.

**Community**

Overall, the Waterview and Point Chevalier communities<sup>28</sup> are divided by SH16, which has caused a significant distinction and demographic differences between the two communities. There is a trend towards gentrification in Point Chevalier, whereas this trend is not yet evident in Waterview. 51% of dwellings in Point Chevalier West are owned or partly owned (home ownership rates have fallen by around 5% since 2001). Privately rented accommodation makes up 77% of all rented dwellings within western Point Chevalier, with 21% rented by Housing New Zealand (mainly in the area south of Meola Road in Point Chevalier East, and also some properties around Montrose Street north of the interchange). Conversely, Waterview had a lower rate of home ownership (40%, an approximate 5% decline from 2001) and high rate of Housing New Zealand accommodation (as shown in Figure 5-5 earlier in the report). Between 2001 and 2006, the proportion of Waterview residents living in Housing New Zealand accommodation increased from 40-46%. The two highest areas of concentration are located in northern Waterview (notably along Herdman Street, Daventry Street and Oakley Avenue), and in the south-western area of the suburb (around Tutuki Street). Within the three meshblocks directly affected by property acquisition, 88% of those who were living in rented accommodation were in Housing New Zealand properties in 2006 (only 21% of residents owned or partly owned their home).

Residential mobility is relatively high in both Waterview and Point Chevalier West. 23% of people in Point Chevalier West and 28% in Waterview had lived in their current place of residence for less than one year (at the time of the 2006 Census), and 56% and 60% (respectively) for less than four years. Waterview had a very low proportion of residents (3%) that had lived in their current dwelling's for more than 30 years. For both CAU's, single family households were the most common household type. Point Chevalier West had a relatively high proportion of single person households (30%), which probably reflects the high proportion of people over the age of 65 (22%) who live in this area.

Ethnic composition of Point Chevalier West is predominantly European (78%), with 49% of its residents having resided in New Zealand for 20 years or more. This differs from the ethnic composition of Waterview, where the predominant ethnic groups were European (49%), Pacific Islanders (24%), Asian (18%) and Maori (11%), and the majority of its residents (55%) having resided in New Zealand for less than 10 years. Predominant ethnic groups in the Waterview meshblocks affected by property acquisition are European (51%), Pacific Islander (32%), and Maori (13%). 100% of meshblock 0385800 will be affected by property acquisition. 162 people live in this meshblock, 61% of whom are Pacific Islanders 36% European and 13% Maori. Ethnic diversity has increased slightly (but not substantially) since 1996 - during this time there was been a slight decrease in the proportion of European and Pacific Island residents in these meshblocks, and a slight increase in the proportion of Asian residents.

Overall, Waterview had a relatively high rate of material deprivation (see Figure 5-18 over the page) compared with the Auckland region as a whole (with a deprivation rating of 9, which has remained constant since 1996).

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<sup>28</sup> Comprised of the Waterview and Point Chevalier West CAU's.

The three meshblocks in Waterview most affected by property acquisition all have a deprivation rating of 9 or 10, representing the most deprived 10-20% of residents in the country (and consequently a particularly vulnerable population in terms of property acquisition). Conversely, Western Point Chevalier had rate of material deprivation comparable with the wider Auckland region (with an NZDep2006 ranking of 5). These deprivation ratings cited have remained constant since 1996.

Residential amenity and the sense of 'quiet-ness' in Waterview was identified as particularly important in Project consultation. Generally, residents in Waterview have expressed the highest levels of opposition to the Project, though it is important to note that these views are not held uniformly across the suburb (evidenced in consultation and the in-depth interviews). A number of "SH20 Tunnel or Nothing" signs affixed to private property were observed in Waterview during site visits in 2008-2010, indicating opposition among some residents to the Project being constructed as a surface motorway. The 'Tunnel or Nothing' group (led out of Waterview) opposes the Project based on environmental concerns (air, light, noise and water pollution), community impacts (including the loss of homes and disruption to the Waterview community), and potential impacts on archaeological sites. The Northwestern Community Association is a residents group in Waterview which has opposed the Project, citing concern over a loss of open space and amenity, impacts on schools, air pollution, noise, ecological impacts and the potential degradation of archaeological/heritage sites. Living Communities, another local community group, has expressed concern over impacts on noise, air quality, environmental management, parks/reserves and property devaluation. The Friends of Oakley Creek are primarily concerned about impacts on ecology, loss of open space, amenity, noise and archaeology.



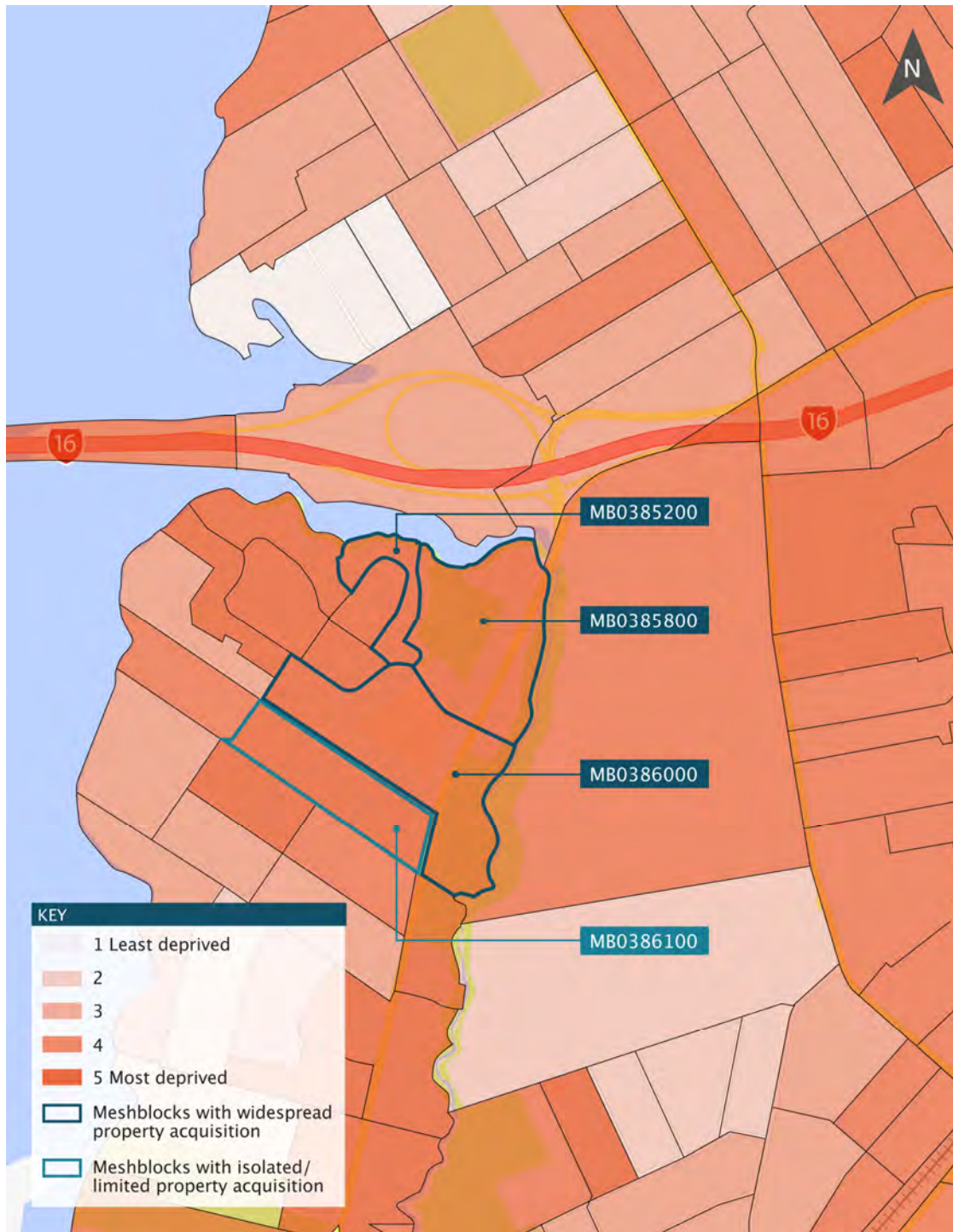


Figure 5-18: Deprivation in Sectors 5/7 (2006)

**Educational Facilities**

Waterview Primary School is a state primary school located on Oakley Avenue, with a roll of 144 students (current as at July 2010). As shown in Figure 5-19, the school roll has generally been decreasing since 1990 (232 students), with a small increase recorded over the last few years (from 132 students in 2007 to the current roll of 144 students).

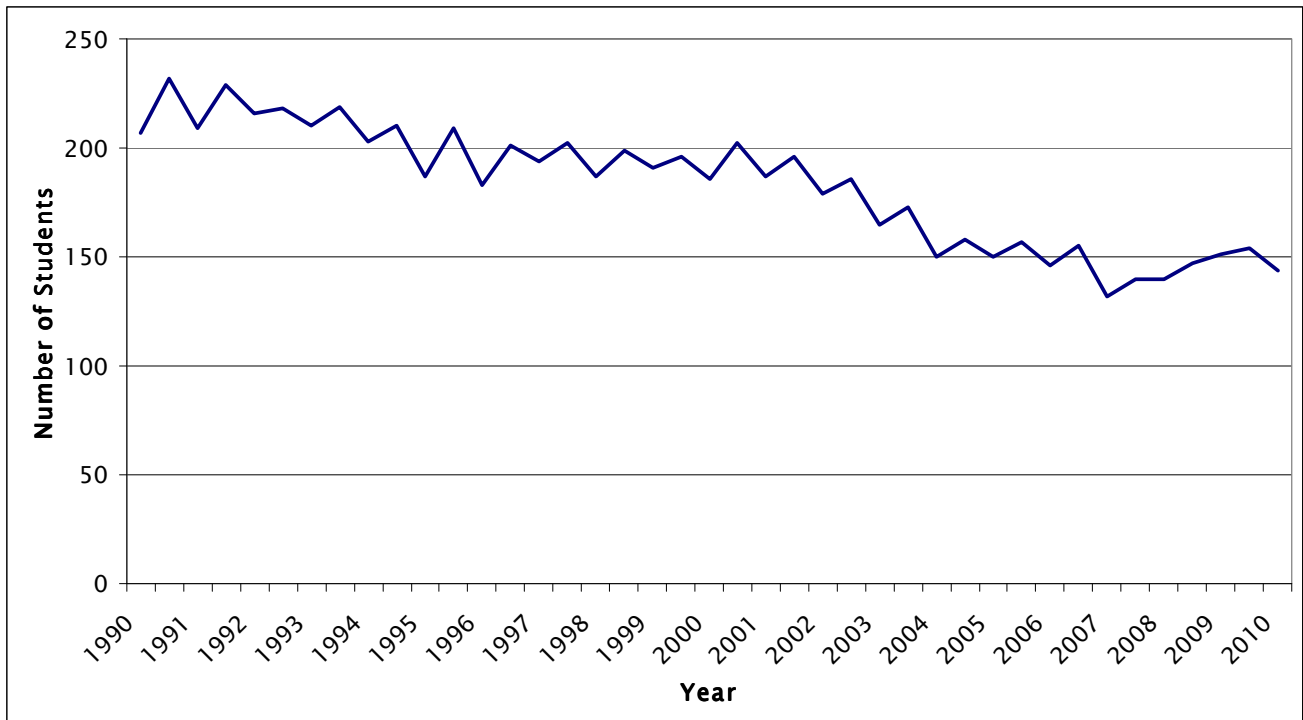


Figure 5-19: Waterview Primary School Roll 1990 - 2010

The school reports that its roll has fluctuated as a result of the Project (since investigations commenced in 2000), including periods of decline during Project detailed design investigations and media coverage, and roll increases at times when the Project was put on hold.

The school has a diverse student population, with students from more than ten nationalities in attendance. Nearly half of the student population are Pacific Islanders and approximately 20% of the students are Maori. Many of the children have English as a second language. There are several families who have long associations with the school, and some students are second or third generation attendees. Around 70% of enrolments are Waterview Kindergarten students, and an estimated 50% of the student population is drawn from residents living in Housing New Zealand accommodation. Waterview Primary had a 2009 decile rating of 2, indicating the school has a high proportion of students from lower socio-economic families. While the school does not currently have a zone, it has a relatively contained student catchment of Great North Road (to the east), the coast (to the west), SH16 (to the north) and the Great North Road/Blockhouse Bay Road (to the south). The school is an important community facility for Waterview, for example, it is the site of a new organic community garden to be used by the surrounding community. The school hall is rented out to community groups and organisations outside of school hours, including recreational groups such as Taekwondo, and various cultural groups. The Tongan Harvest-Time Church uses the hall as a worship space, and the hall has also been used in



the past as a voting station during government elections. Waterview Primary School has expressed concern over the Project, particularly in relation to the effects on the wider Waterview community from property acquisition, loss of open space and environmental impacts, potential effect on school roll, construction impacts, and air quality/potential health impacts.

Waterview Kindergarten is located adjacent to Waterview Primary School on Herdman Street, and had a roll of 62 students in July 2009 (around 85% of capacity), with around 30 children attending each kindergarten session. The kindergarten reports that like Waterview Primary School, its roll has dropped as a result of the Project (anticipation of impacts to come, and as a result of early property acquisition). Ministry of Education figures show that the current roll is similar to the roll ten years ago. During this time period, the kindergarten has previously been at capacity, with families on the waiting list. The kindergarten draws many students from families which also have children attending Waterview Primary School. ERO reports from 2000-2010 outline that the kindergarten has a high incidence of transience and a significant number of children attending whose first language is not English. Approximately 29% of the students are Pacific Islanders and 23% are Maori, making up a significant proportion of the total roll. The report also outlines that the kindergarten is community-minded, involving the children in community projects. The kindergarten is focused on promoting the health and wellbeing of its students and has programmes to encourage health and well-being at home as well as during class. The Auckland Kindergarten Association and Waterview Kindergarten Parents Association have expressed concern over potential impacts of the Project on the kindergarten, including potential health impacts from air discharges, disruption to the Waterview community and the potential impact on the kindergarten roll.

A 2009 survey by Captivate Limited of Waterview Primary School and Kindergarten parents and caregivers identified that typical modes of transport for getting children to kindergarten were driving (67% of those surveyed drove on some days), followed by walking (42% of those surveyed walked on some days). A number of children walk up Great North Road and cross at the signalised crossing at Herdman Street, when travelling to/from school.

St Francis School, located in Montrose Street just north of SH16, is a Catholic state-integrated primary school. The school had a roll of 221 students and a decile rating of 7 in 2009, indicating the school has a relatively high proportion of students from mid to higher socio-economic families. The school is popular and the roll is close to reaching its capacity. There is no zone and the school catchment is wide, with many students and staff living in the Point Chevalier/Western Springs/Westmere/Kingsland areas, approximately 30% from Waterview/Avondale/Blockhouse Bay/Mt Albert/Owairaka/Green Bay, and approximately 15% from Te Atatu/ Te Atatu Peninsula. The waking school bus down Point Chevalier Road is a popular means of transport to and from school. The school is affiliated with the St Francis Catholic Church (located adjacent to the school), and the junior school walks to the Point Chevalier library each week. The school has expressed concern over the potential noise, traffic and air quality impacts of the Project.

The Waterview ABC Childcare Centre is located in Fairlands Avenue, further south in the suburb. This centre had a roll of 48 students in 2008. There are also a number of childcare centres located in Point Chevalier which are used by some Waterview residents (discussed in Sector 6).

### **Reserves and Recreation Areas**

The most significant areas of open space in Sectors 5 and 7 are the Waterview Reserve and Esplanade Strip, and the Oakley Creek Esplanade Reserve. The Waterview Reserve and Esplanade Strip provide active and passive recreation opportunities for Waterview residents (particularly those residents living in the north of the suburb where access to other parks and reserves is more limited). The combined park and esplanade reserve is approximately 4.1 ha in size. Facilities include a senior football field, basketball court, volleyball court, degraded tennis/netball courts, toilet block and a playground. The sports field is used year-round as a soccer field in the winter and a league field in the summer. The esplanade strip stretches along Oakley Creek between the main park area and the western end of Oakley Avenue (though this is not yet a continuous walkway).



**Figures 5-20 and 5-21: Waterview Reserve**

The Oakley Creek Esplanade Reserve and walkway is approximately 9.6ha in size and located on the eastern and western reaches of Oakley Creek. The reserve is used for passive recreation and was identified in consultation as highly valued by the local community (in particular the Oakley Creek waterfall, which is cited as Auckland City's largest urban waterfall). There are a number of picnic table facilities along the walkway route. The community has identified the esplanade reserve as having amenity/aesthetic, community, linkage and ecological/wildlife values. The Oakley Creek Walkway is located within the Oakley Creek Esplanade Reserve, and consultation and the well-worn tracks indicate that the walkway is well used. Children often swim in the waterfall area. Oakley Creek (including its accessibility, amenity and ecological integrity) was been identified as important to the identity and culture of the local area by a number of residents in consultation.



**Figures 5-22 and 5-23: Oakley Creek Esplanade Reserve**

Saxon Reserve (see Figure 5-24) is a small neighbourhood Reserve of approximately 2,500m<sup>2</sup> with a children’s playground, located centrally within Waterview on Saxon Street. The reserve is well-used by members of the Waterview community.



**Figure 5-24: Saxon Reserve**

Other small open spaces in Sectors 5 and 7 include Cowley Reserve, which is an esplanade reserve of approximately 200m<sup>2</sup> directly south of the Great North Road Interchange. There is no public access to Cowley Reserve, nor is there a discernable distinction between the SH16 designation and reserve area. An unnamed 1.6ha parcel of open space exists between SH16 and Great North Road, in Point Chevalier. The Northwestern Pedestrian/Cycle Way runs through the middle of this open space. Again, there is no discernable distinction between the SH16 designation and reserve area.

Heron Park, located in the south of Waterview, provides passive recreation opportunities for Waterview (particularly those living in the south of the suburb) and Avondale residents.

There are currently no formal public access facilities to the coastal margin in Sectors 5/7 (eg. boat ramps), however the link along the coast (the Waterview Esplanade Reserve) provides passive recreation opportunities around the Waterview Inlet and along the coastal boundary.

**Travel Patterns and Community Linkages/Connections**

SH16 is an important transport link to other areas of Auckland. In addition to the local road network, there are a number of other transport modes which provide community linkages and connections (including pedestrian links). The Northwestern Pedestrian/Cycle Way is a significant link that runs through the study area alongside SH16. There is also a shared walking/cycle path running along Great North Road which connects to the Northwestern Pedestrian/Cycle Way. ARTA monitoring indicates that cycleways in the area are well used, with 160 - 235 daily movements on the Northwestern Pedestrian/Cycle Way (where it meets Great North Road) and along Great North Road, Carrington Road and Point Chevalier Road. The Great North Road overbridge (Figure 5-25) forms part of the Northwestern Pedestrian/Cycle Way, and provides a pedestrian connection over the busy Great North Road.



**Figure 5-25: Great North Road Overbridge**

The Oakley Creek Walkway provides a pedestrian link from the Oakley Creek Esplanade Reserve, connecting Waterview with Springleigh and providing access to Unitec and Phyllis Reserve (crossing Oakley Creek via a footbridge). The walkway terminates in Harbutt Reserve (Sector 8).

Passenger transport routes serving the Sector 5/7 area use SH16 and the local road network. Services along SH16 provide routes to and from West Auckland and to and from the Auckland CBD, catering in particular for peak time commuter travel. Peak and non peak services also operate along Great North Road, through to Point Chevalier past the Great North Road Interchange. There is a regular route between Point Chevalier and the Auckland CBD.

The majority of Waterview and Point Chevalier West residents worked in Auckland city (77-78%), with 19% working in the Auckland CBD. This was followed by residents working locally (9% within the same CAU for



Waterview, and 12% in Point Chevalier West). Waitakere and Manukau were also common work destinations for local people in both areas (with 11% of Waterview residents working in Waitakere). Most people in the two areas drove or were driven to work (69-71%), which is on a par with the figure for the wider study area and Auckland region. The next most common mode of transport was public transport (9% of Waterview residents and 7% of Point Chevalier West), followed by walking/jogging/cycling by a further 4-5% of residents on both sides of the motorway. Travel to work modes have remained relatively constant in Waterview between 1996-2006, while in Point Chevalier South the proportion of residents driving to work has declined, with a consequential increase in public transport use over this period. Vehicle ownership rates in both areas are relatively low, with 12% of Waterview and 14% of Point Chevalier West households not having access to a vehicle. However, vehicle ownership rates have steadily increased in both Waterview and Point Chevalier South since 1996, with a trend towards more households having access to two or more vehicles (and a consequential decline in the number of households having access to no or one vehicle).

## 5.5 Sector 6

### Overview

Sector 6 covers the residential areas in Point Chevalier directly north and south of SH16. As with Sectors 5 and 7, Unitec creates a distinctive identity within Sector 6, as primary access to the site is via Carrington Road. The Point Chevalier town centre, located on Great North Road, serves local Point Chevalier residents as well as neighbouring communities including Waterview and Mt Albert. Key facilities in this area include a library, medical and dental services, police station, supermarket and other shops. Places of religious assembly are located in the wider Point Chevalier area to cater for the religious practices of local residents.



Figure 5-26: Point Chevalier Town Centre

The Point Chevalier Community Centre is located on Huia Street, just north of SH16. The community centre includes several important community facilities, including an opportunity shop, a resident Justice of the Peace, Plunket, a regular school holiday programme, various community and recreation groups, and the monthly Point Chevalier Market and Craft Day. There are 4 separate rooms available for hire within the centre. This is an important facility for the people of Point Chevalier and Waterview, especially in its role as a provider of 'wellbeing' activities, such as Plunket. Further along Great North Road, the Western Springs Hall (located within

the Western Springs Gardens) provides another community facility. Work was undertaken in 2005 to make this venue fully accessible for all people, including full disability access and more carparking. The venue is popular for weddings and social functions.

Also within the area, there are a number of specialised medical/rehabilitation services clustered on Carrington Road, many of which provide specialty services and are recognised as facilities of regional importance. The Mason Clinic is an important medical facility of note, which services a wider sub-national community<sup>29</sup>. This clinic is a high security inpatient forensic psychiatric facility run by the Waitemata District Health Board, providing care for people with intellectual disability who are convicted or charged with offences. The operators of the clinic have raised specific concerns about the Project over its history. These include early concerns of physical disruption to the site, and more recently have focused on health concerns for residents during construction (eg. noise) and once operational (eg. as a result of the ventilation stacks), given its proximity to the proposed SH20 route along Great North Road. On the eastern side of Carrington Road, other facilities include RehabPlus (a service providing rehabilitation to people admitted to hospital following an illness, accident or injury), the Auckland Regional Alcohol and Drug Service (providing alcohol and drug detoxification services, including a walk-in clinic and a 10 bed inpatient facility with 24 hour medical supervision), the Buchanan Rehabilitation Centre (providing a specialist 40-bed mental health, recovery focused rehabilitation service for long term stays, the average being around 18 months), the Methadone Treatment Service (providing treatment and withdrawal programmes for people with opioid dependencies), and the ADHB Community Neurobehavioural Service (providing a psychological service for people with brain injuries who experience emotional/behavioural difficulties relating to that injury). These facilities are important to the wellbeing of people from across the Auckland region as a whole. Community infrastructure and areas of interest in Sector 6 are shown in Figure 5-27.

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<sup>29</sup> The Mason Clinic has a catchment area from the Bombay Hills in the south to the top of the North Island (for general mental illness) and from Taupo to the top of the North Island (for offenders with an intellectual disability).

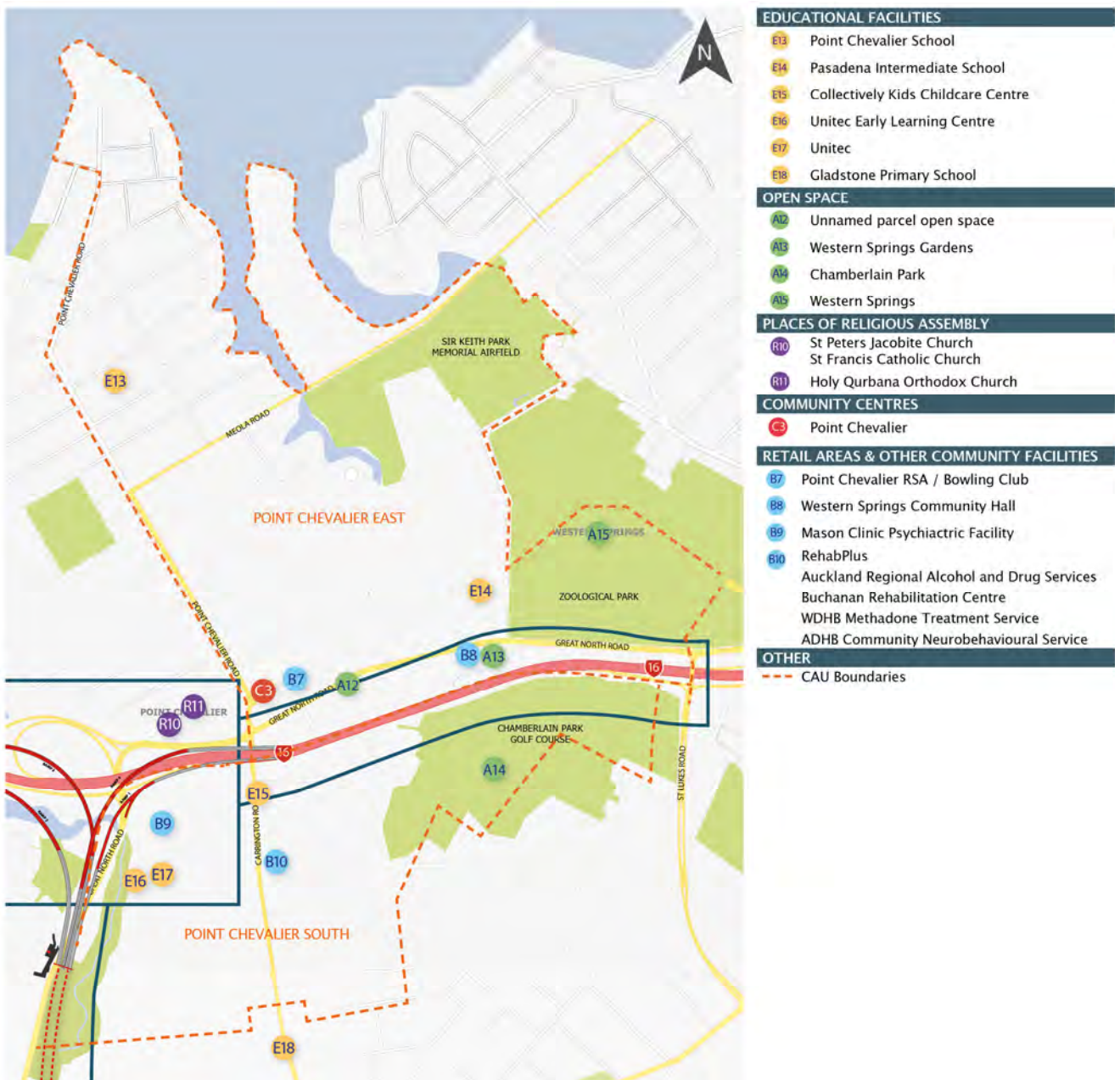


Figure 5-27: Community Facilities in Sector 6

The ACC FPF sets out future aspirations for Point Chevalier, including the retention of Point Chevalier as a local centre serving the daily and weekly needs of the surrounding community, improved pedestrian cycle networks crossing SH16, and key passenger transport routes along SH16, Great North Road, Carrington Road and St Lukes Road.

## Community

Housing New Zealand accommodation in Point Chevalier is clustered in the area south of Meola Road in Point Chevalier East. There is also a small cluster of properties east of Carrington Road, north of Gladstone Primary School. There is a Housing New Zealand pensioner housing facility located on Parr Road South (directly below SH16).

The predominant ethnic groups in Sector 6<sup>30</sup> are European, followed by Asian, Pacific Islander and Maori. Some 44% of residents in Point Chevalier East have resided in New Zealand for more than 20 years, which contrasts with Point Chevalier South where 68% of residents have lived in New Zealand for less than 10 years. This reiterates the distinct communities in this area, caused in part by SH16 and Great North Road. Home ownership rates vary between 41% (south of SH16) to 50% (north of SH16), and with ownership rates having dropped slightly in both areas. Consistent with trends for the Auckland region, home ownership rates have fallen since 2001. In 2006, the area south of SH16 was relatively more deprived than the area to the north (according to the NZDep2006).

## Educational Facilities

Unitec is a major activity centre in the study area, providing tertiary education and community education programmes. The Carrington Road campus covers 55ha and offers a range of facilities including learning facilities, cafes and the Unitec Early Learning Centre (see below), creating a distinctive activity in the community. Unitec has a student catchment from around the Auckland region, although a number of students reside in Mt Albert, Waterview, Point Chevalier and Avondale.

Located north of SH16 adjacent to the Western Springs Gardens, Pasadena Intermediate School is a state school with a roll of 276 students in 2009. There is no zone scheme in place at the school. The school decile rating was 6 in 2009, indicating that the school sits just above the mid point with respect to the proportion of students from lower socio-economic communities.

Point Chevalier Primary School is a state primary school located in northern Point Chevalier, with a large roll of 615 students in 2009. The school decile rating was 8 in 2009, indicating that the school has a relatively high proportion of students from higher socio-economic communities. The school zone covers residents living in Point Chevalier, but if there are places available the school may accept out-of-zone enrolments. As such, the school also has a small number of students from the neighbouring suburbs of Waterview, Mt Albert and Point Chevalier South (south of SH16).

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<sup>30</sup> Comprised of the Point Chevalier East and Point Chevalier South CAU's.



Opposite Unitec, Gladstone Primary School is a state primary school which had a large roll of 718 students in 2009 and has implemented a zone (which includes Springleigh and parts of Mt Albert). The school had a decile rating of 8 in 2009, indicating the school has a high proportion of students from high socio-economic families.

There are a number of early childhood centres in Point Chevalier and also within Unitec. The Unitec Early Learning Centre is the main childcare centre located on the Unitec campus, with a roll of 52 students plus a further 38 students in the Pukeko Whare unit. The Te Puna Reo o Wairaka childcare site in Unitec had a further roll of 29 students. The Collectively Kids Childcare Centre is located on Carrington Road north of Gladstone Primary School, and had a roll of 49 students in 2008. Childcare centres in Point Chevalier include the Learning at the Point Community Kindergarten (Huia Road) and the Stylee Kids Ahead Early Learning Centre on Point Chevalier Road.

### **Reserves and Recreation Areas**

Chamberlain Park Golf Course borders SH16 on the southern side of the motorway. The public 18-hole golf course is one of three in Auckland city and presently has around 540 fee paying members.

Directly above Great North Road, Western Springs provides a significant recreation resource serving a relatively wide catchment in north-west Auckland city. The park has a well-developed network of footpaths and walking tracks, and also picnic tables and a children's playground. The lake is a key attraction in the park. On the opposite side of Great North Road, the Western Springs Gardens is an area of open space zoned land between SH16 and Great North Road, which contains businesses (including Cobb n' Co and the Auckland Horticultural Centre), the Western Springs Community Hall (described above) and a public carpark.

Also on Great North Road there is a parcel of vacant land, part of which is designated for open space purposes. This area is not presently used or signposted as a recreation area. The site is overgrown, fenced off from the public and has "for sale" signs indicating the site's suitability to be developed as a future residential site.

The Point Chevalier RSA/Bowls Club, located on Great North Road (adjacent to SH16), has a regular membership and provides further recreational opportunities for local residents.

### **Travel Patterns and Community Linkages/Connections**

SH16 is an important transport link to other areas of Auckland. The Northwestern Pedestrian/Cycle Way runs alongside SH16 and is predominantly 'off-road' in this area, with the exception of a small section on Sutherland Road. There is also a pedestrian and cycle link across Carrington Bridge, over SH16, which provides access between Point Chevalier and Unitec/Mt Albert/Waterview and is well used by pedestrians. ARTA monitoring indicates that the St Lukes Road section of the Northwestern Pedestrian/Cycle Way is well used (with 260 daily movements recorded in 2009). There is a shared bus and cycle lane along Great North Road, east of Point Chevalier Road.

Passenger transport services connect Point Chevalier with destinations in Auckland city and Waitakere (via Avondale), with services along Great North Road and SH16. For trips between Point Chevalier and the Auckland CBD there is an emphasis on peak service provision.

Most people in Sector 6 worked in Auckland city (79-80%), with 16% of Point Chevalier South and 21% of Point Chevalier East residents working in the Auckland CBD. This was followed by local destinations (12-14% of residents worked within the same CAU) and destinations in Waitakere, Manukau or the North Shore (5-9% each). Most people in Sector 6 travelled to work by car (63-69%), followed by public transport (9-11%) and walking/cycling (5-7%). Point Chevalier South had a relatively higher proportion of residents who cycle, walk or jog to work (compared with Point Chevalier East and the wider Auckland region), pointing to the large number of residents who live in close proximity to their workplace/place of study (with many at Unitec). Travel to work modes remained relatively constant between 1996-2006. 11% of Sector 6 households did not have access to a vehicle which is relatively high proportion compared to the wider Auckland region. Again, vehicle ownership rates have steadily increased across the Sector since 1996, with a trend towards more households having access to two or more vehicles (and a consequential decline in the number of households having access to no or one vehicle).

## 5.6 Sector 8

### Overview

Residential activity is the predominant land use within Sector 8, covering the residential areas in southern Waterview, Mt Albert, Avondale Heights and Springleigh. There are two town centres in the vicinity: Avondale (to the west) and Mt Albert (to the east). The Avondale town centre extends along Great North Road from the intersection of Rosebank Road in the north to the St Jude Street/Ash Street intersection in the south. The area comprises a mix of shops, medical facilities, commercial services, police station, Citizen’s Advice Bureau, Work and Income office and a library. As noted in Sectors 5/7, the Avondale shops/centre serves a wider community, including Waterview. The Avondale centre has been identified as an important area by the community, both for access to retail/commercial services and as a community focal point. Avondale has been identified as a future growth node in the Auckland region. The Avondale Sunday Markets (held at the Avondale Racecourse) are New Zealand’s biggest Sunday markets. Avondale’s ethnic diversity is reflected in these markets, which have a strong Polynesian and Asian influence.



Figure 5-28: Avondale Town Centre

The Mt Albert town centre provides a mix of community and commercial services including food outlets, real estate agent, hairdresser and Work and Income office. Like Avondale, this area also serves a wider catchment including people from Springleigh and Owairaka.



**Figure 5-29: Mt Albert Town Centre**

Another retail area of significance within Sector 8 is the Mt Albert Pak' n Save which was identified during consultation as an important retail facility for study area residents.

There are a number of places of religious assembly in the wider Sector 8 area, falling under several religions and denominations. Of note, the Kodesh Christian Community on Cradock Street is a live in Christian community facility accommodating up to 30 people. Also in the vicinity is the Dorje Chang Buddhist Institute on Powell Street, which provides a meditation hall, and an accommodation facility for short and long term stays.

Odyssey House, an adult rehabilitation centre with residential facilities, is located on Bollard Avenue in the southern area of Sector 8. Odyssey House treats adults (and adolescents when required) with serious substance abuse, gambling, and other associated problems. Odyssey House has also been identified in consultation as an important community site.

The Avondale Lions Club Hall, located at the corner of Great North Road and Blockhouse Bay Road, provides a meeting space for the Avondale Lions (who meet twice a month), and is also used for other community groups and functions, including meetings of the Avondale-Waterview Historical Society.

The ACC FPF has mapped community aspirations for an employment node where the Mt Albert Pak'n Save is located, 'green linkages' along Oakley Creek around the Avondale-Southdown rail corridor within Alan Wood Reserve and up to Phyllis, Harbutt and the Oakley Creek Esplanade Reserves, open spaces within Owairaka developed to be safer and more accessible, and improved connectivity and pedestrian/cycle environments through Alan Wood Reserve adjacent to the railway line, along New North Road, and up to Phyllis and Harbutt Reserves. As with Sectors 5/7, Oakley Creek (including its accessibility, amenity and ecological integrity) and the Star Mill site were identified in Project consultation as important areas for community identity and culture.

Community infrastructure in the Sector 8 environment is shown in Figure 5-30 over the page.

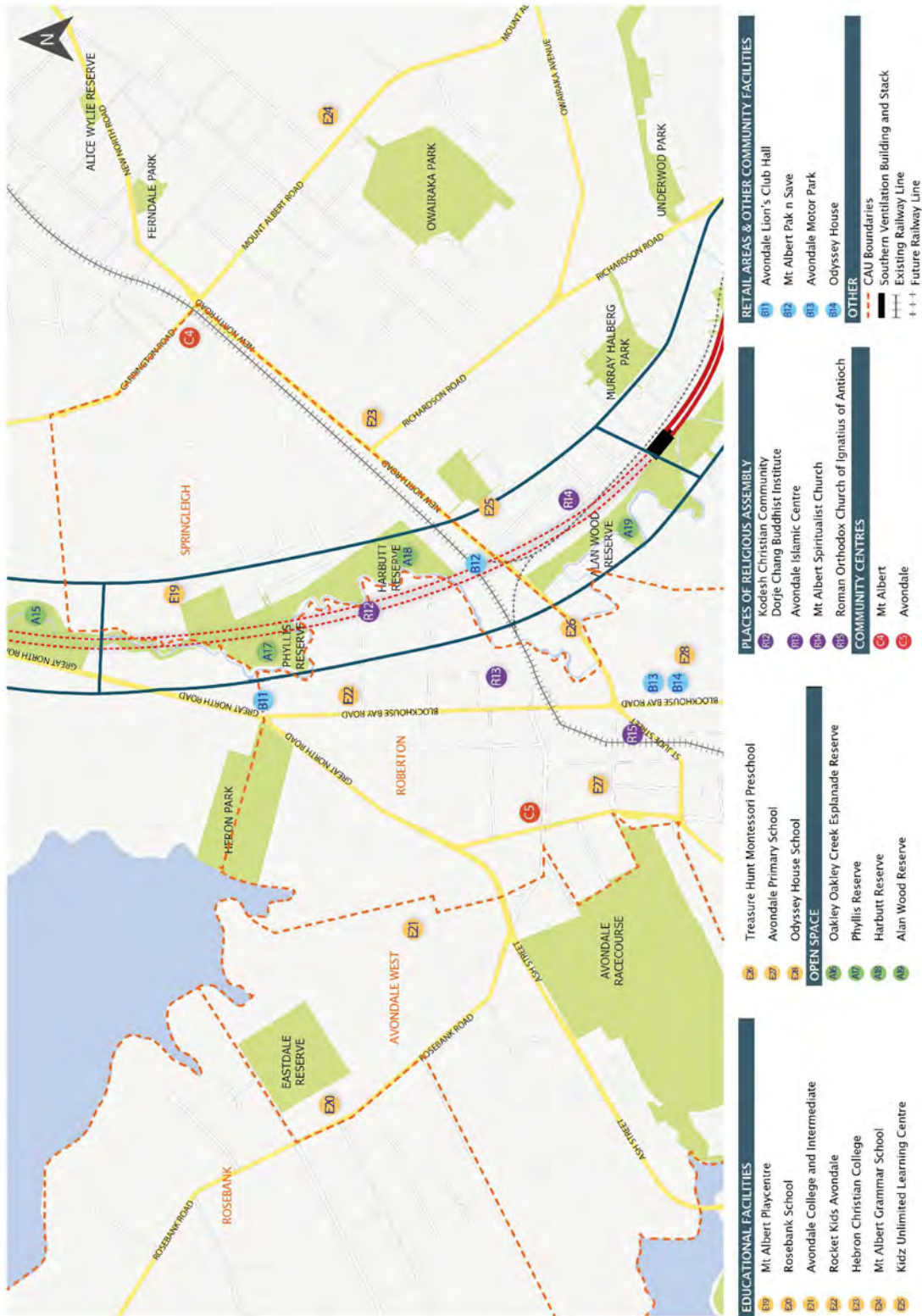


Figure 5-30: Community Facilities in Sector 8

## Community

As within other parts of the study area, the communities that lie on either side of Oakley Creek (Rosebank, Avondale West and Robertson on the west, and Springleigh on the east) represent distinct communities. The Avondale Motor Park located on Bollard Avenue (overlooking Alan Wood Reserve) appears to provide a home to a number of 'long-term' residents. As with others areas in the SH20 study area, residential amenity and the sense of 'quiet-ness' was identified as particularly important in Project consultation.

The predominant ethnic groups in Sector 8<sup>31</sup> are European, Asian, Pacific Islander and Maori. Springleigh and Avondale West have a particularly high proportion of residents of Asian ethnicity (34-36%). Sector 8 also has a relatively high migrant population, with the majority of residents having lived in New Zealand for less than 10 years. This is especially evident in the Springleigh and Robertson CAU's.

Deprivation is relatively high in the area, with the Rosebank and Avondale West CAU's having a ranking of 9, and Robertson and Springleigh having a ranking of 8 and 7 respectively. There has been little change (by more than 1 ranking) in deprivation since 1996. Correspondingly, home ownership is also slightly lower compared to the wider Auckland region (other than in Rosebank), and there has been a marked decline in home ownership compared to 2001 statistics. Housing New Zealand accommodation in Sector 8 is generally clustered around south-east Waterview (Tutuki Street), around the intersection of New North Road and Mt Albert Road, and around Hendon Avenue (where Sector 8 joins Sector 9). There is a block of ACC-provided pensioner flats located on New Windsor Road, close to the intersection with Blockhouse Bay Road.

A number of "SH20 Tunnel or Nothing" signs were observed throughout this area during site visits in 2008-2010, indicating opposition among some residents to the Project being constructed as a surface motorway. Historically there has been a strong level of opposition to the Project among residents, although since proposals to construct the motorway as a tunnel through this area have been publicised, concerns and interest in the Project have reduced substantially. The Northwestern Community Association, Living Communities, Friends of Oakley Creek and the Springleigh Residents Association are active residents groups in Sector 8. The Springleigh Residents Association is primarily concerned with air pollution, ecological, noise and community severance impacts. The main concerns of the other groups are outlined in the context of Sectors 5/7.

## Education Facilities

There are a number of educational facilities in the wider Sector 8 area, including three secondary schools, with their students coming from a number of suburbs within the wider study area, including Avondale, Waterview, Mt Albert, Springleigh and New Windsor.

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<sup>31</sup> Comprised of the Springleigh, Robertson, Avondale West and Rosebank CAU's.

Avondale College is a co-educational college with a roll of 2,607 students in 2009. The zone boundaries for the school extend across the local study area, including Avondale, Waterview and parts of Mt Albert (extending to the western side of Carrington Road and Richardson Road in the east). In 2009 the school had a decile rating of 4, indicating that the school sits just below the mid point with respect to the proportion of students from lower socio-economic families.

Mt Albert Grammar School is a co-educational college with a roll of 2,400 students in 2009. The zone boundaries for the school extend across the study area, including Waterview and Mt Albert. In 2009 the school had a decile rating of 7, indicating the school has a relatively high proportion of students from higher socio-economic families.

Hebron Christian College is an independent Christian school for students from Years 1–13. The school had a roll of 304 students in 2009. The school does not have a specific enrolment scheme/zone, and draws on a much wider catchment than the local surrounding area. In 2009 the school had a decile rating of 8, indicating the school has a relatively high proportion of students from higher socio-economic families.

Avondale Intermediate School is a co-educational school which had a roll of 400 students in 2009. Zone boundaries also extend across the study area, including Waterview and parts of Springleigh. In 2009 the school had a decile rating of 3, indicating the school has a high proportion of students from lower socio-economic families.

Avondale Primary School is a state primary school located on Crayford Street, with a roll of 331 students in 2009. The school zone extends into parts of Mt Albert/New Windsor but does not include Waterview. In 2009 the school had a decile rating of 3, indicating the school has a high proportion of students from lower socio-economic families.

Rosebank School, which is a state primary school located adjacent to Avondale College and Intermediate. The school had a relatively large roll of 528 students in 2009, but there is no zone scheme in place at the school. The school had a decile rating of 2 in 2009, indicating that the school has a high proportion of students from low socio-economic communities.

The Odyssey House School in Bollard Avenue provides education for youth/young adults who participate in Odyssey House residential rehabilitation programmes.

There are also a number of early-childhood educational facilities in the area, including the Mt Albert Playcentre (located adjacent to Phyllis Reserve in Springleigh), Rocket Kids Avondale (located in Blockhouse Bay Road), Kidz Unlimited Learning Centre (located in Ennismore Road in Owairaka) and Treasure Hunt Montessori Preschool (located on New North Road in Mt Albert). The Mt Albert Playcentre has expressed concern about noise and dust impacts during construction, the effect of air quality on educational facilities in the area, operational noise around the southern portal, and the negative impacts on the Waterview community (including loss of population and playground facilities).



**Reserves and Recreation Areas**

Phyllis Reserve (accessed from Phyllis Street) is approximately 6.6ha and caters for active recreation and organised sporting activities, and has links to Unitec and the Oakley Creek walkway. The reserve is home to the Metro Mt Albert Football Club and Softball Club, and the grounds represent a significant recreation resource in the wider SH20 study area. Facilities include three soccer fields and two baseball fields, barbeque area and the Akarana Dog Training Club. The community has identified Phyllis Reserve as having amenity/aesthetic, community, linkage and ecological/wildlife values.



**Figures 5-31 and 5-32: Phyllis Reserve**

South of Phyllis Reserve is Harbutt Reserve, which is approximately 6ha in size and provides passive recreation opportunities (including a bark-surface playground and a dog exercise area). The reserve has been identified by the community as providing useful community linkages, including the walking tracks through the reserve (as described in Sectors 5/7, the Oakley Creek Esplanade Reserve terminates in Harbutt Reserve), but also as having pollution/weed issues. The southern part of the Reserve tapers down to a ‘dead end’ at the rail line, and is isolated from other public places with heavy vegetation and identified CPTED issues<sup>32</sup>. The Reserve is accessed directly from Harbutt Avenue.

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<sup>32</sup> Identified in the Urban and Landscape Design Framework.



**Figures 5-33 and 5-34: Harbutt Reserve**

Alan Wood Reserve extends through the south of the Sector 8 study area, and is described as part of Sector 9 (below).

#### **Travel Patterns and Community Linkages/Connections**

In addition to the road network, there are a number of other transport modes which provide community linkages and connections (including pedestrian links). There are a number of pedestrian linkages within the area, of note the linkages between the Avondale commercial centre to the Pak'n Save site (along New North Road), to Phyllis Reserve (along Great North Road/Blockhouse Bay Road) and to a lesser extent to the Springleigh area (along Woodward Road). The Oakley Creek Walkway, which is described more fully in the context of the Sector 5 environment, terminates in the Harbutt Reserve. There is also a shared walking and cycle path running along Great North Road, until the Blockhouse Bay Road intersection at the south. North-south pedestrian and cycle movement (other than movements over signalised crossings on New North Road) are generally inhibited by the rail corridor that runs along New North Road, which restricts access for pedestrians and also creates CPTED concerns as it is isolated from other public places and has a low level of surveillance. However, there is evidence that some people run across the rail corridor in places where there are no formal crossings. Compared with other sites in Auckland City, cycle volumes in this area are relatively low (with 119 daily movements recorded on Great North Road in 2009).

Passenger transport services (buses and the western train line, which stops in Avondale and Mt Albert) provide access to Auckland city/CBD and to Waitakere city, with an emphasis on peak morning and afternoon travel as well as daytime and weekend services.

Like the rest of the SH20 study area, most people worked in Auckland city (74-79%), with 13-18% working in the Auckland CBD (within the Sector 8 area, Springleigh had highest proportion of people working in the CBD, and Avondale/Rosebank the lowest). This was followed by Waitakere (8-16%) and then within the same CAU (10-15%). The highest proportion of people living and working in the same CAU was at Rosebank. Most people in Sector 8 travelled to work by car (65-72%, a decrease since 1996), followed by public transport (9-14%, an increase since 1996) and walking/cycling (4-6%). The proportion of residents travelling by public transport was comparatively high in Sector 8 (in terms of the travel patterns of the wider study area). This is reflected in the

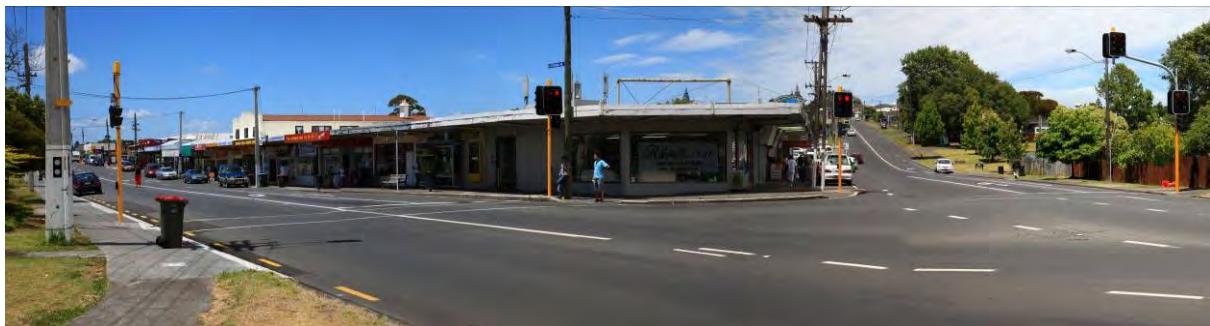
slightly lower rates of vehicle ownership in Sector 8 compared to the wider Auckland region. Vehicle ownership rates have steadily increased across the Sector since 1996, with a trend towards more households having access to two or more vehicles (and a consequential decline in the number of households having access to no or one vehicle). Within the study area the highest proportion of people taking public transport to work is from Springleigh (14%, a dramatic increase from 6% in 1996). This Sector also has a high proportion of people cycling, walking or jogging to work (6% in Rosebank and Springleigh, again reflecting the proximity of the Rosebank and Unitec employment areas).

## 5.7 Sector 9

### Overview

Sector 9 includes the residential areas of Owairaka and Walmsley (to the north of Oakley Creek) and New Windsor (to the south of Oakley Creek), which represent distinct residential communities.

At the intersection of Stoddard Road and Richardson Road, there are a number of retail shops and community outlets, including the Stoddard Road Medical Centre and Post Shop, takeaways and specialist retail stores. This retail area provides an employment source for study area residents, and is envisaged by ACC as a future growth node. The Richardson Road industrial area is a small area of mixed use zoning along Richardson Road, which is currently occupied by a range of light industrial activities.



**Figure 5-35: Stoddard Road Centre**

Local residents also travel to Avondale (described in Sector 8) or Mt Roskill (a larger centre further south of Owairaka, containing a range of retail and commercial services, a police station, Citizen's Advice Bureau and Work and Income office) for wider shopping opportunities. There is a small group of five retail shops on the corner of Hendon Avenue and Hargest Terrace in Owairaka. Two of these shops are vacant (and have been empty for a number of years), which provide local services including a dairy and takeaway food outlet.

Places of religious assembly reflect the cultural diversity of residents living in the area, and include a Pacific Island Church and Islamic Centre. Of particular relevance to the Project, the Samoan Assembly of God on Richardson Road is located directly adjacent to the proposed motorway. Feedback to date received from the church has indicated concern over the loss of part of the carparking area from the proposed designation.

The ACC FPF identifies community aspirations for ‘green linkages’ along Oakley Creek around the Avondale-Southdown rail corridor located within Alan Wood Reserve and the Stoddard shops, enhancing water quality in Oakley Creek, expansion of the Stoddard Road town centre for mixed use business/office, retail, residential, open space, community and recreation uses, and the retention of Richardson Road and Maioro Street as key passenger transport routes.

Figure 5-36 shows community infrastructure and sites of interest in Sector 9 (over the page).

### Community

The predominant ethnic groups for the communities in this area<sup>33</sup> are Asian, Pacific Islander and European. Owairaka and Walmsley have a relatively high migrant population, including a high proportion of African migrants. Due to refugee programme placements in recent years there is a large cluster of Somalian migrants in the Owairaka area. Somalian migrants continue to live in this area, to be close to friends and family. New Zealand Somali Women Incorporated is based here, offering classes for Somalian migrants, including English, computer classes, cooking, language, youth activities and health and wellbeing for the community. Census data shows that the majority of residents within the Sector 9 area have lived in New Zealand for less than 10 years. The predominant ethnicities in the meshblocks directly affected by the Project (by property acquisition) are Asian (39%) Pacific Islander (28%), European (20%) and Middle Eastern/Latin American/African (12%). Like other areas in Auckland, ethnic diversity has increased markedly since 1996 - there has been a decrease in the proportion of Pacific Island residents in these meshblocks, and a consequential increase in the proportion of Maori (since 1996) and MELAA (since 1996) residents.

Socio-economic deprivation is mapped for Sector 9 (see Figure 5-37). Deprivation rates in Owairaka West and Walmsley are very high (9 and 10 respectively), while the rankings for Owairaka East and New Windsor (both 6) are close to the Auckland regional average. The three meshblocks that will be affected by property acquisition all have a deprivation rating of 9 or 10 (with rates of deprivation having varied by +/-1, but overall remained relatively constant between 1996 and 2006), indicating that these areas represent the most deprived 10-20% population in New Zealand.

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<sup>33</sup> Comprised of the New Windsor, Owairaka East, Owairaka West and Walmsley CAU's.



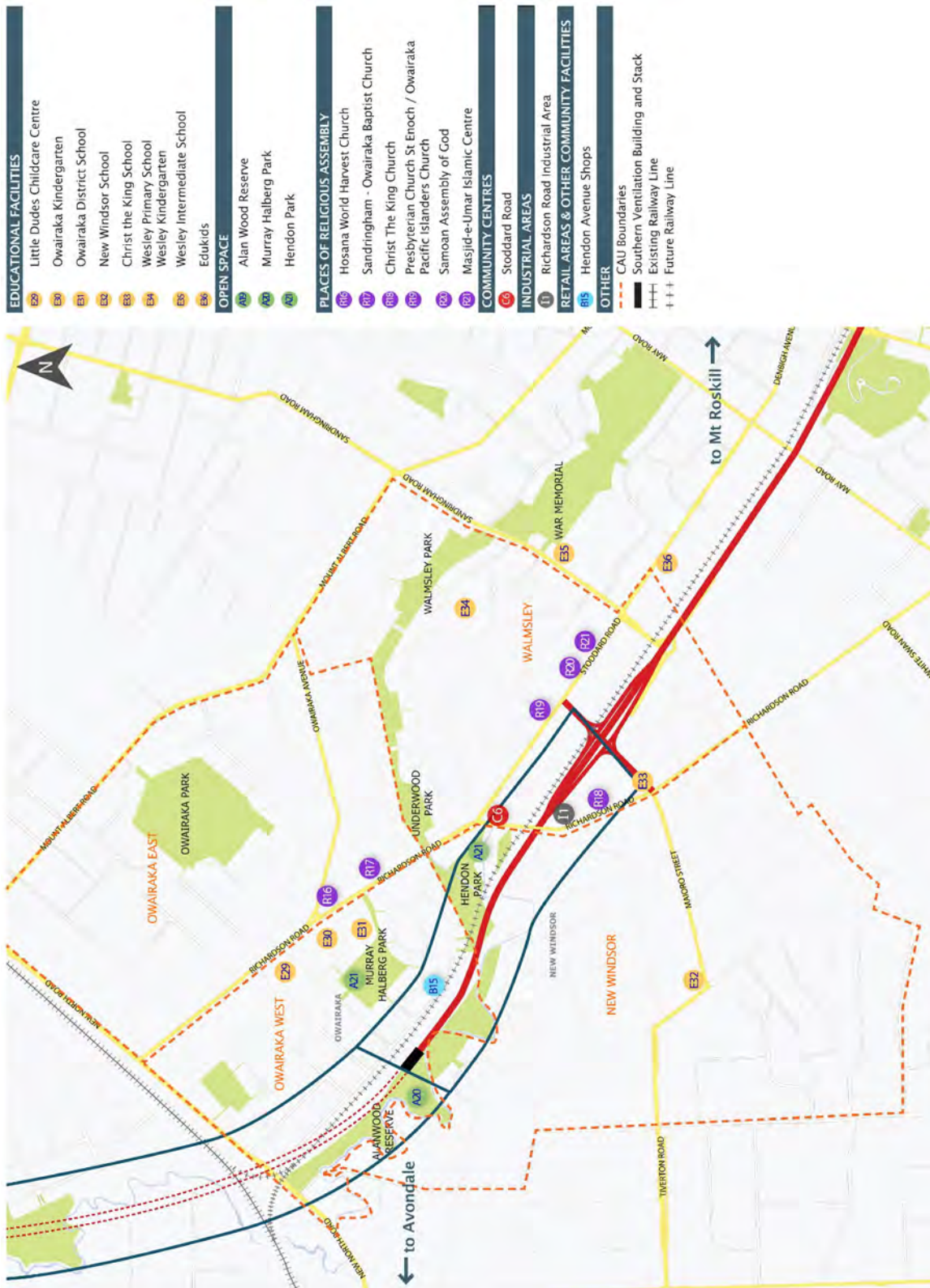


Figure 5-36: Community Facilities in Sector 9

Housing New Zealand accommodation is heavily concentrated in the area, with high densities of social housing around Hendon Avenue, Hargest Terrace, Range View Road, and another significant cluster in the block between Mt Albert Road, Stoddard Road and the Sandringham Road Extension. There are also a number of Housing New Zealand rented properties in between Richardson Road and where the SH20 Mt Roskill section of motorway presently terminates. 78% of the residents renting homes in the directly affected meshblocks around Alan Wood Reserve live in Housing New Zealand accommodation. ACC-provided pensioner accommodation is located further west on Coyle Road in Sandringham, though no Council provided accommodation is located directly in the Sector 9 study area.

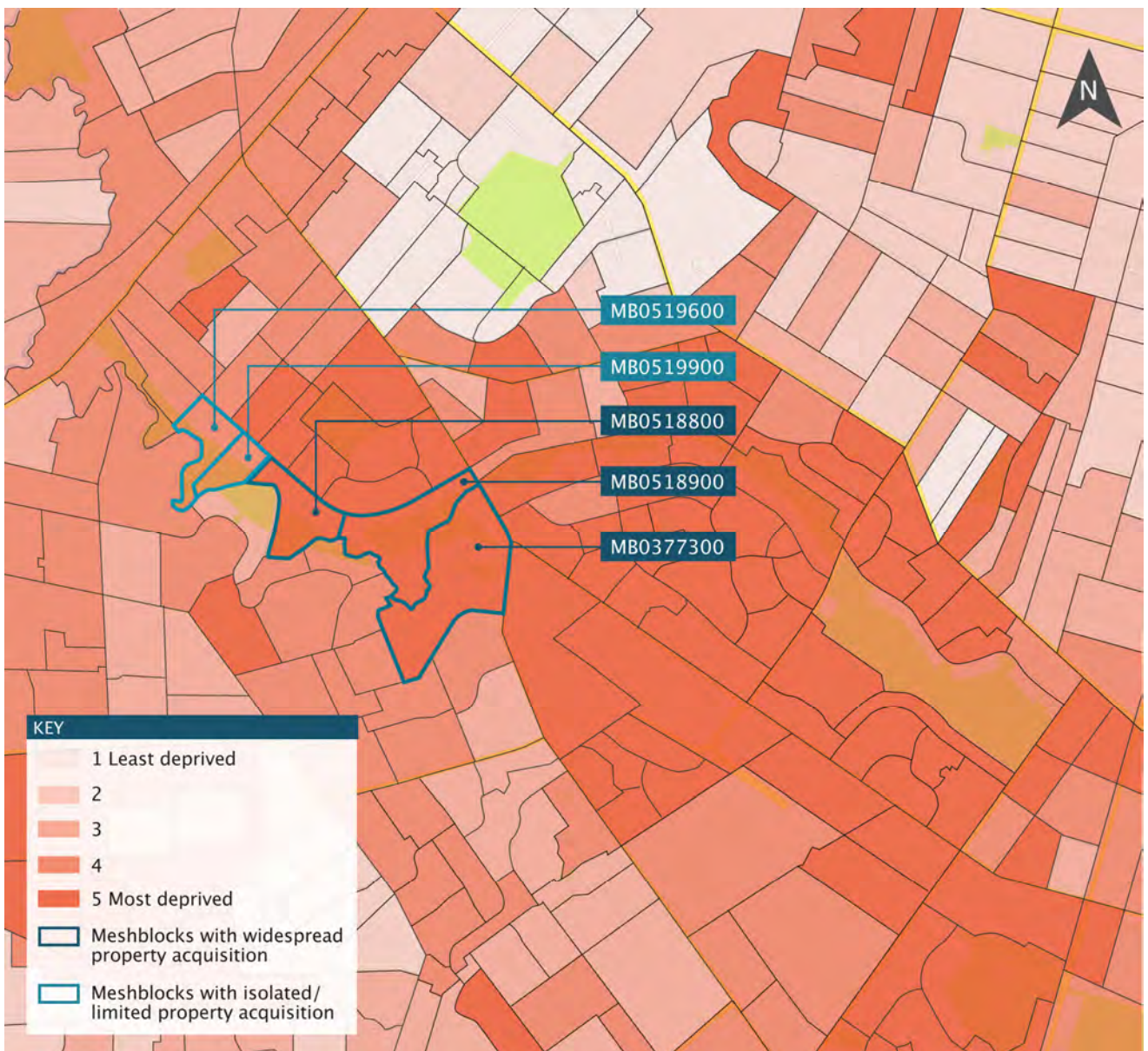


Figure 5-37: Deprivation in Sector 9 (2006)



Home ownership rates were relatively low in Owairaka and Walmsley (32-41%), but high in New Windsor (64%). Home ownership rates have been relatively constant in Sector 9 since 2001, except in New Windsor where they have risen over this period. Consistent with trends for the Auckland region, home ownership rates have fallen since 2001. Properties along the eastern side of Methuen Avenue in New Windsor are elevated and presently have wide open views over Alan Wood Reserve and the unimplemented Avondale Southdown rail corridor. As with others areas in the SH20 study area, residential amenity and the sense of 'quiet-ness' was identified as particularly important in Project consultation.

A number of "SH20 Tunnel or Nothing" signs affixed to private property were observed in this area during site visits in 2008-2010, indicating opposition among some local residents to the Project being constructed as a surface motorway. However, the presence of these signs was not as widespread as in Sectors 5 and 7-8. Generally there is a higher degree of support for the Project in this area than elsewhere in the SH20 study area. Living Communities and the Friends of Oakley Creek have concerns related to environmental and community impacts in this area (as described in Sectors 5/7).

### **Educational Facilities**

Within the area surrounding Sector 9 there are several state primary schools, all with fewer than 500 children in attendance. Christ the King School is an important facility to note, as this School is located adjacent to the current SH20 Mt Roskill section termination. Christ the King School is a state-integrated Catholic primary school located on Richardson Road, with a roll of 141 students in 2009 (a slight decline from 174 students in 2002). ERO reports in 2002 and 2007 state that Pacific Island students comprise 40-50% of the school population<sup>34</sup>. The school had a decile rating of 3 in 2009, indicating that the school has a high proportion of students from lower socio-economic communities. The school is affiliated with the Parish of Christ the King Church, which is located adjacent to the school. There is no zone scheme in place at the school, and children reside within a wider catchment area that includes several of the surrounding communities. The school has been involved in Project consultation since investigations began in 2000, and has expressed concern particularly over noise and construction impacts.

Owairaka District School is a state primary school located on Richardson Road, and had a roll of 343 students in 2009 (ERO Reports from 2001 show that this roll number has remained stable). The school is multi-cultural, with a particularly large Pacific Island and Maori community. There is a strong focus on community education – the school leases classrooms to various groups including the Ethiopian Homework Centre. The School had a decile rating of 2 in 2009, indicating that the school has a high proportion of students from lower socio-economic communities. There is no zone scheme in place at the school, and children reside in a number of the surrounding suburbs, particularly Owairaka. School concerns in relation to the Project are related to

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<sup>34</sup> 2006 Census data shows that 34% of Owairaka residents and 42% of Walmsley residents are of Pacific Island descent.

traffic/pedestrian safety for students on adjacent roads (with specific concerns regarding safety at the pedestrian crossing on Owairaka Avenue, which is used by a large proportion of its students). The school is also concerned about the potential loss of green space in relation to the Project and the potential impacts related to construction and operational noise. The school hall is available for families and community groups to hire. The hall was used during government elections as a voting station, and for Project open days. It regularly hosts local community group meetings, including Ooooby, a New Zealand based 'locally grown food group', and the Auckland Gifted Education Centre.

New Windsor School is a state primary school located on New Windsor Road. The school had a roll of 494 students in 2009. There is no zone scheme in place at the school. The school had a decile rating of 5 in 2009, indicating that the school sits around the mid point with respect to the proportion of students from lower socio-economic communities.

The final primary school within the area is Wesley Primary School, a state school located on Potter Avenue in Owairaka. The school had a roll of 208 students in 2009 and no zone scheme in place. The school had a decile rating of 1 in 2009, indicating that the school has a very high proportion of students from lower socio-economic communities.

The intermediate school serving the local area in Sector 9 is Wesley Intermediate School, a state school located on Sandringham Road Extension, with a small roll of 142 students in 2008. There is no zone scheme in place at the school. The school had a decile rating of 1 in 2009, indicating that the school has a very high proportion of students from lower socio-economic communities.

Early childhood facilities are located on both sides of Oakley Creek, including Owairaka Kindergarten, Wesley Kindergarten and the Little Dudes Childcare Centre in Owairaka, and the Edukids Stoddard Road Centre in Stoddard Road. Childcare centres in Avondale (Sector 8) also serve the local Sector 9 population, particularly residents of New Windsor.

### **Reserves and Recreational Areas**

Alan Wood Reserve is located between New Windsor and Owairaka, and is bisected by land that is designated for the Avondale-Southdown rail corridor. As the rail designation appears as vacant land, many people consider that is part of the Alan Wood Reserve. The reserve itself is approximately 9.1ha in size, and has two senior sports fields and one junior sports field (two fields are partially or fully within leased railway designated land). Other facilities include a basketball practice area, toilet facilities and picnic tables. The reserve has walkways along its length, and is used for passive recreation as a dog walking area. Sports fields are open all year around with the exception of September/October when they are closed for maintenance. The reserve is generally undeveloped (reflecting the unimplemented Avondale Southdown rail corridor as well as the uncertainty of the Waterview

Connection Project), with run-down facilities and CPTED issues due to its enclosed form and low surveillance<sup>35</sup>. The community has identified the Alan Wood Reserve as having ecological/wildlife value, and for providing community linkages, but also as having pollution/weed issues. Oakley Creek runs through the middle of the reserve in highly modified channels, separating the southern (New Windsor) and northern (Owairaka and Walmsley) sides. There is limited pedestrian connectivity between New Windsor and Owairaka other than the informal use of pipes/drains across Oakley Creek. Hendon Park comprises approximately 1.7ha of irregularly shaped land, with no discernable distinction between the Alan Wood Reserve/rail corridor. The community has identified Hendon Park as having amenity/aesthetic value, ecological/wildlife value, as providing important community linkages, including a connection from Alan Wood Reserve to Richardson Road and to Valonia Street, but also as having pollution/weed issues.

There is a large land block in Valonia Street adjacent to Alan Wood Reserve which holds consent for the establishment of 83 new dwellings. This consent is yet to be implemented and will expire in late 2010. Currently this land is vacant and is also thought to be part of Alan Wood Reserve by some users. Across Richardson Road, the open space 'link' continues eastward with Underwood Reserve and Walmsley Park.



**Figure 5-38: Alan Wood Reserve**

Murray Halberg Park, located further east in Owairaka, provides both passive and active recreation opportunities. The park caters for league, and is home to the Marist Rugby League Club, and also provides a link between local streets (including Richardson Road, Dunkirk Terrace, Cassino Terrace, Alamein Terrace and Hargest Terrace). There is a playground and fitness centre/public pool.

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<sup>35</sup> Identified in the Urban and Landscape Design Framework.



**Figures 5-39 and 5-40: Murray Halberg Park**

The community has identified Murray Halberg Park as having amenity/aesthetic value and as providing important community and linkage functions, especially to the surrounding local streets. The park is well used compared with Alan Wood Reserve/Hendon Park, mainly due to its good level of facilities and amenities. It is situated next to the Hosanna World Harvest Church and Owairaka School. On the southern side of Oakley Creek, there is a small local reserve just off Methuen Avenue in New Windsor.

#### **Travel Patterns and Community Linkages/Connections**

SH20 (in its current termination at Maioro Street) provides an important transport link for local residents to south Auckland. In addition to the road network, there are a number of other transport modes which provide community linkages and connections (including pedestrian links). Key pedestrian connections in the area include the Alan Wood Reserve walkway, which connects New North Road with Hendon Park. There is also a pedestrian link between Alan Wood Reserve and Harbutt Reserve. A shared pedestrian and cycle path connects Hendon Park to Underwood Park and Walmsley Park. The pedestrian crossing on Owairaka Ave is an important connection, which is particularly used by students at Owairaka District School. Relatively few cycle movements were recorded on Richardson Road (21 daily movements in 2009).

Bus services in the area provide connections to Stoddard Road, Waitakere city and the Auckland CBD, with relatively fewer services (peak and non-peak) compared to most of the study area (which are located in closer proximity to SH16 and arterial roads, and therefore benefit from a higher number of 'through' services).

Most people worked in Auckland city (78-82%), with between 13-18% of people working in the Auckland CBD (within the wider Sector 9 area, Owairaka West had highest proportion of people working in the CBD, and Walmsley the lowest). A further 6-10% of people worked in Waitakere city and 6-8% in Manukau city. Sector 9 also had the highest proportion of unemployed residents within the study area as a whole. In terms of travel patterns, most people travelled to work by car (65-74%), followed by public transport (9-12%) and walking/cycling (2-4%, a significant drop since 1996 when 5-8% of people travelled by this mode). New Windsor had the smallest proportion of residents within the study area as a whole that cycled, walked or jogged to work,

and had one of the highest rates of car ownership (with 42% of New Windsor households having access to two vehicles). The proportion of households without access to a vehicle in 2006 was relatively high in the Owairaka West and Walmsley CAU's (all with more than 10% of households). Again, vehicle ownership rates have steadily increased across the Sector since 1996, with a trend towards more households having access to two or more vehicles (and a consequential decline in the number of households having access to no or one vehicle).

## 6. Regional Social Impact Assessment

### 6.1 Transport, Accessibility and Connectivity<sup>36</sup>

Stakeholder feedback from territorial authorities, the AA and stakeholders with business/economic interests has indicated support for the Project, seeing it as a strategically important part of Auckland's regional transport network. In July 2009, the AA randomly surveyed 3,100 of its Auckland members<sup>37</sup> and found that 90% agreed or strongly agreed with completing the WRR, and 67% wanted to see the Waterview Connection opened as soon as possible.

As benefits to transport, accessibility and connectivity will only be realised once the Project has been constructed, social impacts on a regional scale are not envisaged in the planning phase of the Project.

Construction of the Project will have some adverse effects on traffic in the Auckland region, given the location of the works within an existing State Highway environment. In general, the existing number of traffic lanes will be retained during construction (except for night works), however traffic management measures including narrower lanes/shoulders and reduced speed limits are anticipated to result in some adverse effects (albeit of limited duration) on vehicles using SH16, Te Atatu Road and Great North Road in some phases of the construction works and during certain periods of day. Night works, where planned, will generally have no more than minor effects on the transport network. Overall, construction of the Project will result in some traffic delays along SH16 for vehicles and buses during peak morning and afternoon traffic flows. This is considered to result in minor to moderate negative impacts for people's way of life, as a result of time delays in accessing destinations along the SH16 corridor and associated frustration over congestion. However, these impacts are temporary and are not considered to be widespread beyond peak traffic periods. As such, these impacts are most likely to affect people with fixed schedules who do not have the opportunity to adjust their travel patterns to avoid these delays.

Once constructed, the Project will improve the capacity of SH16, provide an alternative to SH1 along the new section of SH20, and provide for access between local, district and regional centres across the region. This will

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<sup>36</sup> Based on conclusions from Technical Report G.18 *Assessment of Transport Effects*.

<sup>37</sup> In an email survey which was independently audited, with a 1.7% margin of error. A significant number of respondents also thought it was important for environmental and social impacts to be minimised (79% and 70% respectively).



significantly improve the accessibility and connectivity provided by the regional motorway system across the majority of the day, and generally provide benefits to the wider local arterial road network elsewhere in the region. During weekday peak periods, the overall performance on SH16 is expected to be marginally better than the 2006 baseline, while accommodating the substantial increase in traffic expected in the future (increase of 25-35%, compared with the 2006 baseline). Assessments indicate that the completion of the SH20 section of the Project will result in a shift of traffic from the SH1 corridor to the SH20 corridor, as the WRR becomes a viable alternative to SH1. Assessments also forecast benefits in separating through and local traffic to improve the efficiency and local function of these parts of the transport network. Overall, the Project will:

- Generally improve travel times on a regional level (particularly between the south and west of Auckland, including from Auckland International Airport);
- Provide transport infrastructure that will support the Auckland Regional Growth Strategy by achieving objectives of the Auckland Regional Land Transport Strategy 2010;
- Provide a strategic alternative to SH1, improving the resilience of the state highway network in high traffic events, for example an emergency evacuation;
- Divert vehicle and heavy vehicle traffic from local streets elsewhere in the Auckland region, providing a benefit to these communities in terms of reduced traffic flow on the local road network (discussed in section 6.3);
- Improve regional public transport opportunities between Waitakere City and Auckland City, significantly improving peak period bus journey times by almost doubling the existing bus shoulder provision along SH16 between Te Atatu Interchange and Great North Road Interchange; and
- Improve pedestrian and cycle accessibility between regional communities through improvements to the Northwestern Pedestrian/Cycle Way and the construction of further length of the SH20 Cycleway. The Project will directly complement future pedestrian and cycling connections at both a regional and local level, as identified in the relevant ARTA, ACC and WCC plans and strategies.

The Project provides for an integrated road/rail corridor within Sector 9 (enabling the realignment of the existing Avondale-Southdown rail corridor). From a social perspective, this maintains the potential for the future development of rail opportunities (passenger transport) for Auckland residents.

Overall, the Project will bring significant improvements to regional transport, accessibility and connectivity in Auckland. This is considered to represent a significantly positive social outcome in terms of people's way of life through improvement to travel times (and associated improvement to frustration over congestion), public transport opportunities, and accessibility between different areas in Auckland. The Project will improve regional access to residential areas, community facilities and educational, employment and recreational opportunities, making a significant contribution to the wellbeing of regional communities in Auckland.

**Overall, the completion of the Waterview Connection will result in significantly positive social benefits to the Auckland region in relation to transport, accessibility and connectivity. However, construction of the**

**Project is considered to cause minor to moderately negative social impacts during construction, associated with disruptions to accessibility and connectivity along the SH16 corridor during peak travel times.**

## 6.2 Economic Growth and Development<sup>38</sup>

Social impacts are not envisaged in the planning phase of the Project, as regional scale economic gains will only be realised upon commencement of construction of the Project.

The Project is a major construction effort and will involve in the order of 1,000 workers, over the five to seven year estimated construction period. This will facilitate regional social benefits in terms of providing temporary employment opportunities in construction and engineering which will provide social benefits by improving Auckland residents' and businesses income generation opportunities.

Stakeholders with economic interests in the Auckland region overwhelmingly support the urgent completion of the WRR, citing economic/efficiency benefits through travel time savings and productivity improvements. Once completed, the Project will facilitate the movement of goods, services and people to activity centres surrounding the Project area as well as the wider region, enabling goods to be moved more quickly and improving business productivity. Firms' accessibility to suppliers, markets and the potential labour force will be improved as a result of the completion of the Project and WRR. Improved accessibility to Auckland International Airport is a key benefit.

The new SH20 motorway section will generate the principal economic and related social benefits of the Project. This new motorway connection will decrease the extent of travel time barriers between communities and their activity centres, community infrastructure and employment opportunities through improved accessibility and improvements in travel times. Assessments indicate that the Project would provide for access to and between centres of future economic development across the region. The Project will generate productivity increases as a result of these travel time and connectivity improvements, which is likely to lead to significant long term economic impacts. The Rosebank Road Industrial Area and Stoddard Road future growth area are key employment nodes which will benefit fiscally from this improved accessibility. Projections for the SH20 section of the Project for the 10 years following the completion of construction estimate the Project would generate up to 18,000-18,500 jobs in those areas benefitted by improved accessibility (it is acknowledged that while many of these jobs will be relocated from comparatively less productive areas in Auckland, there is likely to be a net

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<sup>38</sup> Based on conclusions from *Assessing the Wider Economic Impacts from the SH20 Waterview Connection* (Ascari Partners, 2007).

job creation). The EIA also projected that the SH20 section of the Project would generate a (one-off) potential increase in GDP worth between \$1.4 and \$2.4 billion, including welfare gains of between \$0.8 and \$1.3 billion as a result of the productivity, labour market and competition impacts of improved accessibility.

Economic benefits including job creation and long term GDP/welfare gains will impact positively on people's way of life in the Auckland region, providing significant social benefits in terms of material wellbeing and income generation/efficiency opportunities for businesses and employees across the region.

In addition, the Project, by improving the transportation and accessibility for the region, will contribute opportunities for urban intensification providing positive benefits for the region's regional growth centres (eg. Rosebank, Stoddard Road and also areas to the west of the Project). In the longer term, this is expected to result in enhanced quality of living and working spaces across the region and the overall urban form of the Region. This will have positive social impacts in terms of socio-economic benefits for residents and longer term quality of living environments.

There are also potential advantages to some more materially disadvantaged groups in the region, particularly with improvements to passenger transport (bus) facilities on SH16, and improved vehicle (including passenger transport) connectivity between the west and CBD, and the west and south. Such improved connectivity will improve opportunities for lower income workers who are more sensitive to travel costs for employment and living options to access a wider range of employment and living opportunities.

**Overall, the Waterview Connection is considered to yield significantly positive social benefits in terms of access to employment opportunities, people's economic wellbeing, and opportunities to provide for material quality of life in the Auckland region.**

### 6.3 Environmental Sustainability

In this section, impacts on 'environmental sustainability' relate to people's perceptions of environmental quality (relevant to areas of environmental value/regional importance), as well as amenity for road users. It is noted that most impacts in this domain are envisaged to occur on a local scale, and as such are reported in section 7. Impacts considered as part of this regional assessment are those which have the potential to affect a wider regional population (for example, where a particular site has been identified as of regional significance, or where impacts will be visible to state highway network users, who are drawn from across the Auckland region (and beyond)).

In terms of regional level environmental interest in the Project, stakeholder and public feedback has highlighted concern over potential impacts on the Motu Manawa (Pollen Island) Marine Reserve and the Oakley Creek, two areas identified as being of regional significance/environmental value in Auckland. Other than challenging some people's/organisations' views and expectation with respect to potential future impacts on these areas, social impacts in relation to environmental sustainability are not envisaged in the planning phase of the Project.

Impacts on environmental sustainability are expected to be regional in nature during the construction period, due to the wide geographic area covered and significant five to seven year construction duration. Impacts will

be experienced by local residents (discussed in section 7) as well as drivers, public transport users and cyclists/pedestrians who travel through the Project area from elsewhere in the Auckland region. Temporary visual and noise impacts will be the most obvious environmental impacts experienced by road users. Some impacts are expected on Oakley Creek and the Marine Reserve, given the nature of construction activities proposed (which include reclamation, the erection of structures over the CMA, and realignment of the creek). Based on the views put forward in consultation, this is likely to challenge some people's expectations of environmental sustainability. Construction impacts, and in particular erosion and sediment generation, will be carefully managed using best practice environmental management techniques. Overall, construction disruption and annoyances are generally expected to result in minor impacts to people's perceptions of the regional outcome of environmental sustainability during construction, given the stringent construction management measures that will be implemented and the relatively temporary duration of construction.

Once operational, the Project is projected to significantly decrease traffic from local streets elsewhere in Auckland (notably Manukau Road, Gillies Avenue, Mt Eden Road, New North Road, Dominion Road and Sandringham Road), increasing 'liveability' and safety for pedestrians, cyclists and local motorists in localised areas in Auckland (beyond the 'local SIA study area' considered in section 7). This provides a benefit to these communities in terms of reduced traffic flow, amenity and noise impacts along these routes.

It is recognised that the Project will have negative environmental/ecological impacts associated with the proposed reclamation. The negative impacts are considered to be counterbalanced by the wider social/accessibility benefits and the environmental mitigation/improvement proposed as part of the Project. In the long term the Project is projected to have an overall positive impact on the health and amenity of Oakley Creek, as a result of implementing the mitigation set out in the Oakley Creek Restoration and Rehabilitation Guideline produced for the Project. Installing new stormwater treatment devices (where there previously were not any) will improve the quality of water being discharged from SH16 into the CMA, ultimately improving water quality in the marine reserve and Oakley Creek. Restoration/planting is also proposed on Traherne Island. This in turn is considered to result in a positive social impact in relation to people's attitudes, expectations, aspirations and wellbeing, given the importance of Oakley Creek and the Motu Manawa (Pollen Island) Marine Reserve to a number of residents both locally and in the Auckland region.

**Overall, regional impacts in relation to environmental sustainability are anticipated to range from minor negative impacts during construction, to minor positive social impacts once the Project is operational. These impacts relate to people's perceptions of environmental quality in the Auckland region, impacts on road users, and take into account impacts on the regionally significant Motu Manawa (Pollen Island) Marine Reserve and Oakley Creek sites.**

## 6.4 Healthy Communities

Stakeholder feedback relating to healthy communities has primarily concerned air emissions and access to 'active' modes of transport on a regional level. Social impacts relating to people's health and wellbeing in the planning phase are principally considered to affect residents in the local study area (discussed in section 7), and are not envisaged on a regional level.

During the construction phase, some regional impacts on healthy communities are expected in relation to the travel delays associated with SH16 widening works during peak travel times, which may hinder access to regional level healthcare facilities (of note, those facilities clustered around Carrington Road, including the Mason Clinic psychiatric facility, RehabPlus unit, Buchanan Rehabilitation Centre and Methadone Treatment Service). Other impacts are not generally envisaged on a regional level. Localised construction impacts that have the potential to affect health outcomes (eg. noise, dust) are discussed in section 7 of this report.

The ARLTS Health Impact Assessment (HIA) examined the health impacts of the four strategic options considered in the development of the ARLTS (of the four options, completion of the WRR was proposed as part of strategic option #2, but not as part of any other strategic option). The HIA identifies four key health and wellbeing issues for transport developments: safety, access and mobility, 'active' modes of transport and emissions and noise. It also identifies equity in wellbeing outcomes as of importance to transport planning.

With respect to safety, the ARLTS HIA projects significant road safety improvements, with crashes, injuries and deaths forecasted to more than halve in 2041 for all scenarios (including strategic option #2). The Project will also result in significant safety improvements through the reconfiguration of the Te Atatu Interchange, particularly the lengthening of the westbound off-ramp. Improving the safety of Auckland's transport network provide regional benefits for users of all transport modes, including vehicles, public transport and cyclists/pedestrians.

Looking at access and mobility, ARLTS HIA modelling shows that all strategic options (including option #2) fall short of meeting the target of 11% of all trips in large urban areas being by public transport by 2040 (falling short at 7%). However, access to employment, tertiary, health and retail opportunities by private car and public transport is projected to increase for all strategic options compared to the 2006 situation. The HIA also projects reduced public transport congestion, which is desirable for encouraging the uptake of public transport. However, for residents of the most deprived areas in Auckland (NZDep 7-10 areas), the HIA projected that interpeak access to public transport would decline from 2006 levels. In terms of the Project specifically, public transport opportunities will improve along SH16. Completion of the Project will facilitate accessibility improvements to health facilities of regional or district importance, particularly for those residents living in the west, south and isthmus of Auckland. The regionally significant health facilities clustered around Carrington Road (including the Mason Clinic and rehabilitation/addiction units) will benefit from improved accessibility with the Project.

In terms of active modes of transport at the ARLTS level, the ARLTS HIA projects that all strategic options (including option #2) will meet or exceed the target for active mode share (15-18% mode share). Looking at the Waterview Connection specifically, the Project provides benefits to active modes of transport (in particular bus users and cyclists), which is considered to align well with the strategic direction of promoting multi-modal, active transport choices in Auckland.

The potential health impacts associated with noise and emissions are arguably the most contentious in relation to the Project. ARLTS HIA modelling shows that by 2041, daily amounts of vehicle pollutants will decline but there will be an increase in health events (including premature mortality, illness and restricted-activity days) due to population increases. Most of these health effects are associated with PM10, however, other pollutants such as carbon monoxide and volatile organic compounds (eg. benzene) also contribute. Project air quality modelling

shows that total emissions of PM10 for the greater Auckland area are predicted to be slightly higher with the Project than without it, however the differences are considered to be negligible. Modelling generally forecasts improvements to air quality on SH1 and arterial roads in the Auckland region (notably Manukau Road, Gillies Avenue, Mt Eden Road, New North Road, Dominion Road, Sandringham Road), associated with improved traffic flow and reduced congestion. However, modelling also shows a reduction in air quality along the Project route corridor as a result of increased traffic volumes using the link (approximately one quarter of local receptors experience a net increase in PM10 and NO<sub>2</sub> concentrations). These impacts are considered as part of the local social impact assessment in section 7. Importantly, modelling indicates that emissions from the Project will not exceed the National Environmental Standard for Ambient Air Quality (AQNES) assessment criteria for any of the modelled emission scenarios. The tunnel ventilation system itself is designed to maintain sufficient airflow to provide air quality within the tunnels that is adequate for the safety of vehicle occupants.

Looking at noise, the ARLTS HIA does not conclusively forecast exposure to health-endangering noise levels from transport, as it is unclear how much of the projected increase in noise exposure will be countered by mitigation features. Project noise modelling shows that overall, the Project can be operated such that unacceptable noise effects can be avoided, remedied or mitigated by utilising the best practicable option approach and the achievement of compliance with the relevant criteria of NZS 6806.

In addition, the improved accessibility provided by the Project is considered to improve opportunities for leisure and recreation (albeit to a minor degree), in terms of reducing travel times and therefore enhancing time opportunities to enjoy leisure and recreation, and improving accessibility to areas of recreation and leisure.

Overall, the Project itself is expected to facilitate generally positive regional outcomes in relation to 'healthy communities'. Access and mobility to healthcare facilities is expected to increase on a regional level (other than during construction delays), and traffic safety outcomes are anticipated to improve. Access to active modes of transport will also increase as a result of elements of the Project (cycleway and bus route improvements). Air quality is generally expected to improve on a regional level either with or without the Project, in line with improvements to emissions of the vehicle fleet (the Project will have a negligible impact on the overall mass of emissions of air pollutants from road transport to the region's air shed). While not specific to the Project, it is noted however the projections of the ARLTS HIA indicate that the transportation situation of the region (including the WRR project) will continue to have negative health consequences for Auckland residents (albeit that these are not worsened by the existence of the Project).

**Overall, the Project is anticipated to result in moderately positive social impacts to the Auckland region, in relation to the social outcome of 'healthy communities'. Positive impacts are forecasted in relation to improved traffic safety, active modes of transport and access to health services and recreation/leisure opportunities, and a reduction in traffic congestion along numerous arterial roads in the region (which reduces vehicle emissions to air in these locations). However, while the Project does reduce congestion, the health consequences of air emissions associated with vehicle emissions are still projected to have an ongoing negative consequence in the region.**



## 7. Local Social Impact Assessment

For assessment purposes, local social impacts have been divided into four categories (as set out in section 4.4): people's attitudes, expectations and aspirations; wellbeing and way of life; culture; and community. It is recognised that there is cross-over between these categories, however for reporting purposes, impacts have been included under the main heading they are considered to relate to. Appendix F provides a completed local SIA 'checklist' of impacts projected in each Sector during the planning, construction and operational phases of the Project.

### 7.1 Effects during the Planning Phase

#### Overview

**Effects of the Project during the planning phase are considered, reflective of the range of views and concerns expressed by individual residents within the wider Project study area.**

#### 7.1.1 Attitudes, Expectations and Aspirations

##### Attitudes

Attitudes, reactions and responses to the SH20 Project have varied greatly across the local study area, as can reasonably be expected with a project of this scale and level of contention. Since the beginning of consultation, a variety of conflicting opinions on route and construction options have been put forward, with no unanimous opinion on single roading corridor/alignment. A number of residents are supportive of the Project<sup>39</sup>, seeing accessibility benefits for themselves, their communities and the wider region should the transportation link be completed. Many people offered conditional support subject to satisfactory mitigation of construction and operational disturbances and environmental effects (such as noise, vibration, air quality and visual impacts). A number of respondents have reported in consultation that they feel like they are among 'the silent majority' of local people who want the Project to be built. Residents supportive of the Project typically want to see it go ahead promptly, reporting that they do not want to see the process 'drag on' for longer than necessary.

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<sup>39</sup> The most recent indication of support for the Project was in 2009, when 42% of the 465 written responses received indicated support/conditional support for the early completion of the WRR.

On the other hand, a significant number of residents<sup>40</sup> also oppose the Project on social, environmental and other grounds. Opposition to 'building a motorway in people's backyards' has been a theme throughout consultation. A number of local residents have requested that the Project be constructed as a tunnel to minimise these concerns. Many local residents are particularly vocal in their opposition to the Project, with "SH20 Tunnel or Nothing" signs affixed to private property through Sectors 7 to 9. Impacts on local air quality, visual impacts and noise impacts are the most commonly cited reasons for opposition. Some people have also indicated opposition to the Project based on its high cost, stating that it could be used on multiple projects. Local residents' questioning of whether transport funds should be spent on public transport rather than developing Auckland's road network was also expressed consistently throughout consultation. For many, attitudes to the SH20 Project appear to have worsened through the consultation period. As consultation has progressed, an increasing number of residents have commented that the uncertainty associated with the SH20 Waterview Project is affecting future aspirations by resulting in 'life on hold' until a firm decision is made about whether the Project will proceed (this is discussed further under 'expectations and aspirations' below). Overall there are a variety of different attitudes about the Project among local study area residents, with some people holding strong views and others having only marginal interest (if any) in the Project. Generally (but not exclusively), interest in the Project increases among residents currently living in close proximity to the proposed works areas. Attitudes regarding the SH16 works are markedly less varied than those put forward for SH20, and generally do not carry the same level of opposition among local residents. Most people supported the SH16 widening, subject to the satisfactory mitigation of impacts. Concerns expressed in consultation related to a more confined set of issues including potential impact on property values, construction and operational noise and effects on property enjoyment (for residents that would border the new widened motorway).

Beyond this, the SH20 Project raises issues with people's perceptions of spatial equity. In consultation, some local people raised concerns that the benefits of the Project would only be realised on a regional level, while the negative impacts associated with the Project will be borne by local residents. This reaction is particularly promoted by the perception that the tunnels will not yield any accessibility benefits for Waterview residents given that there is no direct access proposed from the Great North Road Interchange. While valid, these views need to be examined in the context of current travel patterns of residents in the local study area, many of who use the motorway to travel to work as well as for non-work purposes (whether by private vehicle or public transport) as well as non-motorway transport modes. A number of local residents have also expressed enthusiasm for the Project, believing it will provide them with accessibility benefits to access employment, education and recreation opportunities. Further, some residents believe that the motorway is being proposed where it is due to the location largely being a lower socio-economic area (relative to other areas in Auckland),

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<sup>40</sup> In 2009, 44% of the 465 written responses received indicated opposition to the early completion of the WRR. In 2006, a petition signed by over 500 people was presented to ACC, ARC and Transit opposing the motorway running through the Waterview suburb. A second petition to ACC also signed by over 500 people sought tunnelling between Richardson Road and Waterview Interchange.

contending that 'motorways are only built through poor areas'. Within the Project area, there are perceptions of inequity between Sectors 7 and 8 (where the proposed tunnel alignment will result in minimal operational effects), versus the proposed surface section of motorway in Sector 9 which will have more significant social impacts. While the SH20 Project route decision was made for strategic locational reasons (and was considered to have lesser social impacts than other route options considered, as detailed in Part D of the AEE), these concerns nevertheless form part of the attitudes of some residents in the local study area.

There is a high level of misinformation about the SH20 Project among some study area residents and groups (for example, there has been speculation that the Project would require land to be acquired from Waterview Primary School/Kindergarten, and that construction of the Project would be so loud that it would require teachers to wear microphones in class). The NZTA has tried to mitigate this impact throughout the planning phase by encouraging open communication and information transfer through the Project website, freephone number, open days/expos and direct liaison with stakeholders.

### **Expectations and Aspirations**

It is largely during the planning phase that residents' and communities' expectations and aspirations for their own plans and the future of their communities have been challenged. SH16 works (Sectors 1-4 and 6) involve extending the existing NZTA SH16 designation. It is not envisaged that local residents would have been aware of these plans prior to their public announcement. However, given the significant population growth and traffic congestion that has been experienced along this corridor, it would not be unreasonable that some people would have anticipated the area being widened at some stage in the future. For many residents, the thought of a motorway planned in their neighbourhood threatens their own expectations of lifestyle and community character (including a sense of 'quiet-ness', safety and residential amenity), particularly for those who live very close to its proposed boundaries. The SH20 section (Sectors 5 and 7-9) of the Project is challenging as no route corridor has ever been designated or clearly defined, and there are expectations in the community of the neighbourhood remaining motorway-free. It is also noted that completion of the WRR has been confirmed in public planning documents, including the Auckland Regional Land Transport Strategy 2010, and was anticipated in the ACC Future Planning Framework in 2008. Consultation for the SH20 Project has been ongoing since 2000, which has made many local people aware that the motorway is planned for some point in the future (while still recognising the uncertainty of this planning process and the potential for different routes and construction options). Consultation between 2008 and 2010 has shown that for a number of study area residents, it is already evident that they have either accepted the Project, or reluctantly factored it into their future expectations.

The uncertainty surrounding whether or not the Project will proceed is having some impact on individuals' and families' future plans, particularly in areas of likely property acquisition around the Great North Road (Sector 5) and Maioro Street (Sector 9) Interchanges. Some residents have commented that changing plans for the construction and routing of the SH20 section of the Project have resulted in 'life on hold' since public discussions commenced approximately ten years ago (in terms of property purchases and decisions to stay or move on from the local neighbourhood). Other residents have commented that the uncertainty of the Project has caused the deterioration of some buildings, as people are reluctant to carry out repairs and renovations in the event that their property is required as part of the Project. For residents affected by Sector 1 and 6 works, there has also been an element of 'life on hold' following the announcement of property acquisition plans for

the SH16 upgrade in 2009. The opinion has been expressed that this uncertainty is not fair to residents, who need to be provided with some certainty about the Project to enable them to 'move on' with their own lives, to make decisions about current plans, and to make future plans (particularly if they are looking to sell, develop their properties or relocate). This is discussed further under 'wellbeing/quality of life' (below).

Some residents have expressed concern that the Project is having negative impacts on housing values in the area (eg. 'urban blight') and limits peoples ability to 'move on' until some certainty can be provided as to whether the Project will be built and which route is will take. Property owner anxiety and potential property devaluation are long recognised impacts of the current planning process for infrastructure projects which entail a lengthy consultation and designation period<sup>41</sup>. However, this impact needs to be balanced against the desire for an open public consultation process as a fundamental input to the development of such projects. No specific studies have been undertaken on the potential impact of the Project in relation to property prices. Looking at general statistics for the SH20 study area (Waterview, Mt Albert, Avondale, Owairaka, New Windsor), average property values increased substantially<sup>42</sup> between 2000-2010, in line with trends in the wider Auckland region (the average value in the Mt Albert and Mt Roskill wards has increased by 113% and 89% respectively during this timeframe). While it is important to recognise that these figures are averages (and as such there is the potential that specific properties may have experienced localised impacts), this shows that generally the Project does not appear to have had any marked impact on property values in the wider study area during Project planning/consultation. Further, anecdotal feedback suggests that many people expect property prices in the wider study area to rise as a result of the improved accessibility created by the Project, while any negative impacts are likely to be relatively localised (associated with the new presence of motorway structures).

With regard to the future plans of communities, the Project is not considered to provide a barrier to achieving ACC's future vision for communities affected in Sectors 5-9 (including future development of reserves, transport nodes, housing intensification and growth of town centres, as set out in the ACC Future Planning Framework). Further, the Project is considered to assist in meeting regional planning outcomes for growth management and intensification, particularly in Te Atatu South/Te Atatu Peninsula (Sector 1), Avondale/Rosebank (Sectors 3/8) and around Stoddard Road (Sector 9). This is discussed further in section 7.3.

A further consideration affecting people's expectations and aspirations about the SH20 component of the Waterview Connection relates to previous Transit/NZTA proposals to build the link. The long and uncertain planning phase has resulted in mixed expectations and aspirations associated with the Project (including mixed expectations of whether the Project would be built at all, which alignment it would take, and which construction methods would be employed). Firstly in 2006 there was a surface and cut/cover option that raised community

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<sup>41</sup> Hearn, A. 1987 *Review of the Town and Country Planning Act*.

<sup>42</sup> Real Estate Institute of New Zealand: [http://reinz.co.nz/public/market-information/market-information\\_home.cfm](http://reinz.co.nz/public/market-information/market-information_home.cfm)

concern. This was followed by the well-publicised 2008 proposal to build the Project as a driven tunnel which set an expectation among the community that the entire SH20 route would be constructed below ground, requiring less property take and community impacts. When the government announced in 2008 that the driven tunnel option would be too expensive to build within the available transportation budget, a number of people expressed disappointment that the NZTA was 'taking the cheap way out' and 'ignoring the wishes of communities' by withdrawing the option (while others were pleased that the Project cost would be brought down to a level they considered fairer). Unfortunately, the protracted Project development process and changed plans have resulted in some people questioning the integrity of the NZTA, and not being able to rely on further commitments made by the organisation with respect to the Project.

A similar reaction could be expected following the decision in May 2010 that some elements of the Project (particularly urban design elements presented to stakeholders and the public in early 2010) would no longer be provided as part of the Project, as alternatives to reserve reinstatement solutions and value engineering have resulted in some scope/design amendments. It is noted that the urban design concepts presented a range of options for urban design elements, bridges and open space replacement. While these were presented as options/alternatives, there is some concern that the community has viewed these options as something the Project would definitely deliver. As set out in section 8, further consultation is required on this.

There has been media coverage and conflicting views between the NZTA, territorial authorities and members of the public in terms of the mitigation package put forward for the Project. A number of people expressed the view that local communities deserve enhancement measures as well as mitigation, as compensation for enduring effects during construction and following completion of the Project. However, the NZTA is limited by what they can realistically deliver within the budget of the Project and also its statutory functions as a land transport provider. It is evident that some community groups (in particular, in Waterview) appear to perceive a greater level of 'ownership' in Project decision making, which has the potential to cause disappointment among groups consulted with when decisions made on the Project have considered a wider range of perspectives and technical/financial considerations. From the commencement of consultation, the NZTA had communicated its intent to 'take into account the views of affected communities in decision making', along with other factors including cost and technical feasibility/considerations. Nevertheless, anecdotal evidence suggests that some people and groups are disappointed that their own expectations/wishes in relation to the Project have not been met by the current proposal. The use of the 'national consenting process' to seek planning approval for the Project was another point of contention among some residents who expressed concern that this would limit public participation in the planning process.

**Overall, the Waterview Connection is considered to result in minor positive impacts in some cases, and minor to moderate negative social impacts in other cases, on the attitudes, expectations and aspirations of local communities (depending on people's specific circumstances during the planning phase). Impacts range from Sector to Sector, but are generally considered to be the most severe in Sectors 5 and 7-9 where there have been a variety of different proposals to construct the SH20 Project over the last ten years.**

## 7.1.2 Wellbeing and Way of Life

### Wellbeing/ Quality of Life

People's reaction to change is real and unavoidable, and can lead to feelings of stress and powerlessness. In the current planning phase, anticipation of the Project proceeding and fear associated with the nature and scale of the change to be brought about by the Project is causing stress and adverse emotional wellbeing impacts for some local residents. This is principally the case for residents of Sector 1 and 5-9, where the proposed works are substantial and require residential property acquisition.

The level of uncertainty surrounding whether or not the Project will proceed has been creating stress and worry for some individuals and families in the study area, particularly those who live in proximity to the Great North Road (Sector 5) and Maioro Street (Sector 9) Interchanges where some property acquisition will be necessary irrespective of tunnel proposals. Currently a number of residents in the SH20 study area do not know exactly how the Project will affect them, given its long option development history and recent changes to the extent and location of tunnelled segment. Some residents have commented that changing plans for the construction and routing of the SH20 section of the Project have resulted in 'life on hold' since public discussions commenced approximately ten years ago. For residents affected by Sector 1 and 6 works, there has also been an element of 'life on hold' following the announcement of property acquisition plans for the SH16 upgrade in 2009. However, the overall impact of this has been less widespread than for than that experienced for SH20, given that the areas for widening are confined to the existing motorway route, and the less prolonged planning timeframes. The opinion has been expressed that this uncertainty is not fair to residents, who need to be provided with some certainty about the Project to enable them to 'move on' with their own lives and make future plans (particularly if they are looking to sell, develop their properties or relocate). This impact has been reported throughout the planning phase and is considered to result in a negative impact on the emotional wellbeing of those individuals that have reported concern. In order to minimise these impacts, proactive and early property purchase has played a role in reducing the uncertainty for individual households in the Project area. In response to the Project, this strategy has already been implemented for 140 properties for SH20, and 30 properties for SH16 (at the time of writing). This staged approach to property acquisition has played a positive role in enabling individuals to move on with their lives in their own time, and to some extent provides communities with a 'transition period' prior to the commencement of construction.

Anticipation of impacts that will be brought about by construction and completion of the Project can also result in disruption to people's lives and quality of life in the planning phase. In consultation, residents reported concern and in some cases stress over the anticipation of lost quality of life during construction and operation of the Project (largely from fear of 'annoyances' such as noise, vibration, perceptions of impacts from air quality and the potential for crime associated with construction and/or operation of the motorway). For some residents this has been worsened by media speculation as to the scale of effects that may be brought about by the Project. This is particularly the case given that a confirmed construction programme has not yet been communicated to the public. However, in this planning phase it is important to note that it is often the anticipation of effects that causes greater stress/wellbeing impacts than the actual wellbeing impacts experienced once the Project is operational.

While recognising and assigning due importance to the impacts experienced by those residents affected by property acquisition and those who have experienced stress/wellbeing impacts, it is also important to represent



a balanced viewpoint in this SIA. A number of local residents spoken to have reported that the Project is not having any impact on their lives in the planning phase. A number reported that they were looking forward to the Project being constructed after so much consultation and planning having already taken place. Others have reported that they are not concerned by the Project in this early planning phase, and that subject to appropriate mitigation measures to minimise construction and operational impacts, that they are supportive of the Project proceeding. For these residents, impacts during the planning phase are considered to be neutral.

### **Health Impacts**

While concern has been expressed over the potential for health impacts as a result of construction and operation of the Project, there are no health impacts associated directly with the planning phase (other than the issues of people's wellbeing cited above).

### **Property Requirements/Land Take**

As detailed in section 8 of this report, proactive and early property purchase has played a role in reducing the uncertainty for individual households in the Project area. The primary reason for implementing this strategy has been to minimise property acquisition impacts on both an individual and community level, by enabling individuals to move on with their lives in their own time, and to some extent providing communities with a 'transition period' prior to the commencement of construction. This staged approach has also helped to minimise impacts associated with affected residents 'flooding the market' when looking to relocate within the same neighbourhood at the same time as others affected by the Project. Therefore, the timing of property acquisition is such that property negotiations have already taken place for a number of the properties required as part of the Project (including Housing New Zealand and private properties). Social impacts of property acquisition are assessed as an operational effect in section 7.3 of this report, and are also discussed briefly from a community perspective during the planning phase (below).

While not directly raised as a concern during consultation, the requirement to purchase the strata rights to properties located directly above the tunnel could challenge some people's expectations of their right to develop and use their property. However the nature of the Project (which proposes an encumbrance on the use of land 4-7m below ground) means that this impact is considered minor to negligible from a social perspective.

### **Patterns of Day to Day Living**

No impacts to people's daily living patterns have been reported during the planning phase (this differs from the commencement of physical construction works, as discussed in the subsequent section of this assessment).

### **Leisure and Recreation Opportunities**

As discussed under 'community infrastructure' (below), Council has indicated that the uncertainty created by the Project has resulted in under-investment in a number of reserves across the local study area (including Waterview Reserve, Heron Park, Phyllis Reserve, Harbutt Reserve and Alan Wood Reserve). Consequently this has had some (limited) impact on people's recreation opportunities in terms of the quality of local facilities, though it is acknowledged that this is not a direct result of actions of the NZTA/Project team. Beyond this, no further impacts on leisure or recreation opportunities have been reported in the current planning phase.

**Overall, wellbeing and way of life impacts during the planning phase are considered to range from neutral to moderate negative impacts, reflective of the range of opinions and level of concern expressed by individual residents within the study area, and the uncertainty of the Project's planning process.**

### 7.1.3 Culture

#### Shared Beliefs, Values and Practices

Motorways are a well-established feature in New Zealand (particularly in Auckland) and can be considered an accepted part of the urban cultural landscape<sup>43</sup>. SH16 is a long-established feature in Sectors 1-4 and 6 within the local study area. Vehicle ownership rates in the local study area are relatively high (90% of households had access to at least one vehicle in 2006, an increase from 85% in 1996) and motorways are widely used by most study area residents. The planning phase is not considered to result in any impact on people's culture, shared beliefs, values or practices.

#### Cultural/Heritage Landscapes

Archaeological sites were identified by some people as of particular importance in SH20 consultation, especially the Star Mill/Tannery site in Sector 5. Others reported that cultural/heritage sites were not important and 'only valued by the minority'. However, any actual impact to these sites will not occur until the construction phase of the Project.

**Overall, the Project is not considered to result in any social impact in relation to people's culture during the planning phase.**

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<sup>43</sup> It is recognised that feedback throughout consultation has reflected an increasing desire among some residents to direct future transport investment into public transport options rather than roading. This approach is reflected in the new Auckland Regional Land Transport Strategy which prioritises 'mixed investment' in both public transport and roads.

## 7.1.4 Community

### Community Infrastructure

Waterview Primary School and Kindergarten are the only community facilities that have reported experiencing effects in this early planning stage. This is largely due to speculation over the likely scale of impacts on the school during construction and operation of the Project, and due to early effects of property acquisition (from those residents who have been party to early negotiations). The Ministry of Education (MoE), Waterview Primary School and Waterview Kindergarten have reported that these factors have had some impact on reducing the school and kindergarten rolls since Project investigations commenced in 2000, and particularly since 1995/6 when the Project route alignment was confirmed and the staged acquisition of selected properties commenced. The scale of these roll impacts are reported to be:

- Waterview Primary School: In the order of 25% below the peak roll of around 200 students in 1998-2000 (it is acknowledged that other factors eg. population change (external to the Project) have also played a role in roll fluctuations, similar to the roll fluctuations recorded between 1990-2000, prior to the commencement of Project discussions); and
- Waterview Kindergarten: In the order of 15% of the kindergarten roll (again, it is acknowledged that other factors external to the Project have also played a role in roll fluctuations).

The school and kindergarten have reported concern that further property acquisition and construction disruption could result in additional impacts on the rolls (and potentially future viability) of the facilities. This, together with the anticipation of impacts of the construction and operation of the Project, are causing worry and uncertainty among some parents and staff. In this respect, it will be important to communicate clearly and honestly about future Project decisions and mitigation plans. This will help to minimise uncertainty and provide people with assurance about the extent to which mitigation will address relevant concerns that may otherwise cause people to move from the school/kindergarten or neighbourhood in the planning phase. The MoE have indicated that they are committed to addressing issues for the school and kindergarten particularly in the planning and construction phases of the Project.

The uncertainty of the Project location and its timing has also been cited by Councils as one reason for a lack of investment in reserves across the study area. Consultation with the territorial authorities (particularly Auckland City Council) indicates that this is unlikely to change until a confirmed planning decision has been made on a Project alignment. Underinvestment is particularly evident in Waterview Reserve (Sector 5), Heron Park, Phyllis Reserve and Harbutt Reserve (Sector 8), and Alan Wood Reserve (Sector 9). In this respect, it is considered that a confirmed decision on the Project will yield positive benefits in terms of providing Council with the necessary level of certainty required to resume investment into Project area parks, particularly for those reserves not physically affected by the Project (eg. Heron Park, and Phyllis and Harbutt Reserves).

### Community Cohesion, Character, Structure and Stability

As previously discussed, the timing of property acquisition is such that the majority of property acquisition has taken place during the planning phase. Households generally fall into 3 categories: those who have elected to

proceed with an early purchase and have already moved on, those who have a tenancy agreement with the NZTA until the commencement of construction, and those electing for a deferred purchase. The scale of this is in line with the extent of property acquisition required in each area (a total of 41, 103 and 29 households respectively will be taken prior to the commencement of construction). As such, there has already been some change in community composition in Te Atatu, Waterview and Owairaka associated with those households that have already moved on from the area.

In addition, some Waterview residents not directly affected by property acquisition have indicated that they will choose to move from the area (either during the planning or construction phase) in anticipation of the Project proceeding. Hence, there has already been a degree of turnover of the Waterview population in the early planning phase as a result of the Project, and it is likely that this will continue through to the construction phase as a result of further voluntary relocation of existing residents<sup>44</sup>. Beyond this, the main community impacts associated with the current planning phase relate to people's concern over the continued viability of the Waterview community, associated with the property acquisition requirements of the Project. One reason for this is considered to be due to the high degree of misunderstanding about the Project's property acquisition requirements<sup>45</sup>, which has caused some concern about the scale of associated community effects envisaged by Waterview residents. Generally impacts on the Waterview community in the planning phase are considered minor to moderate negative impacts in the planning phase. These effects have not been reported elsewhere in the study area.

Despite the uncertainty surrounding the Project, this has not appeared to have impacted on the desirability of Waterview as a place to live, as evidenced by the relatively high level of population growth experienced between 2001-2006 (10%). Population growth over the same time period has been more limited in Owairaka (1-2%), though it is likely that this is more to do with growth capacity rather than as a direct result of the Project itself. Likewise, deprivation rankings have not changed substantially (by more than 1 score) for any of the CAU's in the Project area, indicating that the Project has had little measurable impact on the socio-economic composition of the neighbourhoods in this planning phase (up to 2006). Residential mobility indicators (Census variable 'years at usual residence') show that mobility patterns in Waterview were generally similar between 1996 and 2006 (with a very small increase in the number of residents who have lived at their current location for shorter periods of time, consistent with trends for the wider Auckland region). Overall, Census data does not indicate

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<sup>44</sup> The scale of this is difficult to define, given that 2011 Census statistics are not yet available (which would highlight population change trends). The information used for this assessment is drawn primarily from discussions/interviews with residents and Waterview Primary School/Kindergarten.

<sup>45</sup> As evidenced by recent Project consultation feedback - a number of submissions received in 2009 indicated opposition to the Project on the basis of the entire 365 dwellings required for the Project being from the Waterview suburb (rather than split across the study area, as was the case), and the consequential impact this would have on the Waterview community.

any notable change in residential mobility between 2001 and 2006. This is consistent with feedback suggesting that the main impacts of the Project (in terms of some 'turn-over' of residents) has occurred post-2006 (with the preferred route was publically confirmed).

### Social Tensions/Divisions

The Project is causing some tension within communities in the current planning phase (eg. in consultation), between those groups and individuals who support and those who oppose the Project. This is evident in some community organisations (eg. affected schools), however this tension is not considered to result in a negative impact that is more than minor in nature. Conversely, members of the community have also reported that they have been 'galvanised' through the action of attending focus groups and organising group responses to the Project (whether support or opposition), which is considered a positive community impact in terms of strengthening social capital and a 'sense of community' (albeit formed for Project opposition purposes).

**Overall, local community impacts of the Waterview Connection during the planning phase are generally considered to range from minor to moderate negative impacts, mainly experienced by the Waterview community. The strategic advance purchase of properties in the Project area is considered to have mitigated potentially greater adverse social impacts relating to social tensions in this planning phase.**

## 7.2 Effects during the Construction Phase

### Overview

**Effects of the Project during the construction phase include disruption to way of life, health and wellbeing, community linkages and attitudes/expectations resulting from the physical presence and scale of construction works associated with the Project. In particular, these impacts are relevant in Sectors 1, 5, 6, 7, and 9.**

### 7.2.1 Attitudes, Expectations and Aspirations

#### Attitudes

A five to seven year construction programme will have a fundamental change on those areas with main construction sites and where major construction works are proposed (particularly Sectors 1, 5, 6, 7 and 9). An initial transitional period is anticipated at the commencement of construction, due to the introduction of construction nuisances/disruptions, and the anticipation of effects that the Project will generate for residents affected by SH16 and SH20 works. A significant concern among some members of the community is that the construction period could inhibit people's ability to go about their daily lives and their sense of enjoyment at home and in their local community. This is discussed below in section 7.2.2. However, a number of residents have also indicated that as long as construction activities are managed according to a best-practice approach which minimises impacts and disturbances as far as possible, they are not too concerned over construction impacts. This includes a number of local residents sharing the view that the NZTA should 'hurry up and build

the Project'. In this respect, impacts during the construction period will depend largely on the individual perceptions of local residents.

### **Expectations and Aspirations**

The commencement of construction will put an end to the uncertainty surrounding the SH20 Project during the long planning phase, providing a benefit in enabling people to move forward with their lives and future plans/aspirations. In this sense, the commencement of construction will be particularly symbolic in signaling to local residents that the planning decision is firm and real. Further, the construction period will provide residents with an opportunity to become accustomed to changes brought about by the Project, enabling people to adjust their expectations of the character and future of their neighbourhood and for those areas to physically transform or restructure around the project. This is particularly relevant for the SH20 component of the Project (Sectors 5 and 7-9) where the level of change to people's expectations and aspirations will be the greatest. This is also relevant for residents in Sector 1 that will share a new border with SH16 as a result of the reconfiguration of Te Atatu Interchange and associated removal of houses in Titoki Street and Alwyn Avenue.

Some residents have expressed concern that a perceived reduction in house 'saleability' during the construction period would impact on their future plans to 'move on' from the neighbourhood. In individual cases, it is acknowledged that this could restrict (but not inhibit) people's future plans, however on balance impacts are considered to be minor and not widespread.

The presence of construction yards in Sectors 1 and 5-9 will challenge some local resident's expectations of neighbourhood character and safety, associated with 'annoyances' such as noise, vibration, amenity impacts, perceptions of impacts from air quality and the potential for crime associated with construction of the motorway. This is discussed further in section 7.7.2.

**Overall, impacts in relation to people's attitudes, expectations and aspirations are expected to range from minor positive to minor negative impacts during construction, depending on individual perspectives and the level of nuisance experienced by local residents.**

## 7.2.2 Wellbeing and Way of Life

### **Wellbeing/Quality of Life**

Generally, the commencement of construction is when most individual wellbeing and way of life impacts will begin to be felt. The Project represents a major construction activity in terms of the period and scale of works involved. A estimated construction period of between five and seven years is planned, involving extensive above ground works, contractor sites occupying public space, and up to approximately 1,000 workers on site per day across the study area. The construction period is significant in duration and will impact on the 'liveability' of the study area in a moderately long term way. Construction works can be socially disruptive and represent an annoyance to surrounding residents and road users, depending on how well they are managed. Construction impacts will be the greatest for residents adjacent to construction yards (shown in Table 7-1), given the level of activity that will be occurring in these areas. Impacts will also be felt by residents where works are undertaken



outside of the designated construction yards. Table 7-2 shows sensitive receptors for works outside of construction yards.

**Table 7-1: Construction Yards and ‘Sensitive Sites’**

Note: Construction yards in Sectors 2, 3 and 4 have been excluded given that no sensitive land uses exist in these areas. Refer to Part F of the AEE for construction yard plans.

Construction Yard	Sensitive Sites/Social Environments in Vicinity
1	<ul style="list-style-type: none"> <li>• Dwellings on opposite side of Te Atatu Road</li> <li>• Users of the Harbourview Orangihina Park</li> </ul>
5	<ul style="list-style-type: none"> <li>• Dwellings on Great North Road</li> </ul>
6 (24/7 operation)	<ul style="list-style-type: none"> <li>• Dwellings on Waterbank Crescent and Herdman Street</li> <li>• Waterview Primary School and Kindergarten</li> </ul>
7 (24/7 operation)	<ul style="list-style-type: none"> <li>• Dwellings on opposite side of Great North Road and behind these within Waterview</li> <li>• The BP Petrol Station and Waterview Dairy</li> <li>• Waterview Primary School and Kindergarten on the opposite side of Great North Road</li> <li>• Users of the Oakley Creek Esplanade Reserve</li> </ul>
8	<ul style="list-style-type: none"> <li>• Dwellings on Bollard Avenue and Hendon Avenue</li> <li>• Avondale Motor Park</li> <li>• Users of Alan Wood Reserve</li> </ul>
9 and 10 (24/7 operation)	<ul style="list-style-type: none"> <li>• Dwellings on Methuen Road</li> <li>• Avondale Motor Park</li> <li>• Users of Alan Wood Reserve</li> </ul>
11	<ul style="list-style-type: none"> <li>• Dwellings on Hendon Avenue</li> </ul>

Construction Yard	Sensitive Sites/Social Environments in Vicinity
	<ul style="list-style-type: none"> <li>Users of Alan Wood Reserve/Hendon Park</li> </ul>
12	<ul style="list-style-type: none"> <li>Dwellings on Valonia Street and Richardson Road</li> <li>Users of Alan Wood Reserve/Hendon Park</li> </ul>

**Table 7-2: Construction Works and Sensitive Sites**

Note: Sectors 2, 3 and 4 have been excluded given that no sensitive land uses exist in these areas.

Sector	Sensitive Sites/Social Areas in Vicinity
1	<ul style="list-style-type: none"> <li>Dwellings on Titoki Street (north of SH16)</li> <li>Dwellings on Alwyn Avenue, May Avenue, Milich Terrace, Paton Avenue and Marewa Street (south of SH16)</li> <li>Users of Jack Colvin Park and McCormick Green</li> </ul>
5/7	<ul style="list-style-type: none"> <li>Dwellings on Maryland Street, Hawea Road, Smale Street, Berridge Avenue, Alberta Street and Montrose Place (north of SH16)</li> <li>Dwellings on Great North Road, Waterbank Crescent and Herdman Street (south of SH16)</li> <li>Mason Clinic and northern end of the Unitec site</li> <li>Waterview Primary School and Kindergarten</li> <li>Users of the Oakley Creek Esplanade Reserve</li> </ul>
6	<ul style="list-style-type: none"> <li>Dwellings on Great North Road (north of SH16)</li> <li>Dwellings on Surtherland Road, Parr Road North and South and Novar Place (south of SH16), Sutherland Road and Collectively Kids Childcare Centre</li> <li>Housing New Zealand pensioner facility on Parr Road South</li> </ul>
9	<ul style="list-style-type: none"> <li>Dwellings on Hendon Avenue, Harlston Road, Stewart Road, Range View Road,</li> </ul>

Sector	Sensitive Sites/Social Areas in Vicinity
	<p>Olympus Street, Hargest Terrace and Richardson Road (north of the proposed SH20)</p> <ul style="list-style-type: none"> <li>• Dwellings on Bollard Avenue, Methuen Avenue, Whittle Place and Valona Street (south of the proposed SH20)</li> <li>• Avondale Motor Park</li> <li>• Odyssey House and School</li> <li>• Christ the King School</li> <li>• Users of Alan Wood Reserve/Hendon Park</li> </ul>

As an approximate indication of the likely scale of impact of potential construction nuisances, a series of GIS layers/plans have been prepared as part of the CEMP, which identify the following:

- In the order of 500 land parcels are located within 20m of construction activities: Residents are likely to be adversely affected by construction noise and particular attention to ongoing consultation is required for these properties. While this is generally sufficiently distant from construction works to enable works to be undertaken within normal daytime construction noise standards without the implementation of specific mitigation, some noise levels at night are likely to have adverse impacts (being noticeable and significantly greater than other expected night time noise);
- A further 200-300 land parcels (approximate) are located between 20-50m of construction activities: While this is generally sufficiently distant from construction works to enable works to be undertaken within normal daytime construction noise standards without the implementation of specific mitigation, some noise levels at night are likely to have adverse impacts (being noticeable and significantly greater than other expected night time noise);
- In the order of 1,500 land parcels are located within the dust sensitivity area (100m buffer from the Project construction footprint), though it is noted that generally these effects can be managed effectively via the measures set out in the CEMP;
- In the order of 225 land parcels are located within the vibration sensitivity area for blasting (the impacts associated with these activities are discussed in the Construction Noise and Vibration Management Plan. As noted in those assessments, there are two areas of impact associated with vibration: 1) the potential for physical property damage, which is not a specific concern for this Project; and 2) peoples response and concern for vibration. It is important to ensure that the community is well informed and prepared for vibration and particularly blasting events (eg. if something is known and anticipated people generally have a higher tolerance to it than if it is unexpected and unexplained); and

- Traffic disruption has the potential to affect residents from across the local study area (and beyond), as disturbances are not confined to particular properties.

These numbers should be read as indicative only, given that some land parcels will have multiple dwellings, and that tolerance to construction emissions varies widely from person to person.

Noise will be one of the most disruptive impacts to local residents during construction. A detailed assessment of construction noise effects has been prepared in Technical Report G.5 *Assessment of Construction Noise Effects*. In summary, the following social impact assessment and conclusions are made with respect to this construction noise assessment:

- In Sector 1, works from the majority of construction activities can be undertaken within normal daytime construction standards. However, when plant is operating close to receivers, noise levels from some activities have the potential to exceed the limits;
- In Sectors 5, 6, 7 and 8, noise can generally be managed to a reasonable level with the implementation of recommended noise mitigation measures;
- In Sector 9, works can generally be undertaken within normal daytime construction standards. However, for certain activities, noise construction standards may be exceeded where noise barriers cannot be used. The construction of Richardson Road bridge will generate noise levels which would be above the night-time construction noise standards. In order to ensure that sleep disturbance is minimised for residents of these dwellings, mechanical ventilation may be needed in around 35 households in Hendon Avenue and Methuen Road, so that external windows can remain shut in bedrooms. Given the duration of work and the proximity of some particularly sensitive sites such as the Avondale Motor Park (where residents have low levels of acoustic insulation), effects from night works could include annoyance and potentially sleep disturbance effects. Longer term residents at the Avondale Motor Park are likely to be disproportionately affected due to the temporary nature of their living accommodation; and
- While day time noise will generally not affect residents beyond some nuisance/disturbance during particularly noisy works, people who stay at home during day including those that work from home, are sick or who work night shifts could be disproportionately affected by long periods of noisy works. During particularly noisy works, this may impact on people's enjoyment of outdoor living areas (or temporarily restrict their use in extreme cases). Good noise management is therefore essential to reducing these noise effects as far as practicable.

Where all practicable mitigation measures have been considered and noise levels remain above the Project night time noise construction standards, temporary relocation of residents will be considered on a case-by-case basis. This will be potentially associated with night works in Sectors 5, 7 and 9, particularly noisy works in Sector 6, and tunneling underneath Sector 8. Technical Report G.5 *Assessment of Construction Noise Effects* recommends that where residents are unwilling to relocate, or where the construction period is sufficiently long as to make relocation not practicable, sound insulation improvements/provision of mechanical ventilation should be considered as an alternative. It is recognised that temporary relocation of residents has the potential for social

impacts associated with disruption to people's daily living patterns, and will be determined according to the preference/situation of individual households affected.

Overall, it is considered that adverse vibration effects can be avoided, remedied or mitigated by the implementation of the monitoring and mitigation detailed in the Construction Noise and Vibration Management Plan. However, the potential for perceived noise and vibration impacts can sometimes be greater than the actual impacts experienced, given the visibility or knowledge of potential noise and vibration generating activities taking place. In this case, regular communication with residents will be an important mitigation mechanism.

While rarely expressed in consultation, fear of subsidence (associated with the tunnelling works) could cause some worry and concern among residents living directly above the proposed tunnel. Nevertheless, effects on residential dwellings in the area as a result of tunnel construction are considered to be in most cases negligible, and in a limited number of areas slight (as per Technical Assessment G.13 *Assessment of Groundwater Settlement Effects*). The Unitec residential flats on Great North Road have been identified as a particular settlement risk, due to the existing condition of the building. However, it is anticipated that settlement issues can be carefully managed through monitoring and inspection through construction (proposed as part of the CEMP). Again, good communication during construction will be the most important way to manage potential impacts on people's wellbeing in this respect.

Construction of the Project will entail large scale earthworks which will generate dust. Dust can affect human health and be a nuisance to the surrounding public by causing dust deposits on and in houses, cars and washing. Dust may impact on people's enjoyment of outdoor living areas and cause perceived or actual health impacts. As such, dust management and monitoring measures are proposed as part of the CEMP, including procedures for responding to complaints. Once the proposed dust monitoring and mitigation measures are put in place, dust management is not generally expected to be an issue. At Alan Wood Reserve (Sector 9), odour discharges are possible as construction works involve the disturbance of land contaminated with organic wastes. The closest sensitive receptors are the Avondale Motor Park, residential properties along the southern side of Hendon Avenue and the Odyssey House School and residential properties on Methuen Road. Management measures are proposed as part of the CEMP, but some degree of impact is still foreseen. Again, the emphasis on communication over the construction period is a particularly relevant measure to mitigate potential social impacts (in terms of providing the community with information on upcoming construction works and allaying concerns and fears that may otherwise be associated with a perception that effects are 'unexpected').

Excessive smoke and odour discharges from trucks, earth moving machinery and generators, while unlikely, could cause comments from neighbours under adverse meteorological conditions if vehicles and machinery are not well maintained. Technical Assessment G.1 *Assessment of Air Quality Effects* recommends that contractors should be required to keep trucks and machinery used onsite appropriately maintained. This recommendation is endorsed in this SIA.

Construction yards areas represent a significant change in the amenity and the 'look and feel' of neighbourhoods for local residents (particularly those with a view over construction sites), over a reasonably long duration. This may affect people's pride in neighbourhood but is considered to have little impact on wellbeing or way of life overall. In consultation, residents expressed concern over the potential for increased

crime during construction, associated with the influx of temporary workers, the potential for loitering in construction areas after hours and of attracting graffiti. This will be managed by the CEMP through security and visual amenity provisions.

Overall, construction activities are considered to result in reduced 'liveability' during the construction period. Impacts on people's quality of life and wellbeing are expected to range from minor to potentially significant impacts, varying according to proximity to construction areas and the duration of exposure. The most significantly affected residents will be those living within 20m of the Project footprint (in the order of 500 land parcels). This potential impact has been taken into account in defining the designation footprint, particularly in Sector 9, where the potential adverse effects on some properties (eg. 103-123 Hendon Ave) are considered sufficiently significant to warrant inclusion of these properties within the proposed footprint. Importantly, the CEMP seeks to minimise construction disturbances and nuisances on residents as much as practicable, using best practice management and monitoring measures which will help to reduce social impacts as much as possible during the construction period. An important mitigation measure for social impacts is communication with potentially affected residents (and wider community) over the construction period (see section 8).

### Health Impacts

There is concern over health impacts from construction dust, noise and reduced access to open space among some members of the community. The following is noted with respect to these concerns:

- In recognition of the potential health impacts of dust, best practice management and monitoring measures are proposed as part of the CEMP which will significantly reduce dust impacts during the course of construction;
- Actual and perceived health effects arising from noise exposure vary from person to person. The World Health Organisation has determined that noise levels in excess of 65 decibels may cause restricted behaviour and secondary health effects such as stress. The NZS6803 daytime construction noise standard allows noise of up to 95 decibels (short term) and 85 decibels (long term) during weekday daytime hours, so as noted previously it is likely that some residents may experience stress and/or nuisance as a result of construction noise; and
- Access to open space during construction will be restricted (but not inhibited) in some areas, due to the presence of construction yards. Given the provision of temporary sportsfields/recreation areas to mitigate these construction impacts (and the availability of reserves/green space elsewhere in the local study area), this is not considered to result in health impacts.

Technical Report G.9 *Assessment of Land and Groundwater Contamination* concludes that the proposed construction works are likely to result in human health guidelines being exceeded in isolated areas in Sectors 1, 5 and 6. A Project Contaminated Land Management Plan has been prepared to control the off-site migration of contaminants and to minimise the exposure of construction workers to contaminated soils. Once these management measures are in place, the contamination health risk in these Sectors is considered to be low. Generally, perceived health impacts in the construction phase are considered to be less significant than those anticipated by many residents once the Project is operational.



### Patterns of Day to Day Living

The construction impacts discussed above also have the potential to impact on people's patterns of daily living during construction. As noted, particularly disruptive construction activities may impact on people's use of outdoor living courts, may disrupt sleeping patterns and may cause annoyance/general disturbance among local residents (mainly those directly adjacent to construction areas). Impacts will be mitigated or managed to the extent practicable through the provisions of the CEMP which will help to minimise impacts on people's patterns of day to day living.

Traffic disruption also represents a likely disruption to people's patterns of day to day living during the construction period. Impacts on regional transport networks are discussed in section 6.1, and include traffic impacts during the peak morning and afternoon periods along SH16 associated with the completion of widening works along the corridor. These impacts will affect residents who travel along SH16 in peak times, whether by private vehicle or bus (mainly residents living in Sectors 1 and 5-8). In Sector 1, works associated with the Te Atatu Interchange reconfiguration (anticipated to take around 42 months) are expected to cause traffic delays around the peak periods of the day and in certain stages of the construction. This delay is likely to generate some frustration among residents given the wide use of the interchange. Technical Report G.18 *Assessment of Transport Effects* has recommended that footpath and cycle facilities are maintained on at least one side of the Te Atatu Bridge throughout the works, allowing continual access to be provided across the interchange. This is important from a social perspective given its wide level of use and the importance of the physical connection between Te Atatu South and the Te Atatu Peninsula. Construction effects on the local road network in Sector 6 are not generally envisaged (beyond traffic impacts on SH16). In Sectors 5/7, the existing number of lanes on Great North Road will be maintained during peak travel times, however effects on traffic are still anticipated around the peak periods of the day and in certain stages of the construction. Outside of peak travel periods, it is generally considered that the implementation of traffic management measures can satisfactorily manage traffic effects on Great North Road such that they would be no more than minor. It will be necessary to provide alternative arrangements for pedestrians and cyclists who use the existing shared path on the eastern side of Great North Road and as part of the traffic management measures, appropriate crossings of Great North Road are proposed to provide access to the path on the western side (these recommendations are further detailed in Technical Report G.18 *Assessment of Transport Effects*).

Tunnelling works in Sector 8 will not have any direct effects on the surrounding transport network. Other than the works at Richardson Road, construction in Sector 9 will generally not have any direct effects on local roads. The narrowing of lanes and associated speed limit reductions on Richardson Road will result in additional delays for traffic on Richardson Road during the twelve month period of the works in that vicinity, which may have adverse effects at certain times, but is in overall terms considered to be minor given the works duration. As detailed in Technical Report G.18 *Assessment of Transport Effects*, pedestrian and cycle access across along Richardson Road should be maintained throughout the works (as part of the traffic management measures proposed). Site access to construction yards in Alan Wood Reserve is also proposed off Hendon Avenue, which will cause nuisance and noise effects on local residents. To reduce these effects, it is recommended that Hendon Avenue is not used as a 'main' access and that where possible, construction vehicle access off Hendon Avenue be minimised to reduce nuisance impacts on residents. This is discussed further in Technical Report G.18 *Assessment of Transport Effects*. The temporary relocation of bus stops in Great North Road (Sectors 5/7) and Richardson Road (Sector 9) will be communicated and managed in accordance with the Construction Traffic

Management Plan, to avoid impacts on people's daily living patterns. Overall, delays caused by construction traffic can be expected to make life somewhat less convenient for pedestrians, cyclists and motorists in the local study area, with most disruption able to be mitigated by forward planning by the individuals affected. As such, impacts are not generally considered to be minor to moderate. It is also noted that traffic delays during construction will be off-set by reductions in traffic on local roads following the completion of the Project (discussed in section 7.3.2).

Cycleway construction works will generally be completed with negligible impacts on people using the Northwestern Pedestrian/Cycle Way (Sectors 1-6). During the construction of the new Whau River pedestrian/cycle bridge (Sector 2) the existing cycleway would be retained and then diverted to the new bridge following completion. Access for users along other parts of the existing Northwestern Pedestrian/Cycle Way through these Sectors would be retained throughout the construction period. It is possible that some very short duration and localised closures may be necessary due to the other construction works, but these could be undertaken at night time and would have negligible effects on the very limited number of users in this period. Construction of the new pedestrian/cycle bridge at Patiki Road will require a diversion of users from the existing cycleway. With the implementation of the management measures in the Construction Traffic Management Plan (provision of appropriate crossing facilities on Patiki Road and signposting of the diversion route), effects on cycleway users will be minor over this relatively short period. Some temporary diversion of the cycleway is likely to be required in Sector 5, with effects considered to be less than minor given the anticipated short duration of the works. Overall, impacts on cyclists using existing cycle routes are not expected to be more than minor. Likewise, impacts on pedestrian movements are generally considered to be minor, with some routes expected to be somewhat less convenient but the duration of disruptions relatively confined. The CEMP sets out requirements for maintaining pedestrian access during construction.

Some property accesses will be altered by the Project. It is considered that the effects of this are minor, as works will be completed for alternative access prior to construction works commencing. This is particularly relevant in Sectors 1 and 7 (management of these accesses is detailed as part of the Construction Traffic Management Plan). In Sector 9, the Richardson Road Bridge works will have effects on the existing on-street parking and access to Valonia Street (which will be realigned as part of the Project), however effects are considered to be minor (particularly given the wider land take in this area).

### **Property Requirements/Land Take**

The timing of property acquisition is such that dwellings are required to be either demolished or vacated prior to the commencement of construction. Effects associated with construction are not considered to be 'temporary' construction effects, but rather have ongoing impacts throughout the operation of the Project. As such, social impacts of property acquisition are assessed as an operational effect in section 7.3 of this report.

### **Leisure and Recreation Opportunities**

Access to open space in growing communities is vital to people's wellbeing, health and recreation opportunities. Open space is particularly important for lower socio-economic communities, where recreation opportunities may be more limited than for better resourced neighbourhoods. Given this significance, there has been widespread concern expressed in consultation over impacts from the occupation of reserve space during

the five to seven year construction period. The primary construction laydown area for Sector 1 will be in Harbourview-Orangihina Park, in the section of the park that is presently leased by the Te Atatu Pony Club, a private organisation. The northern scenic park (open to public) will be unaffected by construction. Hence, social impacts associated with this are considered to be appropriately addressed through private negotiation between the NZTA, WCC and Te Atatu Pony Club. The unnamed parcel of open space land at 1074 Great North Road (Sector 6) will be used as a construction yard, before a permanent stormwater pond is established on the site. Given that this area is not presently used as a recreation area<sup>46</sup>, this is not considered to result in any impact to leisure and recreation opportunities for residents in the study area. Approximately 2.1ha of the Oakley Creek Esplanade Reserve (Sector 7) will be used as a construction yard. The area is relatively small and confined in the context of the overall reserve, and walkways will be maintained during construction. Noise and amenity impacts are not considered to be big issues given the density of vegetation screening along most areas of the Oakley Creek walkway. As such, limited restriction to usability and enjoyment is envisaged during the construction period.

The main impacts on people's leisure and recreation opportunities will occur at Waterview Reserve (Sectors 5/7) and Alan Wood Reserve (Sector 9). 100% of the 'active reserve' part of Waterview Reserve<sup>47</sup> and approximately 75% of Alan Wood Reserve/Hendon Park are required throughout construction. The loss of this open space will (without mitigation) result in a decrease in leisure and recreation opportunities for local residents, including both formal recreation opportunities (sports fields, playgrounds) and informal recreation opportunities (passive recreation including use of walkways/linkages and children playing). These reserves also perform an important community function of meeting areas and social spaces. Measures to mitigate construction impacts are proposed as part of the reserve reinstatement package, and include working with Auckland City Council to confirm opportunities for early upgrades to Saxon Reserve (to help to mitigate the 'community' function of Waterview Reserve), the creation of a temporary playing field area on the edge of the Waterview Reserve/Waterbank Crescent, and the creation of three temporary sportsfields at Alan Wood Reserve. Alternative sportsfields exist in Phyllis Reserve, which are within reasonable walking distance (however, it is noted that the most direct walking access to this area involves crossing the vegetated area of Oakley Creek which some people have reported as having an unsafe feeling). Alternatively for more informal use of sportsfields, the existing Waterview Primary School fields provide temporary recreation space without necessitating travel by car. Given the proposed temporary provision of playing areas/sportsfields, residents are not considered to experience more than minor impacts from the temporary loss of Waterview Reserve. The replacement of other reserve areas (eg. esplanade reserve areas) provides an opportunity to further mitigate these effects and if feasible, early development of these areas is favoured by this SIA. The usability and enjoyment of Alan Wood Reserve is

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<sup>46</sup> The site is fenced off from the public, overgrown and currently appears as a private property which is for sale.

<sup>47</sup> Approximately 2.4ha of this reserve is currently zoned and used for active recreation, with the remainder providing an esplanade reserve along the foreshore.

expected to reduce somewhat during construction with noise, potential dust/odour and amenity impacts, which may deter users and reduce the enjoyment of people who do use the reserve (though generally there will be a reduced level of construction in weekends when the sportsfields will be mostly used). As such, some reduction in recreation opportunities and enjoyment is also expected for residents in Sector 9, resulting in a minor negative social impact for these communities.

There will be limited change to public access to the CMA, or the existing limitations to access of the Whau River navigation channel (used by Te Atatu Boating Club).

**Overall, wellbeing and way of life impacts during construction are expected to range from minor to moderate adverse social impacts, given the long construction duration and scale of noise impacts (potentially leading to temporary sleep deprivation in some locations). Impacts on individuals and households will vary depending on proximity to construction areas, with the most significant impacts envisaged to affect residents living within 20m of the Project footprint.**

### 7.2.3 Culture

#### Shared Beliefs, Values and Practices

Increased noise levels will impact on the sense of 'quiet-ness' particularly in Sector 9, where some residents cited the existing low ambient noise levels as being an important attribute of the identity/way of life of the local area. In SH20 consultation, trees were identified by some members of the community as culturally important. Other respondents did not view specific trees as important, stating that they believed trees to be replaceable. While effort will be made to retain valued trees where possible, construction will necessitate the removal of some trees, which may challenge the cultural values of some people in the study area. Works to realign and culvert Oakley Creek are expected to challenge the cultural values of some local residents, given the importance of Oakley Creek to the cultural identity of some residents in the wider study area. Some environmental impacts are also expected on the Motu Manawa (Pollen Island) Marine Reserve, which will be managed using best practice techniques as part of the CEMP.

Traffic disruptions projected during construction may cause minor impacts in restricting people's accessibility to participate in cultural practices (eg. church attendance or participation in cultural groups) during construction, but overall the impact of such delays are considered to be relatively minor and able to be countered by forward planning (but could result in some frustration for people living in close proximity to the construction yards). Likewise, while pedestrian access in some areas may be made somewhat more difficult, the overall impact on people's accessibility is not considered to limit people's ability to participate in cultural practices.

#### Cultural/Heritage Landscapes

As per Technical Report G.2 *Assessment of Archaeological Effects*, archaeological impacts will primarily occur around the Great North Road Interchange in Sector 5, a heritage area of regional significance comprised of Maori and European heritage features including the Star Mill/tannery, quarry, Maori settlement site and midden. Impacts on key site features in this area have been avoided in the Project design by locating the supporting

piers for ramps on the periphery of the site. However, construction works will cause more than minor archaeological impacts (given the sites' significance). North of the Great North Road Interchange, construction works will potentially destroy approximately 30m of the 130m wall. There is also some potential for destabilisation of parts of the remaining wall as a result of machine movement. Removal of part of the historic stone wall in Sector 5 will also have some effects on the heritage landscape, but these are considered minor as the wall has lost its heritage landscape context. Rosebank Peninsula (Sector 3) is the only other area where recorded archaeological sites may be affected by the proposed works, however these sites have mostly been destroyed/modified and are of limited archaeological value. Impacts in other Sectors are considered to be less than minor. Effects on unrecorded subsurface archaeological deposits is a possible risk (mainly in Sectors 1, 3, 5 and 7), but if such deposits are present they are unlikely to be extensive or significant. A protocol for the avoidance and minimisation of archaeological impacts during construction is included as part of the Construction Environmental Management Plan. Overall, associated social impacts are also considered minor negative impacts.

**Overall, the Waterview Connection is generally considered to result in minor negative social impacts during construction, in relation to people's culture. Impacts are mainly related to the damage of some parts of the regionally significant Star Mill heritage site.**

## 7.2.4 Community

### Community Infrastructure

In Sector 1, there will be some disruption to the Te Puna Reo O Manawanui Early Childhood Centre (located on Titoki Street), given the proximity of the site to SH16 and the Te Atatu Interchange. It is envisaged that construction impacts (eg. noise and dust impacts) can be managed effectively via the measures set out in the CEMP.

Traffic delays along Te Atatu Road and some temporary effects on pedestrian routes along one side of the Te Atatu Interchange are considered to have some minor impacts on the mobility of students travelling through the interchange to attend schools/educational facilities in Sector 1.

The most significant impact to educational sites in the local study area affects Waterview Primary School and Kindergarten. Construction of the Great North Road Interchange and Underpass will result in disruption to the school/kindergarten site. Construction yards 6 and 7 are proposed to be located adjacent to the site (separated by Herdman Street and Great North Road respectively), and may be operational throughout construction. A high level of concern was expressed in consultation that the school and kindergarten site would be located adjacent to a 'construction zone' for a significant portion of children's primary education schooling. As such, the school and kindergarten see the construction period as a vulnerable time in terms of potential impacts (from effects such as noise, dust, vibration and traffic disruption) on children's learning. The following is noted in relation to these potential impacts:

- With suitable mitigation (eg. temporary acoustic barriers, mechanical ventilation and if possible the timing particularly noisy works during school holidays), noise effects on Waterview Primary School can be managed to satisfactory levels. But while daytime noise limits will generally be able to be complied

with within buildings, the site is considered especially sensitive due to its use for outdoor play and activities, which are a normal part of the day to day activities undertaken on site;

- Construction noise in the vicinity of Waterview Kindergarten is likely to exceed the internal noise standards for sleeping areas at times (even with the implementation of noise mitigation measures). From a noise perspective, relocation of the kindergarten may be considered as an alternative mitigation measure if other measures are not practicable;
- Vibration impacts on Waterview Primary School are considered to be low risk and can be managed through the CEMP;
- The kindergarten building is classified as a high risk site for vibration from vibratory rollers, and medium risk for vibration from piling for the cut and cover tunnel. As such, relocation of the kindergarten may also be considered as an alternative mitigation measure from a vibration perspective, if other measures are not practicable;
- The school and kindergarten were identified as sensitive receptors in relation to potential dust impacts. However, it is anticipated that dust impacts can be effectively managed through the CEMP; and
- Traffic impacts and diversions during construction of the Great North Road Underpass may make access to and from the school and kindergarten more difficult, and are projected to increase travel times slightly for students/parents (by several minutes). Traffic safety during construction was also raised by the school as an issue. Access to the Waterview Reserve construction yard is via Cowley Street, directly south of the Great North Road Interchange and not located in the vicinity of the school. However, construction trucks will need to travel along Great North Road to access the yard in the Oakley Creek Esplanade Reserve. As recommended in section 8, maintaining a safe crossing option over Great North Road (close to Herdman Street) will be important enabling children to continue to walk safely to school.

Management and monitoring of noise and air quality effects will also be undertaken as part of the CEMP, and a formal complaints/feedback process established. This will be important not only to manage environmental externalities of construction but also to give parents assurance that there is a process for the NZTA to respond to effects of the Project (rather than leaving this to the parents themselves whose only alternative action may be to remove children from the school). This response measure will be important for both the students attending the school/kindergarten, and those people in the wider community that use the school hall outside of school hours for religious services, community events and other activities. Given the scale of potential noise and vibration impacts, it is expected that there are consequential social impacts of this. In particular, parents/community concern over physical construction impacts has a high potential to result in people not enrolling or even withdrawing children from the facility. This could compromise the viability of the kindergarten in the longer term (eg. even after construction had stopped, the ability for the kindergarten to re-establish with staff and its roll could be difficult). Section 8 recommends that the NZTA undertakes consultation with the Ministry of Education over the potential to temporarily relocate the kindergarten at least during construction. However, it is recognised that the temporary relocation of the kindergarten in itself may have social impacts associated with disruption to the kindergarten operation (eg. people perceiving the facility as 'transient' in the community). It is considered that in part this will be addressed by the nature and location of the temporary

relocation. Further consultation between the NZTA, Ministry of Education and Auckland Kindergarten Association/Waterview Kindergarten is required to determine the most appropriate mitigation solution for the kindergarten during construction (given its sensitivity and proximity to construction of the Great North Road Underpass).

Beyond these direct impacts, it is also likely there will be impacts on the roll of Waterview Primary School and Kindergarten as a result of the Project. Further to the population impacts associated with property acquisition (discussed in section 7.3), some parents have indicated that they may remove their children from the school/kindergarten in anticipation of significant construction disruption and perceived pollution from the ventilation stack. Interestingly, a survey undertaken in early 2009 indicated that overall the Project had 'little impact' on the intentions of parents or caregivers to keep their children enrolled at Waterview Primary School/Kindergarten, or on their intentions to enrol siblings in the future<sup>48</sup>. It is recognised that there is a high degree of uncertainty associated with the likely scale of this impact, and that the perception of anticipated construction impacts is one of the biggest issues in relation to potential roll loss (rather than the actual scale of impacts, given the stringent level of management measures proposed). Overall, it is anticipated that while most construction impacts can be managed in accordance with the CEMP (with the exception of noise impacts on Waterview Kindergarten), there will still be some potentially significant impacts on Waterview Primary School and Kindergarten, associated with potential roll loss during construction. The school and kindergarten have raised concern over implications for funding/staff levels and the viability of the school/kindergarten, should rolls drop further as a result of the Project. As such, section 8 of this report recommends monitoring of roll changes, with action to be taken should monitoring confirm such impacts.

In Sector 6, St Francis School and the Collectively Kids Childcare Centre on Carrington Road have been identified as social activities potentially effected by construction activities. For these educational facilities, it is considered that construction effects (eg. potential noise, dust and traffic effects) can be effectively managed via the CEMP.

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<sup>48</sup> Waterview Primary School and Kindergarten: Awareness and Attitudes of Parents/Caregivers: Communication Research Results (Captivate Limited, February 2009). 30 respondents (77% of those who responded) intended to keep their children at Waterview Primary School until the end of year 6. Of the remaining 9 respondents who were not sure whether they would continue their enrolments, only one mentioned the Project as a reason for this. 19 people (90% of those who responded) indicated that they intended to enrol younger siblings at the school. Of the remaining 2 people who were not sure, one indicated that the Project may impact on this decision. Likewise, 20 respondents (87%) intended to keep their children at Waterview Kindergarten until age 5. The remaining 3 respondents were not sure whether they would continue their enrolments, however this was generally related to proximity reasons than any concerns about the kindergarten or Project. 12 people (80% of those who responded) indicated that they intended to enrol younger siblings at the kindergarten. Of the remaining 3 respondents who were not sure, only one person indicated that the Project may impact on this decision. It is important to note that due to the small sample size of this survey, data should be read as an indication of attitudes only.



Noise may also affect some buildings in Unitec from time to time (the closest buildings to SH16) during short periods of noisy construction works, though generally works are expected to comply with the relevant noise standards. Given that Unitec represents a major traffic generating activity in the area, traffic disruptions on SH16 and Great North Road during construction will have a particular impact on the site in terms of causing delays for staff and students during peak travel times, but overall it is expected that this can be managed with forward planning by the individuals likely to be affected. Unitec building 76 has been identified as having a settlement risk, however, it is anticipated that settlement issues can be carefully managed through monitoring and inspection through construction (proposed as part of the CEMP). Good communication during construction will be the most important way to manage potential impacts on people's wellbeing in this respect.

There may be some short term noise impacts at Christ the King School which exceed the construction standard (associated with the construction of the new section of surface motorway and Maioro Street ramps), though impacts are expected to be relatively temporary in duration. The existing noise wall on the site will help to screen noise and visual impacts during construction. Other potential construction effects on the school (eg. dust, traffic) will be managed through the measures identified in the CEMP, in order to minimise potential adverse effects.

Impacts on Owairaka District School (Sector 9) are expected to be confined to traffic impacts along Richardson Road, given that the school is located some distance from the proposed works. The school was concerned about potential dust impacts during construction, however the site has been not identified as an area where construction dust was likely to cause impacts.

For Odyssey House and the Odyssey House School, there are likely to be instances where short term noise effects will not meet the recommended daytime standard, and temporary barriers will need to be used in order to minimise effects on children's learning (measures are set out in the CEMP).

Construction effects on businesses in the study area are predicted to include travel delays in getting products to and from premises, and potential loss of customers due to travel delays/accessibility disruptions<sup>49</sup>. While some of these impacts can be mitigated by construction planning, to some degree such effects are unavoidable (but are temporary in nature). Construction impacts on industrial sites are considered to be less important due to the low noise/vibration and air quality sensitivity of such sites. Conversely, impacts in Sector 5 and for other businesses in Sector 9 are considered potentially positive, as the local employment growth associated with construction activities will likely result in increased demand for retail and service business. For example, this is relevant for the dairy (Waterview Superette) and petrol station in Waterview and for those local businesses on Hendon Avenue in Owairaka. Overall, impacts on employment structures in Sectors 3 and 9 are expected to

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<sup>49</sup> *Assessing the Wider Economic Impacts from the SH20 Waterview Connection* (Ascari Partners, 2007).

range from minor negative to minor positive impacts during construction, mainly related to the traffic delays reducing accessibility to the sites.

There will be some construction encroachment on the on Western Springs Gardens site including areas where there is an existing NZTA designation over parts of the carparking area (which will be necessary for use during construction). ACC will need to find alternative parking arrangements (eg. parking on local streets or in the Western Springs site on the northern side of Great North Road), which may affect operation of the site in a minor way during construction. Noise for this site is generally expected to comply with daytime construction standards, therefore no restriction on the ability of the hall to operate during construction is foreseen. No impact on the continued operation of other community halls in the study area is expected during construction.

Adverse noise effects on the Mason Clinic from Project construction are not generally expected, given the location of the site is set back within the Unitec grounds. There may be some short term noise impacts associated with the construction of the Great North Road Underpass, though impacts are expected to be relatively short-term in duration. Periods of high noise have the potential to impact on patients' wellbeing, but overall such impacts are not considered to be widespread given the relatively confined periods of high noise and the management measures in place. Traffic disruptions on SH16 and Great North Road during construction may cause some delays in accessing the site, but again is not considered to be widespread.

Waterview Superette has been identified as part of the designation, however it is anticipated that the dairy will be able to remain fully operational throughout construction, and effects on the dairy will be managed so that this occurs (see Part A of the AEE). This will be important from a social perspective given that the dairy provides a convenient food shopping location for less mobile community members in Waterview (eg. the elderly).

The proposed designation affects approximately half of the carparking area used by the Samoan Assembly of God (Sector 9), which has the potential to cause impacts on the ability of the site to operate normally and provide for people's religious affiliations. However, it is noted that property negotiations between the NZTA and church will provide for an alternative parking solution. As such, impacts are considered to be neutral. There is also limited street parking available on local streets which may assist in mitigating these impacts. Surface construction activities will not be undertaken on Sundays, which will limit the noise impacts on the Samoan Assembly of God and other places of religious across the study area which generally meet on Sundays.

Effects on community reserves are discussed under 'leisure and recreation opportunities' (above), and are considered to range from neutral to minor negative impacts, taking into account the proposed reserve provision measures during the construction period.

### Community Cohesion, Character, Structure and Stability

Construction of the Project will impact on the appearance and character of neighbourhoods, particularly in relation to visual/amenity and noise impacts (as discussed in section 7.2.2). The daily influx of temporary construction workers (approximately 1,000 workers, based across work sites over the Project area) will increase the daytime population<sup>50</sup> of the local community, and increase the associated sense of 'busy-ness' in the area. For some residents this will heighten the sense of impact/disruption to their daily lives during construction. For others, this is accepted as a necessary part of construction and is not seen as a negative impact and may even be positive (eg. the socio-economic activity associated with this population). Concern was expressed in consultation that construction of the Great North Road Underpass would sever and isolate the Waterview community. Given that pedestrian access will be maintained on at least one side of the road in parts of the Project area affected by construction works (and that safe road crossing points will be provided), construction of the Project is not considered to physically sever Waterview or any other neighbourhoods in the study area from amenities such as shops, schools, childcare centres, recreational facilities and churches. Access may be made more difficult during construction and may increase people's perceived sense of severance/accessibility, but few actual accessibility impediments are expected in light of the traffic and pedestrian access management measures proposed as part of the CEMP (and staged construction of the Great North Road Underpass).

The loss of the community 'meeting place' at Waterview Reserve has potential effects on neighbourhood cohesion, though to a large degree this is mitigated by the upgrading and future expansion proposed for Saxon Reserve, which is within walking distance of those residents affected and will provide an improved community meeting place within the local area. The appeal of Alan Wood Reserve as a meeting place is likely to reduce somewhat (given impacts on the usability and enjoyment of the reserve during construction), though given the number of suitable meeting places in the vicinity of Alan Wood Reserve (including Murray Halberg Park and Owairaka District School for Owairaka residents, and the local park on Methuen Road for New Windsor residents), this is not expected to impact appreciably on community cohesion.

Community impacts associated with the permanent acquisition of residential properties are discussed under operational impacts in section 7.3.4 (although it is recognised that time-wise, these impacts have the potential to commence at the outset of construction). Some residents have indicated that they will choose to voluntarily relocate from Waterview prior to construction, as a direct response to confirmation of the Project proceeding and in anticipation of construction impacts expected in this area. Should this change be realised, there will be some change to the composition of residents living in the Waterview community. This voluntary movement would result in a change to, rather than a loss of, residents from the local study area<sup>51</sup>, and as such is

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<sup>50</sup> Most construction workers will commute to work daily, rather than temporarily relocate into the area for the construction period (as with projects where the local labour supply is constrained).

<sup>51</sup> In addition to the population loss associated with the necessary property acquisition (discussed in section 7.3.4).

considered to result in a neutral population effect overall. This may cause some effects on community cohesion and existing social networks, however impacts are expected to reduce over time as people adjust to their new neighbourhood. Overall impacts are unlikely to be widespread. Feedback to date has indicated that residents in Te Atatu/Te Atatu Peninsula and Owairaka/New Windsor are considerably less likely to relocate as a result of the construction of the Project, though some movement may take place once construction has commenced.

Over the construction period, there is also potential that construction works will have positive socio-economic outcomes as the construction workforce will increase demand for retail and other services (eg. food outlets, service stations and vehicle servicing) and, given the duration of construction, potentially housing (particularly rental) demand. Experience with other major NZTA construction sites<sup>52</sup> indicates that, if well managed, the construction site and associated workforce can become a positive part of the community (through involvement in community services, such as education) and hosting community events (eg. community planting days).

### Social Tensions/Divisions

Social tensions and divisions within communities are likely to become more muted once a confirmed planning decision is made on the Project, but may rise again upon the commencement of construction.

**Overall, local community impacts of the Waterview Connection during construction are considered to range from minor positive (socioeconomic) impacts to significant negative impacts (chiefly associated with impacts on community facilities and changes to community composition/character). Impacts on Waterview Primary School and Kindergarten will be potentially significant and require careful management and ongoing communication throughout construction. Mitigation measures to address these impacts include the management of traffic, noise, dust and vibration effects, and the communication of construction activities. The establishment of temporary sportsfields and the early investment in reserve replacement will also reduce adverse social impacts associated with construction of the Project.**

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<sup>52</sup> Including the Manukau Harbour Crossing Project and Northern Gateway Project.

## 7.3 Effects once Operational

### Overview

**A broad range of social impacts are associated with the Project once operational. These effects are associated with the permanent land take required for the Project, the changing accessibility across the study area, and the resulting changes to social structures and community facilities that may be expected.**

### 7.3.1 Attitudes, Expectations and Aspirations

#### Attitudes

Once constructed, it is likely that local residents' attitudes about the Project will have been reconciled and there will be an increased degree of acceptance (compared with attitudes expressed in consultation). This is likely to occur either as people find that the actual impacts associated with the Project are not as bad as they had first expected, or as a result of residents moving on from the local area with time (discussed later in this section). The perceived inequity expressed in consultation (between regional benefits and local disbenefits) is also likely to soften with time. It is more difficult to say whether the sense of unfairness about entitlement to compensation for residents newly overlooking a motorway is likely to lessen over time (as this will vary between individuals) however generally it is expected that this will occur.

#### Expectations and Aspirations

By the time the Project is constructed, most residents can be expected to have factored the Project into their own expectations and aspirations about the future of their own lives and communities. This is particularly the case given the long planning and construction period associated with the Project, and the relatively high natural 'turnover' of residents from the local study area<sup>53</sup>. Even in the new surface sections of motorway (Sectors 5 and 9), it can be reasonably expected that most residents will gradually adapt to the presence of the motorway in their neighbourhood (particularly given the long construction period enabling a transition period between the changed land use). Further, new residents moving into the area will have factored the motorway into their

<sup>53</sup> Overall, household mobility is relatively high in the study area. In those CAU's directly affected by property acquisition, 21-24% of people in Te Atatu (Sector 1) had resided at their current place of residence for less than 1 year. In Waterview (Sectors 5/7) this proportion was 28%, and in Owairaka (Sector 9) it varied between 23-29%. A cumulative total of 54-59% residents in Te Atatu, 60% in Waterview and 53-60% in Owairaka had resided at their current place of residence for less than 4 years. Overall this indicates a relatively high level of household mobility within the communities affected by property acquisition.

expectations and aspirations for themselves, their families and the community in which they choose to live (eg. they may move to the area for the improved accessibility that the Project brings to this area).

Impacts in relation to people's expectations of neighbourhood character will vary between Sectors, and according to people's individual expectations. For Sectors 6 (SH16 widening) and 7 – 8 (tunnel segment), the operational reality of the motorway is not expected to differ greatly from the existing environment. However, some change to people's expectations and aspirations can be expected in Sectors 1, 5 and 9, where property acquisition and/or the introduction of new motorway structures will result in a change to the composition and character of the neighbourhoods affected.

The Project is not considered to provide a barrier to achieving ACC's future vision for communities affected (set out in the ACC Future Planning Framework) and is considered to enhance some outcomes related to the opportunity for local areas to develop, including urban intensification, through improved accessibility to transport links and passenger transport (bus) networks. The Project is considered to assist in meeting regional planning outcomes for growth management and intensification, particularly in Te Atatu South/Te Atatu Peninsula (Sector 1), Avondale/Rosebank (Sectors 3/8) and around Stoddard Road (Sector 9). This is discussed further in section 7.3.

**Overall, the Project is considered to result in minor positive to minor negative social impacts in relation to people's expectations and aspirations, as most people either become more accepting towards the Project, or to choose to move on from the study area.**

### 7.3.2 Wellbeing and Way of Life

#### Wellbeing/ Quality of Life

Operational effects of the Project have the potential to change the 'liveability' of the local study area for some residents (particularly those which will newly border open sections of motorway), impacting on people's quality of life and sense of wellbeing.

Noise effects of the operational motorway have perhaps the greatest potential to impact on the wellbeing and quality of life of study area residents. Given that SH16 is an existing high-noise environment with no existing noise mitigation, the Project is actually projected to improve the noise situation for residents in Sectors 1 and 6 and for some Sector 5 residents to the north of SH16. Technical Report G.12 *Assessment of Operational Noise Effects* provides detail on the existing and expected noise environment for residents in these areas, including the mitigation proposed to improve the noise environment. These measures are proposed as the 'best practicable option' for noise mitigation, given other effects (including social effects) associated with noise mitigation (eg. the visual and amenity impacts of noise barriers). Overall, given that the existing noise environment remains high in this area, the proposed noise mitigation is not considered to result in a substantial social benefit for these residents but will enable residents to at least retain (and in some cases slightly enhance) the quality of their living environment. In Sector 5, noise effects in Waterview from the Great North Road Interchange are considered to be no more than minor (with increases of up to 3 decibels from present) and in some instances beneficial from the existing situation, taking into account the proposed noise mitigation which

includes low noise (twin layer OGPA) paving of the surface road. For Sectors 7-8, no traffic noise impact is associated with the tunnel. Noise from the ventilation stacks (Sectors 5/7 and 8/9) will be controlled by standard noise control measures to achieve compliance with District Plan noise limits. The emergency smoke exhaust stack will require monthly testing (to be undertaken during the daytime) to meet relevant safety criteria. This will generate noise which will exceed the relevant District Plan noise limits, but given its limited temporary duration is not considered to generate more than minor social impacts on neighbouring residents and religious centres (Dorje Chang Buddhist Institute and the Kodesh Christian Community).

Sector 9 residents will experience the most significant noise impacts in the Project area, given its existing situation as a low noise environment overlooking Alan Wood Reserve and the unimplemented rail corridor. South of the proposed alignment (residential sites in Methuen Road, Valonia Street and Richardson Road) and north of the proposed alignment (Hendon Avenue, Olympus Street, Hargest Terrace, Richardson Road), the change in the noise environment is considered significant and noise mitigation (including barriers) are proposed (again taking a best practicable option approach which gives consideration to other effects of these barriers, including social and amenity impacts). Overall noise in Sector 9 will meet standards considered appropriate for urban environments (NZS 6806). However, overall this change in the noise environment is expected to impact on people's way of life in Sector 9, given that noise will be increased significantly from present levels which will result in (at least initially) a high degree of change. Impacts on long term residents of the Avondale Motor Park will be heightened due to the temporary nature of their caravan accommodation and the poor acoustic insulation of such structures. Sector 9 is the only area where vibration impacts are expected as a result of the Project. It is anticipated that with substantial mitigation measures, that these impacts can be reduced to acceptable levels.

On balance, there are considered to be adverse effects on people's way of life for residents in close proximity to the Project in Sector 9. However, it is considered that the community will adjust to this change over time, and the impacts are considered to be minor to moderate negative impact on people's long term wellbeing and way of life over time (eg. the noise levels for dwellings in this area are similar to noise levels of other suburban environments, and are not considered to adversely impact on people's health). It is noted that these adverse effects diminish rapidly for those residents shielded by the Project by one or more dwellings.

Visual impacts associated with the Project mainly affect residents living directly adjacent to motorway, with impacts diminishing significantly for those residents where views are shielded by one or more dwellings. The following is noted in respect of potential visual impacts:

- Sector 1 residents living directly north and south of SH16 will experience visual impacts associated with the new noise walls, removal of mature trees and time delays associated with replanting and visual mitigation taking full effect. Some Alwyn Avenue and Titoki Street residents affected by the reconfigured Te Atatu Interchange will experience a changed visual outlook where neighboring properties (which previously provided a visual 'buffer' to SH16) have been acquired by the NZTA;
- Visual impacts in Sector 5 range from low to high (depending on outlook), due to the effects of the new ramps, portal and ventilation stack. Views will generally be the most significant for residents on elevated sites in Waterview (eg. Herdman Street). Proposed mitigation measures including



bunding/mounding and landscaping of the interchange will go some way towards alleviating visual impacts, however some views will still be visible;

- North of the Great North Road Interchange, Point Chevalier residents which currently overlook SH16 will experience only minor impacts, due to local topography and the retention of most existing vegetation. However, some properties will have views of the enlarged Great North Road Interchange;
- Noise walls in Sector 6 will generate visual impacts for residents directly north and south of the motorway (eg. Parr Road South and Novar Place, where the high noise walls have the potential to compromise residential amenity values);
- In Sector 9, properties in New Windsor (south of the new motorway) are elevated and presently have wide open views over Alan Wood Reserve and the unimplemented Avondale Southdown rail corridor. As such, the Project will have dramatic visual impacts in this area (even with mitigation). Visual impacts are also marked for Hendon Avenue residents and those areas at the bottom of Stoddard Road and Richardson Road, however effects for properties one row back from Alan Wood Reserve and the highway corridor would be quite low. There will be an increased sense of 'busy-ness' in Sector 9, associated with the anticipated 70,000 vehicles per day that will use the new section of SH20 in 2016 (and projected rise to 83,000 vehicles per day by 2026). This can be mitigated to some degree by bunding and visual screening but will still be different in character to the present situation.

Overall, visual impacts can result in a perceived or actual loss of privacy, loss of views over open areas, and generally a lower sense of satisfaction with people's homes and neighbourhood. The visually prominent northern and southern ventilation stacks will also represent a change from the suburban character/scale of these areas. This change in amenity and character is generally considered to represent minor to moderate social impacts on people's wellbeing and sense of satisfaction with their living situation, depending on the outlook of each individual property, the views of individual residents affected, and visual mitigation applied. Over time, most people can be expected to either gradually adjust to their new environment, or decide to move elsewhere. However, given that impacts are expected to be fairly localised (affecting those residents directly bordering or overlooking motorway infrastructure), effects are not considered to be widespread.

Improvements to the Te Atatu Interchange in Sector 1 will bring about significant improvements to road safety, which will have a positive impact in relation to the health/wellbeing of local residents (as well as road users from elsewhere in the region). Fear of crime was identified as an issue during consultation, particularly for new sections of motorway/new motorway infrastructure (Sectors 5 and 9), and for Sector 1 residents which will have a new motorway frontage as a result of reconfiguration works at the Te Atatu Interchange. Concerns mainly related to graffiti and vandalism that may be attracted once the motorway is operational. The Auckland Motorway Alliance EMP sets out a management procedure for the removal of graffiti, which is considered to assist in alleviating these concerns. Wellbeing and quality of life are also impacted through concern over perceived health impacts of this Project – this is discussed below. For SH16 widening works, social impacts are largely restricted to 'edge' effects of having the motorway closer. The final degree of impact from the new SH20 motorway structures will depend on people's individual perspectives and quality of life expectations. People's satisfaction from being at home in their own properties may diminish slightly from the Project, but overall impacts on people's wellbeing and quality of life are likely to become 'muted' as the Project becomes a normal

part of their surroundings with time. As discussed elsewhere, people who feel the Project has severely intruded on their wellbeing are likely to move on from the area (should they be in a position to do so).

### Health Impacts

One of the biggest areas of concern for the Project relates to perceptions and concerns of potential health impacts from air discharges, in particular the potential for respiratory illness as a result of particulate matter emitted. This concern primarily relates to people's perceptions that air being discharged from the tunnel ventilation stacks (Sectors 5/7 and 8/9) will have concentrated levels of pollutants which will adversely affect local residents, students and others who visit the area. There is potential that these concerns will continue and potentially worsen once the Project is operational, given the visual prominence of the ventilation stacks serving as a 'reminder' to residents of the emissions being discharged. Project air quality modelling predicts no adverse impacts on sensitive receptors in proximity (50–150m) to the ventilation stacks (eg. Waterview Primary School and Kindergarten for the northern stack, and the Avondale Motor Park and Hendon Avenue residential properties for the southern stack). Maximum ground level concentrations of PM<sub>10</sub>, NO<sub>x</sub> and other contaminants for the identified and assessed receptors in the vicinity of the ventilation stacks are below the limits set in the National Environmental Standard for Ambient Air Quality (AQNES). The proposal to cease or reduce mechanical ventilation of air emissions during periods of low traffic volumes caused some alarm among concerned residents. However, air modelling results show that the predicted maximum contribution from the portal to ambient pollutant levels are relatively small when compared to the AQNES, and the predicted cumulative concentrations do not exceed any of the air quality criteria.

To a lesser extent, concern over potential health impacts has also been expressed in relation to air pollution from the new section of surface motorway in Sector 9. The main concerns relate to potential impacts on neighbouring residents and people using Alan Wood Reserve. Air quality modelling shows that the biggest increases in PM<sub>10</sub> and PM<sub>2.5</sub> concentrations occur in Sector 9, given that the area currently has relatively minor roads with low traffic volumes. The most affected residential areas are those adjacent to the new motorway – Hendon Avenue, Barrymore Road and Richardson Road in Owairaka, and Methuen Avenue in New Windsor. Eleven receptors around Sector 9 are projected to exceed the ARC Regional Air Quality Target for PM<sub>2.5</sub>, and NO<sub>2</sub> and benzene emissions are projected to increase slightly in certain areas around Sectors 1, 6 and 9. But again, modelling anticipates that AQNES will be met at all locations modelled. Generally, PM<sub>10</sub> levels (which people were principally concerned about) will be reduced in Sectors 1, 5, 6 and 7 with the Project (as a result of improved traffic flow/redistribution of traffic).

Despite Project emissions complying with the AQNES, it is acknowledged that some people will continue to have fears over ill-health, and that this concern in itself has an impact on people's wellbeing and overall quality of life. The potential health impacts on students at Waterview Primary School and Kindergarten has been a key issue throughout Project discussions, given the close proximity of the northern ventilation stack to the school. This impact is discussed further in section 7.3.4 (below). The concept of filtering the emissions was an important one expressed in consultation. While technical assessments have concluded that there is only marginal benefit in installing filters in the ventilation stacks, the lack of filtering proposed has remained a big driver in people's perception of the ventilation stacks posing a health threat. The issue at hand is complex. For some people spoken to, there is a sense of mistrust in the standards and assessments used to conclude that the air discharges would fall within a safe level. This was expressed both in terms of mistrust that the AQNES

afforded an adequate level of health protection, and that the NZTA assessment could be relied on. Increased communication and continuing to make the results of relevant assessments available to the public will be important measures in helping to increase understanding of the actual risk associated with the ventilation stacks and air emissions. Communicating that the assessments have been carried out by independent consultants and independently peer reviewed should also help to reduce these impacts.

The emergency smoke exhaust stack in Sector 8 is for use in rare emergency events, to discharge smoke in the rare case of a fire within one of the tunnels. Air quality/health impacts of an emergency discharge will be similar to any other emergency fire event (for example, a house or car fire within the local community). Given the exceptional use of this facility and the similar effects to a domestic emergency situation, it is not considered to have any particular impacts.

Project noise modelling predicts that the NZS 6806 standard for noise will be met in all Sectors (including Sector 9, where the most significant noise increase will occur). As detailed in Technical Report G.12 *Assessment of Operational Noise Effects*, the criteria contained in NZS 6806 have been developed with the intention that they are *'reasonable criteria taking into account adverse health effects associated with noise; the effects of relative changes in noise levels on people and communities; and the potential benefits of new and altered roads to people and communities'*. As such, effects on health and wellbeing resulting from noise impacts are not generally envisaged in the local study area, though it is recognised that noise is subjective to each individual and that some people may perceive health impacts associated with noise generated by the Project.

### **Patterns of Day to Day Living**

As discussed above, the noise, vibration, visual and air quality nuisance effects of the motorway have the potential to impact on people's wellbeing and quality of life, though it is largely considered that over time, people will gradually adjust to their new environment as it becomes a normal part of their day to day surroundings. Overall, it is not expected that the noise, vibration or visual impacts of the constructed motorway would result in people changing their daily living patterns once the Project has been constructed. However, the perceived impacts of air emissions (in particular those associated with the ventilation stacks) do have the potential to alter some people's patterns of day to day living, at least initially. Fear over health impacts may initially cause some people to limit the time they spend outdoors. However, most people can be expected to adapt to the presence of the ventilation stack over time. Again, the communication and reporting mechanisms detailed in section 8 will be particularly important in facilitating open communication about air quality effects and standards among concerned residents.

Generally, the Project will generate accessibility and connectivity improvements in the local study area, which is considered to result in positive social impacts to people's patterns of daily living. While traffic modelling indicates that around 9% of traffic using the Project would be associated with the immediate study area itself,

improved accessibility to the state highway network is anticipated to benefit people's patterns of daily living by improving accessibility and travel times to other areas in Auckland, including places of work (as a number of people in the study area work in Auckland city, Waitakere, Manukau and the North Shore), community facilities and facilities of regional importance such as Auckland International Airport. While there has been some comment from local residents (in particular, Waterview residents) who feel they may be disadvantaged by access points on to the motorway<sup>54</sup>, there will be an overall net benefit to people's access to the state highway network. Further, the Project will divert traffic (including heavy vehicle traffic) from local streets in the SH20 study area, including Great North Road, Blockhouse Bay Road, Carrington Road, Mt Albert Road, the Tiverton/Wolverton route and Dominion Road. This will improve travel times for local residents who use these routes, increase safety for pedestrians, cyclists and motorists, and also help to improve public transport opportunities for local residents (particularly in terms of reduced travel times for public buses using local streets). The bus shoulders along SH16 and the bus priority lane at the Te Atatu Interchange also represent significant benefits to bus travel times, which will particularly benefit Sector 1 residents. Improved public transport opportunities are considered to generate moderate positive impacts in terms of people's daily living patterns and transport choices, and will be particularly beneficial for residents without access to a vehicle (concentrated in Sectors 5-7 and 9). However, travel times on Te Atatu Road are predicted to increase with the Project which will result in some delays to non-bus users in Te Atatu and Te Atatu Peninsula.

Significant 'way of life' benefits are expected for cyclists in the local study area, as a result of the new section of SH20 Cycleway and improvements to the Northwestern Pedestrian/Cycle Way (overall making the user experience a more pleasant one with increased separation from vehicular traffic, route improvements and widening to 3 metres along most of the length of the cycleway). Pedestrian connectivity will also be improved in some parts of the study area, as a result of the Hendon Bridge which will enhance local pedestrian connections in Sectors 8 and 9. Pedestrian connections will also improve at the Te Atatu Interchange, resulting in safety and amenity improvements to the underpass and improvements to the phasing of signalised pedestrian crossings. This will make it easier and safer to cross the Te Atatu Interchange, which is well used by local residents and Rutherford College students.

### Property Requirements/Land Take

As noted in section 7.1, property acquisition has been staged throughout the planning phase, with a number of affected residents having already been party to property negotiation or relocated as part of this process. The property acquisition element of the Project is an important consideration with respect to people's wellbeing and way of life. The relocation of households is likely to result in a high degree of change for the individuals and families affected, and has the potential to disrupt people from their existing social and family networks (regardless of staging/good management of the resettlement process). This is true across all Sectors affected

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<sup>54</sup> As the Project does not incorporate a central interchange or on-ramps at the Great North Road Interchange.

(1, 5, 6, 7 and 9), but is likely to have a particular impact in Waterview given the geographic constraints of the suburb and relatively large number of people who may be looking to relocate within the area. This property requirement will have a particular impact on 'vulnerable' residents including lower socio-economic residents and elderly residents, who generally have reduced mobility and consequently a reduced ability to 'move on' compared with others<sup>55</sup>. Property acquisition in Sector 1 affects only one Housing New Zealand property, and Census data shows relatively low rates of deprivation (NZDep scores of around 7) in those areas in Sector 1 directly affected by the Project. This indicates that generally, residents affected by property acquisition are likely to be financially able to 'move on' without any particular disadvantage. However, potentially significant negative impacts are associated with property acquisition in Sectors 5/7 and 9, where the extent of acquisition is widespread and affects considerable areas of social housing (57 properties in Sectors 5/7 and 14 in Sector 9). Residents who rent accommodation from Housing New Zealand may have limited choice to relocate in the same area. As part of the relocation process, a formal needs assessment process is undertaken by Housing New Zealand, to ensure that full account is taken of a tenant's needs and preferences. This is an important measure in assisting affected residents to 'move on' to new accommodation. A Housing New Zealand site with 22 pensioner dwellings was affected by the Project as part of the early acquisition process in the planning phase. Housing New Zealand confirm that they have worked closely with the tenants, and progressively transferred them into other units that met their needs.

The areas of non Housing New Zealand accommodation required in Sectors 5, 7 and 9 affect a very low socio-economic population. For residents on limited incomes, finding alternative accommodation within the same area may present a challenge. Accordingly, resettlement will be an issue for some people, who may find it difficult to move on and rebuild social networks, especially if they do not have a great deal of choice over where they will relocate to (or where they will be relocated to). There are a small number of people (particularly in Sector 9) who have indicated that they live where they do because of people they know (eg. new arrivals to New Zealand who deliberately locate in the area to be near people from their home country, and the group of Somalians placed in the same neighbourhood via the refugee placement program) or because they have limited mobility and it is close to their work (eg. Mt Albert Pak'n Save and industrial employers in Stoddard Road or Rosebank Road). For these people, the need to relocate has the added stress of needing to relocate in close proximity to family members/workplaces, or to relocate multiple households. The staged property acquisition strategy/resettlement assistance implemented by the NZTA has played an important role in reducing impacts

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<sup>55</sup> The NZTA's staged property acquisition strategy/resettlement assistance through the current planning phase (for non-Housing New Zealand properties) has assisted (and will continue to assist) in this regard, in terms of providing early engagement property requirements, staging property acquisition, providing assistance in individual cases (early/deferred purchases and retention of tenancies until construction), and providing relocation assistance in accordance with the Public Works Act (eg. assistance to purchase another dwelling, relocation costs, legal fees, disturbance payment, allowances for replacement of special equipment (eg. associated with a disability)).

associated with this process, and enabling affected residents time to make decisions and 'move on' in their own time (refer to footnote 55 on the previous page).

Up to 154 properties will be affected by the strata designation (placing an encumbrance on excavating below the depth of 4-7m for residential properties). Some people may perceive this to impact on their property rights, though this concern was not generally expressed in consultation (at the time of consultation, most people were simply happy that their property would not be required in its entirety by the Project). Project engineers have confirmed that an encumbrance of this depth is not considered to restrict people's ability to develop land for normal purposes (eg. the construction of an additional dwelling/sleep out). In addition, the concerns of those people who do feel aggrieved at the strata designation are likely to lessen with time. Some people may also perceive the financial compensation associated with the strata designation of unusable land to be a socio-economic benefit.

### Leisure and Recreation Opportunities

Overall, long-term impacts on leisure and recreation opportunities are considered to be neutral, taking into account the NZTA's proposed reserve reinstatement measures (detailed in section 2.5 of this report).

In Sector 1, the proposed stormwater pond in Jack Colvin Park affects the part of the reserve that is currently inaccessible and therefore unusable. There is also a minor extension to the designation along the side of the park adjacent to SH16 which will require seating and trees to be relocated slightly within the reserve. Noise walls and additional landscaping are proposed along the motorway edge which will have a positive effect on noise and amenity in the park. The upgrade to the Northwestern Pedestrian/Cycle Way which travels through McCormick Green requires a minor extension to the NZTA designation. However, this is not considered to result in any social impact given the function of this as a small neighbourhood reserve and cycle route (and the fact that the change in designation is required to upgrade this cycleway facility). Land take impacts on Harbourview-Orangihina Park are not considered to impact on recreation opportunities for local residents, considering the size of the park, the ability for Council to invest in other areas of the reserve, and its current use (which does not provide for public access). Likewise, Council plans to establish a public transport facility and/or marae on site are not considered to be impeded by the Project. On balance, leisure and recreation opportunities impacts in Sector 1 are considered to be neutral. Sector 3 works to upgrade the access road to Rosebank Park Domain will result in minor positive social impacts associated with improved accessibility for vehicles and pedestrians/cyclists.

Once reserve reinstatement measures have been implemented, impacts on Waterview Reserve<sup>56</sup> (Sector 5) are considered to be neutral in the long-term. Usability and enjoyment of Waterview Reserve will be similar to the

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<sup>56</sup> Waterview reserve reinstatement plans have been developed as part of a two stage process. The initial reserve reinstatement plans emphasised upgrading facilities/reserves elsewhere in the study area (to minimise residential property

present situation today, given that facilities will be replaced 'like for like'<sup>57</sup>, that the reserve will be of a comparable size and that the significant bunding/landscaping is proposed to provide a visual and aural buffer. Benefits of the reinstatement will include improved amenity of facilities and a better street frontage to assist in passive surveillance (assisting in an appropriate CPTED response). No adverse air quality effects are expected on users of Waterview Reserve, however the visibility of the ventilation stack may (at least initially) deter some residents from using the reserve due to perceived health impacts. However, for most users this impact is likely to diminish with time as the ventilation stack gradually becomes an accepted part of the surrounding environment. The proposed expansion to Saxon Reserve will enable this reserve to better serve as an alternative 'community reserve' in a central location in the Waterview community.

Following the commencement of construction, the unnamed parcel of open space between Great North Road and SH16 (Sector 5) will remain part of the NZTA's designation rather than ACC open space zoning. Given that this open space primarily serves a roadside amenity and linkage function (with the cycleway running through the middle), social impacts are considered to be neutral as these functions will remain unchanged (despite the presence of motorway structures). No impacts are expected in relation to the use of the split-zoned open space/residential site at 1074 Great North Road for a permanent stormwater pond, as the site is not currently used for open space purposes. There are no operational impacts on the Oakley Creek Esplanade Reserve.

Social impacts associated with Alan Wood Reserve/Hendon Park (Sector 9) are also considered to be neutral in the long-term. There is likely to be a public perception that the Project will decrease the quantity of open space in Alan Wood Reserve, given that only a small portion of what appears to be reserve land at present is actually public reserve space (the balance being comprised of residentially zoned land and the future Avondale-Southdown rail designation, both of which are yet to be developed). However, the actual quantity of open space zoned land in Alan Wood Reserve will increase slightly once reserve reinstatement measures are implemented. The main issue with Alan Wood Reserve is therefore the changed configuration, layout and accessibility of open space, and the relationship of this space to the new surface motorway in Sector 9. Presently, facilities are split between Owairaka and New Windsor sides of the reserve, with no formal access between these two sides as they are separated by Oakley Creek. The proposed reserve reinstatement measures will include most reinstated

acquisition), and then improving linkages from affected communities to these upgraded areas. This was generally poorly received in consultation – a number of local residents expressed concern that large areas of open space would either be lost or made less accessible to residents directly impacted by the Project, and that a small increase in property acquisition would be preferable if it meant that open space could be reinstated in the same area as where the effect will occur. These concerns have been addressed in the new reserve replacement solution, which provides 'like for like' replacement in reserve size and facilities, directly within the areas affected. The 'trade-off' of this option is that it has increased property acquisition requirements by 22 properties in Waterview (discussed in section 7.3.4 of this report).

<sup>57</sup> Except the disused/degraded netball/tennis courts.



reserve area, including sportsfields, on the New Windsor side of the new motorway. However, the proposed Hendon Bridge will connect the two sides of the reserve (over the motorway, future rail line and Oakley Creek), enabling pedestrian and cycle access to the sportsfields for Owairaka residents. The surface section of motorway and the ventilation stack will increase visual and noise effects in Sector 9, so design features will be used to manage these impacts. The usability and enjoyment of Alan Wood Reserve will be similar to the present situation today, given the substantial planting proposed to visually buffer the motorway, and noise walls/bunding to limit noise impacts within acceptable limits for residential areas. The stormwater pond has been designed in a natural form, and will be surrounded by riparian and wetland planting, enhancing the amenity of the local area. Walkways are also proposed along the reserve and Oakley Creek to provide for passive recreation opportunities and increased amenity from the present situation. The confirmed Project will also put an end to the uncertainty that has justified a decade of underinvestment in Alan Wood Reserve, resulting in overall improved facilities for local residents. Air quality in Alan Wood Reserve is projected to worsen from the Project, and the visual prominence of the south ventilation stack is likely to cause some air quality concerns. However, PM10 emissions will be within the AQNES, and as with Waterview Reserve, it is likely that over time concerns over air emissions reduce among users of the park (as the stack slowly becomes a normal part of the surrounding environment).

In consultation, some people queried whether stormwater ponds would attract mosquitoes or generate odour. The Auckland Motorway Alliance (which maintain more than 80 ponds) have confirmed that they have no problems with odour or mosquitoes, except when they dewater ponds to clean them out (once every 5 to 10 years), where odour may be a problem for the days of maintenance activity. As such, stormwater ponds are not considered to impact on people's leisure and recreation opportunities beyond the land acquisition impacts already discussed, and are considered to provide positive amenity outcomes.

There will be no impediments to public access to the CMA as a result of the Project, or on the Whau river navigation channel (used by the Te Atatu Boating Club).

**Overall, wellbeing and way of life impacts once the Project is operational are expected to range from moderately positive benefits to potentially significant negative impacts. The Project will generate positive impacts associated with improvements to accessibility and people's patterns of living. Negative impacts are primarily associated with the changes to the character and lifestyle for residents of particular local areas in the study area, and property acquisition (with residents in Sectors 5 and 9 particularly affected). Mitigation measures to address these adverse impacts, including the proactive strategy for the purchase of properties, is set out in Section 8 of this report.**

### 7.3.3 Culture

#### Shared Beliefs, Values and Practices

Once operational, the Project is unlikely to generate adverse effects on local cultural values. Operational impacts of the motorway will change the 'look and feel' of some neighbourhoods (as previously discussed), but overall this is not expected to represent a cultural impact as such. Valued trees will be retained or mitigated where possible during construction, and extensive landscape planting (including replacement planting where necessary) will be undertaken following construction. Accessibility via all transport modes will be improved as a

result of the Project, enhancing the connectedness within and between different communities in the study area where these improvements have occurred.

Impacts on the Motu Manawa (Pollen Island) Marine Reserve and Oakley Creek are considered to be largely positive in the long term (as discussed in section 6.3), taking into account the proposed stormwater treatment along SH16 and restoration and rehabilitation of Oakley Creek. In particular, the amenity of Oakley Creek in Sector 9 is expected to improve substantially. This is considered to have an overall positive impact on the cultural values held by a number of people across the study area (eg. those community groups who are actively involved in the management and riparian planting of Oakley Creek).

The net population loss in Te Atatu, Waterview and Owairaka may have some short term impact on the ability of residents to continue cultural traditions (for example, attend community events or a local church), which may result in an initially high degree of change, but in the long term is not expected to generate any significant impact as people join new facilities and adjust their living patterns accordingly. This may have a particular impact on new immigrant families which share common cultural values (such as in Sector 9) who are relocated as a result of the Project. While this may result in an (initially) high level of change, people can be expected to adjust their living patterns to accommodate these needs. It is also noted that the improved accessibility within and between local communities in the study area will result in an increase people's accessibility and consequently ability to participate in cultural practices.

Increased noise levels will impact on the sense of 'quietness' particularly in Sector 9, where some residents cited the existing low ambient noise levels as being an important attribute of the identity/way of life of the local area. However, people are expected to either adjust to their new environment or decide to move on from the neighbourhood (as discussed elsewhere in this report), and the overall effect is one of change rather than necessarily a positive or adverse effect.

### **Cultural/Heritage Landscapes**

Once operational, the Project has the potential to significantly increase public access to, and appreciation of, the Great North Road Interchange heritage area in Sector 5 (including the Star Mill/tannery, quarry, Maori settlement site and midden features) through the proposed walkway/cycleway in this area<sup>58</sup>. Currently the area has no easy public access and is completely screened by vegetation (with archaeological features only able to be observed at close range). While the Project will have visual effects on this site, it will not prevent the heritage landscape from being read and understood. The improved accessibility and interpretation of the area's archaeological history is considered to be a moderately positive social effect on people's culture, given that a

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<sup>58</sup> Technical Report G.2 *Assessment of Archaeological Effects*.

number of people indicated a particular interest in archaeological and heritage sites in consultation for the Project.

**Overall, the Waterview Connection is considered to result in neutral to moderate positive social impacts once operational, in relation to people's culture.**

### 7.3.4 Community

#### Community Infrastructure

Impacts on schools and educational facilities in Sector 1 are generally considered to be positive as a result of the Project. The Te Puna Reo O Manawanui Early Childhood Centre in Titoki Street (the only educational facility located adjacent to SH16) will experience a decrease in noise levels as a result of the proposed noise walls, reducing noise levels slightly (by approximately 3 decibels). The childhood centre and all other Sector 1 educational facilities are generally projected to experience an improvement in air quality (PM2.5 and PM10 levels are projected to decrease, but very small increases in nitrogen emissions are forecasted) as a result of the Project. There may be some minor impacts associated with accessibility to educational facilities from residents living on the other side of the Te Atatu Interchange, given the increase to travel times projected along the interchange. However pedestrian and cyclist connectivity will improve as a result of the new, better designed underpass and reconfiguration of signalised crossings. No notable impact is expected on the roll of these schools, given the large roll and catchment of Rutherford College, and the split of property acquisition on either side of SH16 reduces the extent of potential roll impact on any one primary school. Consultation is currently being undertaken with the Ministry of Education in respect of this matter, and monitoring of school rolls is proposed in section 8.

Waterview Primary School and Kindergarten (Sectors 5/7) will be located approximately 30-100m from the ventilation stack and as such it is expected that there will be a perception of significant adverse impacts on the school (although actual air quality assessment indicates results to the contrary). A key concern of the school, kindergarten and a number of parents is that vehicle emissions (mainly from the ventilation stack) could cause health impacts among students. This concern is exacerbated by the visual prominence of the ventilation stack which is proposed to be located directly adjacent to the school/kindergarten site (shown in Figure 7-1).



**Figure 7-1: Proposed Location of Ventilation Stack in relation to Waterview Primary School and Kindergarten**

The school and kindergarten have concerns over roll impacts following the Project, mainly associated with the compulsory property acquisition and the presence of the northern ventilation stack. Concern has been expressed that the extent of residential property acquisition in Waterview could adversely impact on the school and kindergarten rolls, potentially threatening the future viability of the facilities if student numbers decline as a result of catchment loss. While the impact on housing from the Project is acknowledged, it is also noted that the improved accessibility (and the increased certainty of the Project) are considered to create opportunity for further urban intensification in this area, which in the longer term is considered to create opportunity to off-set the loss of households required by the Project (though it is acknowledged that this outcome is by no means certain). Beyond this, some parents have indicated that should the Project proceed, they would consider discontinuing their children’s enrollment at the school. However, a survey of Project awareness and attitudes among Waterview Primary School and Kindergarten parents and caregivers (undertaken in 2009) indicated that the Project had ‘little impact’ on the intentions of parents or caregivers to keep their children enrolled at Waterview Primary School/Kindergarten, or on their intentions to enrol siblings in the future<sup>59</sup>. It is important to

<sup>59</sup> Based on the indication of attitudes expressed in the Waterview Primary School and Kindergarten: Awareness and Attitudes of Parents/Caregivers: Communication Research Results (Captive Limited, February 2009) – see footnote 48 on page 125.

note however that the visual prominence of the stack and changing attitudes over time could potentially result in a change to this situation. As outlined in section 7.2.4, should the rolls drop further as a result of the Project, there are implications for funding/staff levels and potentially the viability of the school/kindergarten. Given that the school and kindergarten represent a significant resource in the community (being the only local school in Waterview and also with the school hall hosting a range of community activities), any impact on the viability of the school would also impact on the wider Waterview community. Recognising the high level of uncertainty over the scale of this potential impact, post-construction monitoring of the rolls is recommended under section 8.

It is important to note that in contrast to the concern/perception of effects, the assessed operational effects on the school are not expected to be adverse. Air quality is projected to be very similar regardless of whether or not the Project goes ahead. Modelling shows that emissions will be below statutory thresholds in the vicinity of Waterview Primary School/Kindergarten, including the AQNES (which was set in recognition of the potential health impacts of air emissions). Noise impacts will be very similar regardless of whether or not the Project goes ahead, with no change projected to be observed at Waterview Kindergarten, and a slight reduction (1-2 decibels) at most locations in the school, except on the playing fields where an increase of 1 decibel is projected (which is not discernable in noise terms, although there may be an initial perceived increase in noise levels as people adjust to the visual impact of the new motorway). Operational vibration impacts on the site are not anticipated. The future reduction of traffic on Great North Road is considered to result in a traffic/pedestrian safety benefit for students). However, the school and kindergarten will experience visual effects from the Great North Road Interchange and northern ventilation stack. Overall, impacts on the school are considered to be potentially significant due to the location and visual prominence of the ventilation stack, and will require careful management of communication and dissemination of air quality monitoring results. Beyond this, the need to make Waterview an attractive area for families to live following construction of the Project is also acknowledged by the school, kindergarten and NZTA Project team as important from a school roll (and wider community) perspective. This will be addressed primarily through reserve reinstatement and urban design/landscaping of the area.

Issues for St Francis School are largely related to nuisance effects that the school already experiences due to its proximity to SH16. Overall the school will experience an improvement in air quality, and noise impacts will be similar regardless of whether or not the Project goes ahead. Visual impacts are expected to be low. The school has confirmed that no impact is likely on the school roll, given its present catchment does not draw on areas affected by Project property acquisition.

Unitec will benefit from improved accessibility from the new section of SH20 motorway, improvements to SH16 and a reduction in traffic flow on the local streets which provide access to the site (in particular, Carrington Road, Great North Road and Mt Albert Road). These improvements are considered beneficial in the context of the organisation's regional student catchment and future plans to provide for future growth on the site. Noise effects on the Unitec site are considered to improve slightly as a result of proposed noise mitigation, as are air quality levels. Visual impacts will be minimal in most locations and moderate in others (closer to the new motorway structures).

Impacts on Owairaka District School are largely considered to be positive, given that traffic flows on Richardson Road are expected to more than halve following the construction of the Project, improving the traffic and pedestrian safety situation considerably from at present (which, following the opening of the SH20 Mt Roskill

Extension, has causes a high level of concern among staff and parents). The Project will not impact on the school's noise environment. The school will however experience a small degradation in air quality (PM2.5 and PM10), though PM10 concentration are well below the limits set by the AQNES. Likewise, Odyssey House School and childcare facilities in Owairaka are also projected to experience a small reduction in local air quality as a result of the Project, which needs to be carefully managed in Project communications (see section 8). No notable impacts are expected on the rolls of schools/educational facilities in Sector 9, given that student populations are drawn from a number of suburbs surrounding Owairaka (and in the case of Odyssey House School, a specialist catchment of special needs students), and that the extent of property acquisition in Sector 9 will be limited to 29 properties. Consultation is currently being undertaken with the Ministry of Education in respect of this matter, and monitoring of school rolls is proposed in section 8. In addition, as noted above, the overall improvements in accessibility (both directly from the Project and due to reduced volumes on local roads) are considered to provide a positive effect on future opportunities for urban intensification in these areas, which is expected to off-set the property requirements for the Project (albeit in the longer term).

During the designation process for the SH20 Mt Roskill Extension, a property agreement was reached with Christ the King School, which specified the external and internal noise standards to be achieved on the school site/in school buildings. The agreement also details the encroachment of the motorway designation and compensation. There will be visual impacts on Christ the King School associated with the new Maioro Street Interchange and noise walls. The school will however experience a small degradation in air quality, but again emissions are well below the limits of the AQNES. Ongoing communication with the school will be important to discuss these operational effects of the Project.

Completion of the Project will facilitate accessibility improvements to the Mason Clinic and rehabilitation/addiction units clustered around Carrington Road. No other operational impacts are expected in relation to the Carrington Road sites, and the Project is expected to generate minor benefits for the Mason Clinic site in relation to small improvements in noise and air quality levels.

No operational impacts are expected in relation to the Western Springs Gardens and community hall, despite the slight designation encroachment of the Project.

Based on feedback from property negotiation discussions, the edge effects of acquisition on five Rosebank Road/Patiki Road industrial sites (Sector 3) are not considered to impact significantly on business feasibility or employment structures. Impacts of the partial acquisition affecting seven business land parcels at Stoddard Road/Richardson Road have the potential to require the relocation of one business, but are considered minor in terms of employment structures in Sector 9. Once operational, the Project will result in accessibility benefits for these businesses including for local residents accessing these and other employment sites. In particular, improved accessibility to the Richardson Road industrial/employment area will promote future growth in this area, as envisaged in the Auckland Regional Growth Strategy. Overall, moderately to significantly positive impacts are expected with respect to the economic and accessibility benefits projected for the Rosebank Road and Richardson Road industrial areas.

The proposed designation will permanently affect approximately half of the carparking area used by the Samoan Assembly of God (Sector 9), which has the potential to cause impacts on the ability of the site to operate normally and provide for people's religious affiliations. However, it is noted that property negotiations

between the NZTA and church will provide for an alternative parking solution. As such, impacts are considered to be neutral. There is also limited street parking available on local streets which may assist in mitigating these impacts. Following construction, impacts on the facility are considered to be minor negative impacts associated with increased noise and other nuisance effects of having the motorway closer.

Effects on community reserves are discussed under 'leisure and recreation opportunities' (above) and are considered to range be neutral in the long term, taking into account the proposed reserve reinstatement measures in Waterview and Owairaka/New Windsor.

Operational effects are not envisaged on other specific community facilities or infrastructure in the study area.

### **Community Cohesion, Character, Structure and Stability**

The Project will result in a permanent alteration to community character, varying in extent across the Project Sectors. For the SH16 section (Sectors 1 and 6), this change in character will primarily affect individual residents in localised areas bordering new new/extended motorway structures (discussed in section 7.3.2 above), whereas wider community character impacts are considered to be minor. The tunnel section underneath Waterview and Mt Albert (approximately two thirds of the new section of motorway being constructed) decreases the extent of new physical barriers between communities, and is not considered to result in any community impacts in this respect. In Sectors 7-8 (tunneled section), the only visible structure associated with the Project will be the emergency smoke exhaust stack in Cradock Street, and community character impacts are considered to be neutral. For the new surface section of SH20 (Sectors 5 and 9), the large scale of the motorway structures will bring about a considerable change in community character and also visual impacts in the public domain, ranging from minimal to high visual impacts according to location. There will be an increased sense of activity from traffic travelling on the new surface motorway (Sector 9). However, the Project will decrease the amount of traffic on a number of local roads in the study area (Sectors 5-9). This, coupled with the pedestrian and cycle connectivity benefits proposed, will enable better access within and between communities (including commercial/retail areas, schools, residential areas and other community facilities) once the Project is operational. Overall, community character impacts in Sector 5 and 9 are considered to be minor to moderately negative as a result of the new surface motorway structures and ventilation stacks, however most residents can be expected to adjust to these impacts over time. The improved accessibility to the wider region will also provide opportunity for greater change in character and structure of this community (in line with the Auckland Regional Growth Strategy). This is seen more as a change in character/urban structure, and while positive in terms of the regional growth aspirations is not considered either a positive or negative local impact.

In Sector 5, the Project will continue the sense of severance between Waterview/Point Chevalier (already severed by SH16) and Unitec/Springleigh (already severed by Great North Road). However, actual connectivity (by vehicle via Great North Road, or by foot/cycle via the existing Great North Road overbridge and Carrington Bridge) will not change as a result of the expanded Great North Road Interchange. In Sector 9, the sense of severance between Owairaka and New Windsor will increase substantially as a result of the Project. However, the construction of the Hendon Bridge will mean that actual pedestrian accessibility is improved, given that these two areas are currently dislocated by Oakley Creek. It is considered that the proposed reserve reinstatement solution will continue to provide sufficient opportunity for community interaction (recognising that reserves are important community meeting places/interactive sites), and not result in any disbenefit in this respect.



The Project will also have impacts on community structure and stability<sup>60</sup>. Residential property acquisition will reduce population size particularly in Te Atatu (41 households), Waterview (103 households) and Owairaka (29 households). The combined impact of residential land take will result in (at least initially) a high degree of change for these communities. 71 of these properties form part of the national social housing stock, meaning that property acquisition will lower the proportion of lower socio-economic households in these affected communities. The displacement of lower socio-economic areas relative to surrounding areas in Te Atatu, Waterview and Owairaka will have a measured impact on the demographic composition of these localised areas. This impact will be particularly pronounced in Sectors 5/7 and 9, where Housing New Zealand properties form a relatively large proportion of the properties required (55% in Waterview and 48% in Owairaka). The loss of dwellings in Te Atatu, Waterview and Owairaka will have potentially significant short term impacts on community cohesiveness, given that some residents may not be able to relocate within the same neighbourhood. However, the formal needs assessment process carried out by Housing New Zealand (undertaken to ensure that full account is taken of a tenant's needs and preferences in the relocation process), and the staged property strategy implemented by the NZTA are both considered to play an important role in reducing these impacts.

The removal of dwellings in all of Cowley Street and parts of Herdman Street, Waterbank Crescent and Great North Road represent the loss of a significant portion of residential area in the Waterview community (affecting 8.5% of all current households<sup>61</sup> in Waterview). As such, there is potential for significant displacement/fragmentation of the current Waterview community, some of whom may not be able to relocate in the same area, or have indicated a preference to relocate elsewhere in Auckland rather than remain in Waterview<sup>62</sup>. In Waterview, the large extent of property acquisition also means that a small demographic impact on the suburb's ethnic composition is also likely, given that the meshblocks directly affected have a particularly higher proportion of Pacific Islanders (32% vs 24%) than the wider CAU. Some residents fear that this change in community composition will result in the disintegration of existing social networks and cohesion. This impact is expected to lessen over time as relationships are formed with new residents moving into the area, given the existing natural turnover of residents and with the wider opportunities the Project creates for urban intensification and growth in the local area. While acknowledging that this will have impacts on existing social networks in Waterview, it is noted that there is already a relatively high natural 'turnover' rate in Waterview

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<sup>60</sup> It is acknowledged that these impacts will occur from the construction phase, due to the timing of property acquisition.

<sup>61</sup> Based on 1,218 occupied dwellings recorded in the Waterview Census Area Unit in the 2006 Census.

<sup>62</sup> It is recognised that the staged approach to property acquisition has been particularly helpful in this regard, by minimising the impact of residents looking to relocate within the same area at the same time (and risking 'flooding the market' for replacement accommodation).

already, with almost 60% of residents having resided at their current place of residence for less than 4 years at the time of the 2006 Census.

It is also likely that some current residents will decide to move elsewhere as a result of the Project (in addition to those residents affected by compulsory property acquisition). This would result in a change to, rather than a loss of, residents from remaining areas in the local study area, and as such is considered to result in a neutral population effect overall. Some local residents have expressed concern over the future viability of community services in Waterview, given the geographically defined 'catchment' of the suburb and the extent of likely population loss (8.5% of households). Impacts on Waterview Primary School and Kindergarten are considered to be potentially significant, depending on the extent of roll impacts (discussed above). Other than Waterview Superette and the block of shops on Daventry Street (which have suffered from transience and a loss of patronage particularly over the last ten years), all other community facilities tend to be accessed outside of Waterview, either in Point Chevalier or Avondale/Mt Albert. Other kindergartens in Waterview primarily draw on a catchment from elsewhere in Waterview (rather than those areas in the north which will experience a net population loss). As such, impacts on community viability in Waterview are considered to be limited to impacts on Waterview Primary School and Kindergarten (discussed above), and a change in the population associated with people voluntarily moving on from the local area as a result of the Project. Furthermore, as noted earlier, the longer term growth anticipated as a result of improved accessibility (eg. the opportunities for urban intensification) are considered to (at least in part) off set the land requirement impacts.

The trade-off between reducing the extent of property acquisition and having enough land to provide adequate mitigation for reserve impacts has been a key challenge for the property purchase strategy. A total of 22 properties are proposed for permanent acquisition in order to provide for alterations to Waterview Reserve post-construction (which may have otherwise been able to be resold following construction if expansion to the reserve was not proposed). Overall, it was decided that a small increase in property acquisition would provide more benefits in terms of enabling a better, locally accessible reserve mitigation option that would satisfy the needs of the remaining people in the community. Furthermore, the provision of such open space is considered an overall benefit to the amenity and community infrastructure for Waterview, which will better facilitate urban intensification within the surrounding area.

The impact of population loss from Te Atatu or Owairaka is not considered to be as widespread or severe on a community level, and is mainly considered to affect individuals and families directly affected by the Project (as discussed in section 7.3.2). This is partly due to the lower number of properties required, and partly due to the community facilities serving these communities not being dependent on an already small, geographically constrained population. The final degree of community impact in Sectors 5 and 9<sup>63</sup> will be dependent on how

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<sup>63</sup> Reinstatement of residential land in Sector 1 is not possible due to the Project's operational requirements.

much land can be returned by the NZTA for residential use post-construction, and how efficiently remaining land in Waterview can be further developed for residential use. This is discussed further in section 8.

### **Social Tensions/Divisions**

Any social tensions/divisions within the community resulting from the Project are expected to have reduced significantly following the completion of construction, as people move on with their own lives and adjust to the presence of the Project in the local area.

**Overall, local community impacts of the Waterview Connection (once operational) range from moderately to significantly positive benefits (in terms of improvements to local accessibility and access to local business nodes) to moderate to potentially significant negative impacts, with the most severe impacts associated with the fragmentation of residents in Waterview/Owairaka and the potential for roll impacts at Waterview Primary School and Kindergarten. Mitigation measures and monitoring is proposed with respect to community and educational facilities, as discussed in Section 8 of this report.**

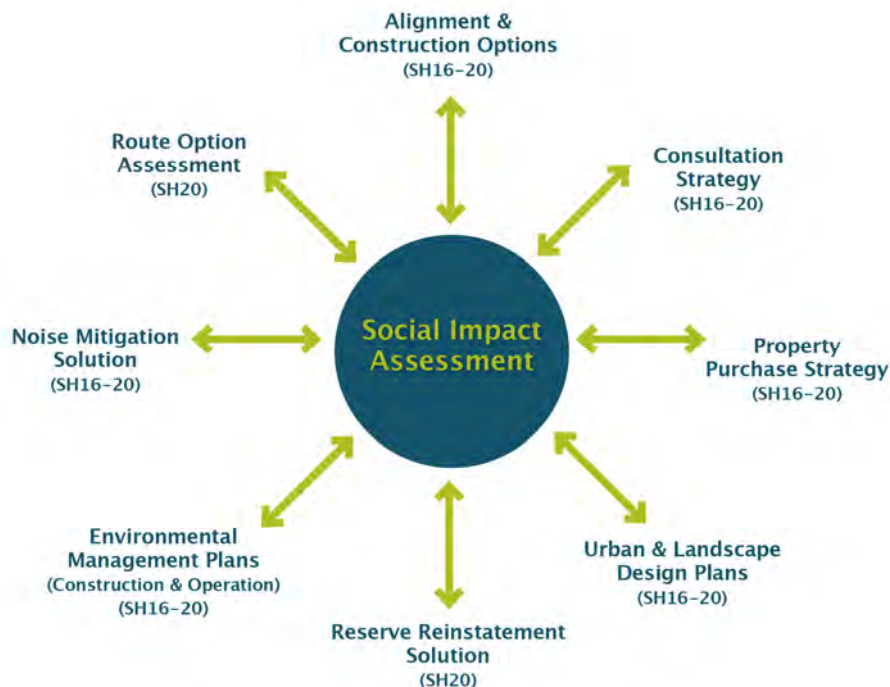
## 8. Design, Mitigation and Monitoring

Recommendations in this section have been broken up into four sub-sections:

- Mitigation by design;
- Environmental Management Plans/Procedures;
- Additional recommended mitigation measures; and
- Additional recommended monitoring.

### 8.1 Mitigation by Design

The Project design/mitigation development process and the SIA have been carried out in parallel. This has enabled a two-way process whereby community feedback and other social considerations have informed Project development and design. This process is shown conceptually in Figure 8-1.



**Figure 8-1: Relationship of Social Impact Assessment and Project Design/Mitigation Development**

**Route Option Assessment (SH20)**

Throughout the SH20 route option assessment, recognition has been given to the potential adverse social impacts, particularly local impacts, of the Project. This has resulted in the SIA team having a high level of involvement in the Project assessment/evaluation process and in consideration of social impacts in key stages of Project development. A summary of this process is as follows:

- Twelve route options were shortlisted during the Preliminary Scheme Assessment phase: seven connecting to the Rosebank Interchange, and five to the Great North Road Interchange (Waterview). The SIA informed the assessment/development of these route options, and the selection of route AW1 as the preferred option for SH20. This is documented in the *Preliminary Scheme Assessment Report (2003)* and is summarised in Figure 8-2 below; and
- Key factors in determining the social impacts of these route options included: impact on existing communities (eg. the AW1 and AR1 routes both traversed existing social and community barriers such as the Avondale Southdown rail designation, Oakley Creek, Great North Road and the coastal marine area of the Rosebank Peninsula) rather than severing these areas; the opportunity to integrate with other transport modes, and the avoidance of major sites of community infrastructure (such as Unitec).



**Figure 8-2: Assessment of Social Impacts of Route Options**

**Alignment and Construction Options (SH16-20)**

Similarly, recognition has been given to potential social impacts in the consideration of alignment and construction options for the Project. This has included the following elements for SH16:

- Social considerations and urban design elements have involved the development of construction and design options for the SH16 causeway, which provides for an open form comparatively free of built structures; and
- Retention of the right turn option on the SH16 westbound off-ramp at the Great North Road Interchange (Sectors 5/6), which was identified as a specific concern in consultation.

The SIA has informed the development of alignment and construction options for the SH20 section of the Project, including the following elements which play a significant role in reducing the potential local social effects associated with the Project:

- The identification of tunnelling construction options (proposed since 2003), where the provision of below ground sections of the route were identified as a means to avoid potentially significant social impacts (eg. associated with reserve and residential land take);
- Confirmation of the driven tunnel as a preferred construction option in 2008 due to reduced local social impacts (including loss of residential housing and reduced impact on reserves in the area) though higher total construction costs for the region as a whole;
- Retention of significant below ground sections of the alignment (Sectors 7 and 8) in the revised 2009 CST option, as a means to reduce the scope of adverse social impacts associated with the Project. This design is considered significant mitigation for a transport corridor through an urban environment<sup>64</sup>;
- The revised alignment design following 2009 consultation feedback has reduced the number of houses affected to 132 (compared to the 365 estimated in mid-2009 when the CST option was announced). However in doing this, the need to purchase underground land from residential properties above the tunnel has also increased from 111 to 154;
- The revised continuous tunnel design in Sector 7 has eliminated the previous gap between the two tunnelled sections, which was identified as a specific concern in consultation;
- A reduction in the length of 'cut and cover' tunnel section in Sector 7 has lessened potential community impacts from construction disruption and property acquisition in this area;
- In Sector 9 the focus has been on providing an integrated transport corridor (with the future Avondale-Southdown Rail line), while providing opportunities to maintain open space in this area. In Alan Wood Reserve, the layout of the new motorway and reserve has been considered to retain the maximum area of linked and usable open space. The tunnel portal has been extended as far east as possible under the constraints of the Project, maximising open space in the western end of the park; and
- An appreciable portion of the alignment in the vicinity of the Great North Road Interchange (which will connect SH16 with SH20) is located within land already designated for motorway purposes.

Where possible, construction yards across the SH16-20 have in the first instance been located as far as possible from sensitive land uses, particularly residential areas. Where this has not been possible, buffer areas have been proposed within the construction yards to minimise adverse effects (eg. from light spill and hazardous facilities). More detail can be found in the Construction Yard Plans in Part F of the AEE.

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<sup>64</sup> This is one of the key adverse impacts identified for alternative construction options considered for SH20.

### Consultation Strategy

- The SIA has informed the consultation strategy for SH20 over the Project's ten year consultation history. It has also informed the SH16-20 Project post-lodgement consultation strategy requirements. Ongoing consultation and communication throughout the Project's planning process has assisted in mitigating impacts of stress and uncertainty during the planning phase. However, it is recognised that this has been of more limited effectiveness for the SH20 study area where in some instances, decisions have been changed in between phases of consultation.

### Property Purchase Strategy

- In order to minimise property acquisition impacts, proactive and early property purchase has played a role in reducing the uncertainty for individual households in the Project area. In response to the Project, this strategy has already been implemented for 140 properties for SH20, and 30 properties for SH16 (at the time of writing). This staged approach to property acquisition has played a positive role in enabling individuals to move on with their lives in their own time, and to some extent provides communities with a 'transition period' prior to the commencement of construction;
- Further to the staged nature of property acquisition, the NZTA has provided assistance in individual cases (such as early/deferred purchases and the retention of periodic tenancies), and has assisted households in the resettlement process by providing relocation assistance in accordance with the Public Works Act (eg. assistance to purchase another dwelling, relocation costs, legal fees, disturbance payment, allowances for replacement of special equipment (eg. associated with a disability));
- The NZTA has worked with Housing New Zealand to provide advance warning regarding the purchase of properties from the national housing stock, to enable Housing New Zealand lead time to work with the individuals and families affected; and
- Partial property acquisition has been minimised to avoid unacceptable residential amenity impacts (eg. situations where residents would lose a significant part of their outdoor living area)<sup>65</sup>.

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<sup>65</sup> It is noted that in some instances, residents have expressed a preference for partial (rather than full) property acquisition as they wish to remain living in their current property. In these cases, residents have been made aware of the potential issues (eg. noise/amenity) and the NZTA team has proceeded with a partial acquisition agreement.



### Urban and Landscape Design Plans

- Social impacts identified through the SIA, along with stakeholder and public consultation feedback, have informed the design response put forward in the Urban and Landscape Design Plans.

### Reserve Reinstatement Solution

- The SIA has informed the Project reserve reinstatement solution, providing input on community feedback and social impacts to the reserve/urban design specialist and Planners responsible for developing the solution. The reserve reinstatement solution provides for reinstatement of reserve areas and facilities impacted by the Project, on a 'like for like' basis in terms of size and usability (as set out in section 3.5 of this report).

### Environmental Management Plans

- The SIA has informed the development of Environmental Management Plans, in order to address and help minimise impacts on surrounding residents and community sites. Specific elements to be managed in these plans are detailed in section 8.2 below.

### Noise Mitigation Solution

- The SIA has informed the preferred noise mitigation solution, through a series of 'best practicable option' (BPO) workshops held to enable an inter-disciplinary assessment of potential noise solutions. In The known views of residents and potential visual/amenity impacts were considered as part of the BPO evaluation process (along with noise, cost, urban design, safety and other considerations).

## 8.2 Environmental Management Plans/Procedures

### Construction Environmental Management Plans (CEMP)

CEMP's have been prepared for the Project and will be lodged with the AEE. The plans are based on best-practice management standards and have been informed in part by the SIA and consultation feedback, in order to address and help minimise impacts on surrounding residents and community sites. Specific elements of the plans relevant to managing the impacts identified in this SIA include management procedures for the following:

- Noise and vibration (including temporary relocation of affected residents on a case by case basis, where effects cannot be mitigated and where relevant standards are exceeded, and the scheduling of specific noisy activities to a time that suits affected parties (e.g. outside teaching hours/school holidays where adjacent to a school);
- Air quality, odour and dust;
- Ecology;

- Settlement impacts;
- Accidental discovery of archaeological sites;
- Visual amenity (including early planting of landscape design<sup>66</sup>, and graffiti and lighting management);
- Contaminated land;
- Traffic management (including truck routes<sup>67</sup>, pedestrian/mobility vehicle/cycle routes, property/facility access and communication of traffic management measures/temporary bus stop relocation); and
- Communication and complaints management<sup>68</sup>.

As part of the CEMP, a series of GIS plans/maps have been collated to show various cross-linkages between activities, effects and mitigation. These include sensitive sites from a social perspective (schools/childcare centres, hospitals and residential properties), as well as sensitive receptors from a noise, vibration and dust perspective, known archaeological sites and significant trees.

#### **Operational Environmental Management Procedures (OEMP)**

Once the Project is operational, the ongoing responsibility for operations and maintenance will be transferred to an Operations and Maintenance Contractor (presently this role is fulfilled by the Auckland Motorway Alliance (AMA)). Of note to this SIA, the existing AMA EMP includes provision for the following:

- Maintenance work and graffiti removal;
  - Vegetation maintenance; and
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<sup>66</sup> Early planting/landscaping is considered positive from a social perspective, in terms of helping to minimise visual impacts and perception issues people have particularly around noise and dust impacts of construction.

<sup>67</sup> Factors considered in the selection of haulage routes included noise, traffic safety and air quality, in order to minimise effects on surrounding sensitive areas. Because most of the Project is immediately accessible from the existing motorway network, these will be the preferred routes wherever possible. Within Sector 7, direct access to the motorway is not possible, requiring traffic to travel over a relatively short section of Great North Road (a regional arterial road) to reach SH16.

<sup>68</sup> Including procedures for advance notification of works, traffic/property access disruptions, complaints response procedures, identification of opportunities for community involvement.

- Receiving, recording and resolving complaints from stakeholders/road users.

Elements related to tunnel management are not covered by the AMA EMP, and will be covered in Project OEMP which will include management and monitoring procedures for the following:

- Air ventilation system and stack discharge;
- Noise and vibration impacts; and
- Tunnel emergency management.

Detail regarding the management of air quality during the operational phase is appended to Technical Report G.1 *Assessment of Air Quality Effects*. This proposes ambient air quality monitoring at two monitoring stations near to each ventilation station for at least 12 months, in order to account for variability in meteorological conditions. It also sets out that the results will be reported via the Project website (additional and specific communication of this information is discussed below).

Detail regarding the management of noise is detailed in Technical Report G.12 *Assessment of Operational Noise Effects*, and a proposed operational stormwater management plan is appended to Technical Report G.15 *Assessment of Stormwater and Streamworks Effects*.

### 8.3 Additional Recommended Mitigation

The recommendations below relate to the three phases of the Project; planning, construction and operation. Where practicable for recommendations relevant to the construction and operational phases of the Project, the recommendations below have been formalised through designation/consent conditions which will be submitted alongside the AEE and this SIA.

#### **Confirmed Decision on Project**

Stress and uncertainty in the current planning phase is one of the key social impacts associated with the Project. Should a decision be confirmed through the RMA process for the Project to proceed, this would play an important role in providing certainty for local study area residents, and enabling people to move on with their lives and make decisions that may have been delayed as a result of the uncertainty caused by the Project.

#### **Ongoing Community Liaison and Communication**

In addition to the communication and feedback/complaints protocol during construction (the details of which are set out in the CEMP), liaison and communication with the community during (and beyond) the current planning phase will be particularly important in minimising uncertainty and managing social impacts going forward. This would include at least the following elements:

- An announcement of the NZTA's next steps with regards to the Project, including that the Project will be lodged with the Environmental Protection Authority as a proposal of national significance. This

announcement should reach both regional audiences (eg. through media release and the NZTA website) and local audiences (eg. a letter drop to residents within the study area);

- Post-lodgement communication and consultation to address issues and concerns (including any associated with the decision not to incorporate elements of the urban design concepts showcased in Project Expos in 2010);
- Confirmation of the Project reserve reinstatement solution and timeframes for reinstatement, to provide certainty to local residents that an appropriate long term solution will be put in place in Waterview and Owairaka/New Windsor. This certainty will help to avoid a situation where adverse effects are attributed to insufficient certainty surrounding the future quality of replacement community facilities/amenities;
- Provision of information about the statutory approvals process, timeframes and consultation/submission opportunities. Consideration should be given to establishing a procedure to promote community involvement through the statutory approvals process (for example, an independent person to assist the community and provide advice on the 'national consenting process'). This will be important given that the national consenting process is new and may be intimidating for many people;
- Provide information to residents on the PWA process, their rights under this process, and the strata designation process, including providing information to households on where they can receive advice and assistance in relation to the relocation process;
- Communication of the results of relevant Project technical assessments where consultation has highlighted an interest/need for this information to be conveyed (this should include information on air quality and noise technical results/management measures and settlement/subsidence potential). This will be important in managing speculation associated with potential impacts of the Project;
- Continued communication of community concerns to the Project Manager and design team, so that these can be considered and where possible, responded to;
- Development of a consultation and communications plan with Waterview Primary School and Kindergarten (see below);
- Development and communication of ongoing opportunities for community involvement in detailed design and development of the Project, for example community planting days for reserve restoration and riparian rehabilitation; and

- Development of a communications plan to feedback the results of post-construction ambient air quality monitoring (undertaken as part of the Project OEMP) to interested parties<sup>69</sup>, and to advise on any appropriate action plans (to provide assurance that these effects will be responded to, in the unlikely event that adverse effects are identified).

### Property Purchase Strategy

It is recommended that the NZTA continue its staged property purchase strategy/resettlement assistance strategy that has been implemented through the planning phase. It is also recommended that the NZTA continue to work with Housing New Zealand to provide the corporation with maximum notice of any further properties required for acquisition, to assist with the early resettlement of these individuals and families. In cases where the property take for designation is considered to have a significant potential impact on the 'way of life' for residents (eg. significantly reducing outdoor living spaces), it is recommended the NZTA continue to give consideration to the complete purchase of properties (if residents choose this option).

### Land Use Impacts

In addition, given the limited statutory role of the NZTA as a transport agency, it is recognised that a partnership approach with other agencies provides an opportunity to appropriately and comprehensively mitigate the community/land use effects resulting from the Project's property acquisition requirements. Determining appropriate mitigation for residential acquisition will depend on the future land-use aspirations of these stakeholders. Accordingly, the SIA endorses the ongoing progress being made by the NZTA to form partnerships with relevant stakeholders (including ACC/the Auckland Council as the territorial authority, and Housing New Zealand), to create opportunities to enable a joint approach to the reinstatement of any residual residential land post-construction (eg. in Sectors 5/7 and 9). At the time of writing, it is noted that the NZTA has already taken steps to form this partnership. Regardless of this opportunity, it is recommended that the NZTA undertake the following with respect to wider community reinstatement:

- Where practicable, uplift the designation over surplus land once construction of the Project has been completed;
- Contribute to a design solution for surplus land (eg. through the Urban and Landscape Design Plans); and

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<sup>69</sup> Including Waterview Primary School and Kindergarten, St Francis School, Owairaka District School and Christ the King School. Dissemination of monitoring results to parents may then be undertaken by the schools as appropriate (for example, via school newsletters or on a more informal basis).

- Give consideration to the amalgamation of residential titles (if possible) to enable more comprehensive residential redevelopment following construction.

It is also noted that subsequent Plan Changes by ACC (to support an increased number of dwellings on residentially zoned land within the Waterview<sup>70</sup> and Owairaka communities) would further assist in mitigating the loss of dwellings and associated community impacts in Sectors 5/7 and 9.

### Construction Disruption

The Project assumes that construction yards will need to be available throughout the whole construction period, although it is likely that periods of activity within the yards will generally be concentrated over a more confined period of time associated with specific works. It is recommended that where opportunity exists to do so, construction yards in the most sensitive locations are not used following the completion of the key construction works required in each Sector. In particular this recommendation applies to yard 5 (adjacent to Waterview Primary School and Kindergarten, and residential properties along Waterbank Crescent and Herdman Street).

It is recommended that Hendon Avenue is not used as the main construction yard access and that construction vehicle access off Hendon Avenue is minimised as much as possible, to reduce disruption on local residents.

### Reserve Reinstatement Solution

In addition to the reserve reinstatement package set out in section 3.5, it is recommended that the expansion/development of Saxon Reserve occurs at the beginning of the construction period to allow for this area to be utilised for recreation during the construction period<sup>71</sup>.

### Impacts on Waterview Primary School and Kindergarten

The following is recommended specifically in relation to Waterview Primary School and Kindergarten:

- That the northern ventilation stack be located as far away from Waterview Primary School and Kindergarten as is practicable;

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<sup>70</sup> Consistent with the ACC Future Planning Framework aspiration for future medium density development in Point Chevalier and along Great North Road ('single dwelling small site/townhouse residential development' design typology).

<sup>71</sup> It is acknowledged that this will be dependent on property negotiations, given that Saxon Reserve is outside of the Project designation footprint.

- That the NZTA offer the option of temporarily relocating Waterview Kindergarten to an alternative site at least during construction (at no cost to the kindergarten), either within the grounds of Waterview Primary School (eg. the use of relocatable buildings) or a site in close proximity (to be agreed between the NZTA, Auckland Kindergarten Association and Waterview Kindergarten). Further consultation between the NZTA, Ministry of Education and Auckland Kindergarten Association/Waterview Kindergarten is required to determine the most appropriate mitigation solution for the kindergarten during construction, whether this involves temporary relocation or otherwise;
  - Development of a consultation and communications plan<sup>72</sup>, to facilitate an accurate information transfer and adequate feedback process between the school and kindergarten, parents of students, and the NZTA. The plan should include provision for communication with parents about the Project including its progress, effects and management procedures in place, and feedback/communication process during construction;
  - That the NZTA and appointed contractor(s) undertake consultation with Waterview Primary School and Kindergarten prior to the commencement of construction, given the proximity of construction yards 6 and 7 to the site. Opportunities to reduce or mitigate impacts (beyond those measures already set out in the CEMP) should be identified. This may include (where practicable):
    - Opportunities to carry out particularly disruptive works during school holidays or during times other than outside play breaks/sports activities;
    - Opportunities for 'breaks' in truck/construction vehicle access to construction yard 7 (where access is proposed via Great North Road) during school travel times in the morning and afternoons;
    - Specific noise, traffic or visual mitigation requirements;
    - Maintaining a safe crossing option over Great North Road (close to Herdman Street) for children and parents; and
    - Other measures to be developed in consultation with the Ministry of Education, Waterview Primary School and Auckland Kindergarten Association/Waterview Kindergarten.
  - That the NZTA and contractor work with Waterview Primary School and Kindergarten to develop an education programme for students about the Project and its construction (including information/education about traffic safety and air quality impacts); and
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<sup>72</sup> A working group between the NZTA, Ministry of Education, Waterview Primary School and Auckland Kindergarten Association is currently in place.

- Once operational, development of a communications plan to feed back the results of post-construction ambient air quality monitoring (eg. dissemination of monitoring results to parents as appropriate via school newsletters or on a more informal basis).

### Impacts on Other Educational Facilities

In accordance with the proposed designation/consent conditions (which will be submitted, together with this SIA, as part of the lodgement documentation), it is recommended that the NZTA offers to provide information and/or develop an education programme about the Project for students of schools and kindergartens that may be impacted by perception issues associated with the ventilation stacks to raise awareness about actual air quality impacts expected. This should be targeted at schools/kindergartens in the immediate vicinity of the northern and southern ventilation stacks, and would include at least the following organisations:

- St Francis School;
- Owairaka District School;
- Owairaka Kindergarten;
- Odyssey House School;
- Kidz Unlimited Learning Centre;
- Treasure Hunt Childcare Centre;
- Little Dudes Childcare Centre; and
- Christ the King School.

## 8.4 Additional Recommended Monitoring

In addition to that monitoring proposed as part of the CEMP and OEMP (eg. noise and air quality monitoring), it is recommended that the NZTA develop and implement a programme to monitor the following in relation to relevant education facilities in the local study area (and in particular, Waterview Primary School and Kindergarten), through the construction period and at least 12 months following the completion of construction:

- Roll; and
- Specific concerns of teachers/parents/children.

Should monitoring confirm social impacts beyond those envisaged in developing this mitigation strategy (eg. impacts on the future viability of education facilities), the mitigation strategy should be updated accordingly.



Response measures may include consideration of wider education campaigns for the school/community, or other measures developed in consultation with the education facility and Ministry of Education.

This recommendation has been developed into proposed designation/consent conditions which will be submitted, together with this SIA, as part of the lodgement documentation.

## 9. Summary

The Waterview Connection Project is large and complex, with a high level of contention and varying spatial distribution of benefits. Recognising this difference, assessment has been carried out on two different scales: regional and local. Assessment was carried out for the planning, construction and operation phases of the Project.

### 9.1 Summary of Regional Impacts

The Project has regional significance particularly in terms of the accessibility outcomes it will generate in the Auckland region. Regional impacts are not anticipated in the planning phase. During construction, regional impacts are generally considered to be minor to moderately negative social impacts relating to disruptions to accessibility and connectivity along the SH16 corridor during peak travel times in construction, and impacts on people's perceptions of environmental quality. Once constructed, the Project is considered to result in the following positive impacts on a regional scale:

- Significantly positive social benefits to the Auckland region in relation to transport, accessibility and connectivity outcomes;
- Significantly positive social benefits in terms of people's economic wellbeing, access to employment opportunities, and opportunities to provide for material quality of life in the Auckland region and realising the region's growth aspirations;
- Minor negative to minor positive social impacts in relation to people's perceptions of environmental sustainability in the Auckland region, associated with environmental impacts and proposed benefits (via mitigation/enhancement) on the regionally significant Motu Manawa (Pollen Island) Marine Reserve, Traherne Island and Oakley Creek; and
- Moderately positive impacts in relation to improved traffic safety, active modes of transport and access to health and recreation services.

While overall the Project reduces congestion and therefore has positive impacts on the projected vehicle emissions to air in many locations in the local study area and across the regional arterial road network, overall the Auckland Regional Land Transport Strategy HIA considers that transportation projects and the transportation network continue to have health consequences across the region, which is considered to represent moderate negative social impacts.

## 9.2 Summary of Local Impacts

It is at the local level where most adverse social impacts will be realised. Effects of the Project during the planning phase are considered to encompass minor positive, neutral and minor to moderate negative impacts, reflective of the range of views and concerns expressed by individual residents within the study area. This has been further broken down to include:

- Minor positive impacts in some cases, and minor to moderate negative social impacts in other cases, on the attitudes, expectations and aspirations of local communities (depending on people's specific circumstances during the planning phase). Impacts range from Sector to Sector, but are generally considered to be the most severe in Sectors 5 and 7 - 9 where there have been a variety of different proposals to construct the SH20 Project over the last ten years;
- Neutral to moderate negative impacts on people's wellbeing and way of life, reflective of the range of opinions and level of concern expressed to date by individual residents within the study area, and the uncertainty of the Project's planning process; and
- Minor to moderate negative 'community' impacts in anticipation of the Project and as a result of early property acquisition, mainly experienced by the Waterview community.

The Project is not considered to result in any social impact in relation to people's culture during the planning phase.

Social impacts in the construction phase are considered to range from minor positive to minor to potentially significant negative social impacts, varying across the study area according to proximity to construction areas and the types of construction activities being undertaken. The most significant social impacts will be experienced by residents living directly adjacent to construction areas (eg. within 20m of the Project footprint), and by the Waterview Primary School and Kindergarten (given the long five to seven year construction period). This has been further defined to include:

- Minor positive to minor negative impacts in relation to people's attitudes, expectations and aspirations, depending on individual perceptions and the level of nuisance experienced by local residents;
- Minor positive impacts to minor and moderate negative impacts on people's wellbeing and way of life. Positive impacts relate to socio-economic activity associated with the high levels of local employment in the construction of the Project. Impacts on individuals and households will vary depending on proximity to construction areas, with the most significant impacts envisaged to affect residents living adjacent to SH16, the Great North Road Interchange (in Sector 5) and Alan Wood Reserve (Sector 9); and
- Minor negative to potentially significant negative impacts associated with impacts on community facilities and changes to community composition/character in Te Atatu, Waterview and Owairaka/New Windsor. Construction impacts on Waterview Primary School and Kindergarten will be potentially significant, mainly due to potential roll impacts.

A broad range of social impacts are associated with the operational Project, ranging from moderately to significantly positive benefits (for the wider local study area) to potentially significant negative impacts (for localised areas). The most significant impacts relate to the impact of property acquisition on individuals, households and communities, particularly in Waterview where impacts will be the most widespread. Improved accessibility will generate the greatest benefits for study area residents. Impacts have been further defined to include:

- Minor positive to minor negative social impacts in relation to people's expectations and aspirations, as most people either become more accepting towards the Project, or to choose to move on from the study area;
- Moderately positive benefits to potentially significant negative impacts in relation to people's wellbeing and way of life. The Project will generate positive impacts associated with improvements to accessibility and people's patterns of living. Negative impacts are primarily associated with the changes character and amenity (or liveability) of certain local areas in the study area, and property acquisition (with residents in Sectors 5 and 9 particularly affected due to more limited mobility);
- Neutral to moderate positive social impacts in relation to people's culture, with the main benefits resulting from improved public access to the Star Mill heritage site around the Great North Road Interchange;
- Moderately to significantly positive community benefits associated with improvements to local accessibility and access to local business nodes; and
- Minor to potentially significant negative impacts, with the most severe impacts associated with the fragmentation of residents in Waterview/Owairaka and the potential for roll impacts at Waterview Primary School.

It is anticipated that most adverse impacts will be able to be reduced/mitigated by the CEMP and additional mitigation measures set out in section 8 of this report. However, it is acknowledged that the potentially significant community impacts associated with the fragmentation of 'vulnerable' residents particularly from the Waterview and Owairaka communities and the potential for a change to the roll of Waterview Primary School and Kindergarten are not as easily able to be mitigated, and will require a combination of monitoring and multi-stakeholder response (as detailed in section 8).