

27. Social effects

Overview

Construction and operation of the Project has the potential to generate adverse social effects as a result of noise and vibration, air quality, and traffic and access, affecting amenity, connectivity and movement, local character and recreation values. Measures outlined within the CEMP and its subsidiary plans for traffic, noise / vibration and air quality will be used to ensure that any adverse effect on the social environment arising from construction will be appropriately mitigated. Once the Project is operational, it is anticipated that the proposed mitigation measures will also ensure that any adverse social effects will be appropriately managed.

27.1 Introduction

This chapter provides an assessment of the Project in relation to social impacts. An assessment of social impacts focuses on the experiences (actual or anticipated, direct or indirect) of individuals, families / households, or communities in response to changes induced by a project.

By their very nature, social impacts are often the 'human' experiences of other effects. For example, people may be concerned about the effects of dust on their property, but effects of the Project on Air Quality are discussed in the Air Quality Assessment, where appropriate mitigation for these effects is given. As such, it is important to avoid the "double counting" of effects where there are such overlaps. Thus, effects that are dealt with in the other specialist reports are also acknowledged within this social impact assessment chapter, where relevant, but an overlapping of discussion has been restricted. Perceptions of amenity values are, however, fully acknowledged in this social assessment.

Therefore, this chapter has been informed by the Social Impact Assessment (**Technical Report 17**) as well as a number of relevant technical assessments and the preceding assessment chapters.

27.2 Existing social environment

The SIA has established a local study area for the purposes of profiling the existing environment and for assessing local social impacts associated with the Project. The SIA identifies six main community areas within the Project Area:

- Paekakariki: This community area includes MacKays Crossing Interchange on SH1 and the coastal community of Paekakariki. The surrounding areas are predominantly horticultural and pastoral and contain a number of rural residential properties. This community area is within the Kapiti Coast District.

- Rural communities (Maungakotukutuku and Paekakariki Hill): This community area contains predominantly rural land, comprising of forest and areas of steep pasture land. There are several rural residential dwellings within this community area. However, there is limited community infrastructure and resources. These are within Porirua City.
- Pauatahanui and Whitby: This community area extends through rolling rural and rural residential land north of SH58, crosses SH58 and a low-lying marine plain associated with the Pauatahanui Inlet, then climbs the moderately-steep terrain to the south. The community area includes the communities of Pauatahanui and Whitby and is within Porirua City.
- Eastern Porirua: This community area includes the communities of Ascot Park, Waitangirua, Cannons Creek and Ranui Heights, with residential being the predominant land use. This community area is in Porirua City.
- Linden and Tawa: This community area traverses a number of steep gullies, and ends in the gentle slopes of the Porirua Stream Valley at Linden. It includes the communities of Linden, Tawa and Greenacres, which are within Wellington City; and Porirua Central, within Porirua City. Residential activity is the predominant land use.
- Coastal communities: The coastal communities which fall within the wider study area (i.e. Pukerua Bay, Plimmerton, Mana-Camborne, Paremata, and Papakowhai), but are not directly adjacent to the Project route, form this community area. These communities may be indirectly affected as a result of the Project. Residential activity is the predominant land use, but with high landscape, recreational and cultural values. SH1 currently severs a number of these coastal communities.

These community areas are shown in Figure 27.1.

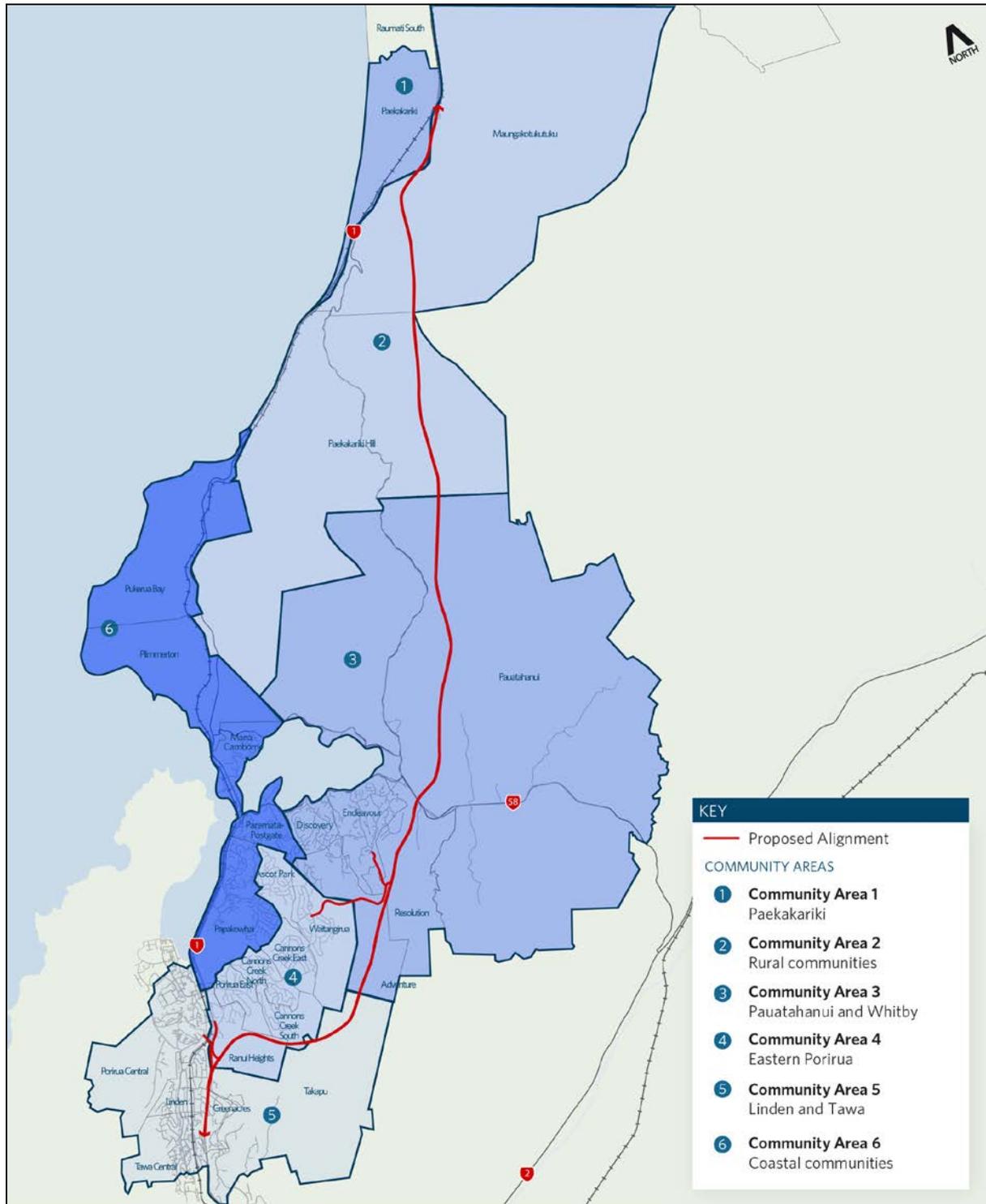


Figure 27.1: Community areas identified within the SIA

Potential social effects can be created from both the construction and the operation of the Project. The potential effects from each phase are different and have therefore been considered separately. The social impacts associated with planning for the Project have also been considered, and are discussed in the SIA. However, they are not discussed in this chapter because they have already occurred, and are not relevant for the purposes of deciding whether or not the requirements for designations should be confirmed or the applications for resource consents should be granted.

27.3 Assessment of social effects during construction

The main potential social impacts arising from construction activities are considered to relate to:

- construction noise and vibration effects;
- air quality effects;
- traffic and access effects;
- effects on recreational activity; and
- landscape and visual impacts.

As outlined above, these social impacts are the ‘human’ experiences of other impacts, the effects of which are explained in the preceding assessment chapters and within the technical reports. As such, it is important to avoid the “double counting” of effects where there are such overlaps. Therefore, the following sections will outline the social impact, and cross reference to the relevant chapter and technical report for more specific information on the actual or potential effect.

The Project is considered to be a major construction project, both in terms of the timeframes and scale of works involved. As such, the following are described as potential adverse social effects arising from the Project’s construction, and are discussed in the sections below:

- anxiety about construction effects; and
- disruption to the community.

27.3.1 Noise and vibration

Day time construction noise will generally not affect residents beyond some nuisance / disturbance during particularly noisy works, although people who stay at home during the day (including people who work from home, are sick, or who work night shifts) could be disproportionately affected by long periods of noisy works. A large proportion of the construction works, including a concrete batching plant, will be in the vicinity of the SH58 Interchange. Residents in close proximity to this area may be subjected to long periods of noisy works. Effective noise management is therefore essential to reducing these noise effects as far as practicable.

Noise and vibration effects are discussed in Chapter 16 and in **Technical Report 12**.

27.3.2 Air quality

Construction of the Project will entail large scale earthworks and other activities, such as contractor’s yards, concrete batching, and mobile rock crushing, all of which 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 also impact on people’s enjoyment of outdoor areas and cause perceived or actual health impacts.

The air quality assessment, described in Chapter 17 and in **Technical Report 13**, assesses the potential effects associated with construction (dust and vehicle emissions) along key routes – and focuses on sensitive receptors in the community, such as residential areas, schools, preschools and healthcare facilities. Management measures to be put in place will ensure the adverse effects of dust will not be significant at these locations.

27.3.3 Traffic and access

During the construction phase some suburban and rural roads will be used for construction-related traffic. Some temporary disruption to access for community facilities, schools, health centres and regional parks, or on cycleways and pedestrian linkages may occur. However, the development of a Construction Traffic Management Plan (CTMP) and the availability of alternative public access points elsewhere will ensure impacts on people's way of life will be appropriately managed.

Traffic effects are discussed in Chapter 13 and in **Technical Report 4**.

27.3.4 Recreation

Overall, access to Belmont and Battle Hill Regional Parks (and pedestrian and cycle linkages through the Parks) will be maintained in the long term (post-construction), but there will be some minor changes to the Parks during construction in order to manage phasing of construction activities. For example, several of the existing tracks will be used for construction access, limiting public access at these points, including walking and cycling connections.

Horse riding on Paekakariki Hill Road has been identified in the SIA and during consultation, as a popular recreational activity within Regional Parks, on private land and on local roads. There may be some disruption to this activity during construction of the Project resulting from additional construction traffic on roads causing safety concerns, and from occupation of publicly owned land (i.e. Regional Parks). Similarly, construction of the Project has the potential to affect well-used regional cycle routes, including Kenepuru Drive, SH58 and SH1 at MacKays Crossing.

There will be other effects on recreation as a result of the construction of the Project. Water based recreation may be affected, as people are less likely to swim, fish or participate in water sports if the water quality of streams and / or the Harbour is affected, for example by any sedimentation resulting from the Project. Management measures are to be put in place to ensure that the adverse effects on water quality will not be significant, during the construction of the Project, so that recreational opportunities will not be affected. Chapter 20 contains a discussion on the measures that will need to be implemented to reduce the adverse effects on water quality.

27.3.5 Landscape and visual

The main visual effects during the construction phase will arise from construction yards, partially completed road elements, and concentrations of vehicles and machinery at the construction sites. These elements will represent a significant change in the amenity and the 'look and feel' of neighbourhoods (including recreation areas such as Lanes Flat and at the Regional Parks) for local residents (particularly for those who will have a view over construction sites), over a reasonably long duration. This may affect people's pride in their neighbourhood, but as the visual effects of

construction are temporary, it is not considered to have a significant impact on wellbeing or way of life. Some people, including children, will have a genuine interest in the construction work and activity in their neighbourhood and these people may consider that the visual impact of construction is not an adverse effect.

Landscape and visual effects are discussed in Chapter 25 and in **Technical Report 5**.

27.3.6 Anxiety

While it is expected that there will be a sense of relief amongst some people once construction of the Project finally starts (given the long duration of the designations and speculation and uncertainty about the Project for many years), this will be tempered by the fairly lengthy construction period overall.

Construction works, especially those with long timeframes, can be socially disruptive and can represent an annoyance to surrounding residents and road users, depending on how well they are managed.

27.3.7 Disruption to the community

There will be disruption to the community during the construction phase of the Project as a result of such matters as construction traffic, noise and perception arising from large crews of workers present in the area. There are a number of community facilities in close proximity to the Project, and there may be some inconvenience during construction, particularly in relation to access for these facilities. This may be particularly the case at the Tokelau Church in Waitangirua, St Joseph's Church on SH58, Belmont and Battle Hill Regional Parks (discussed in 26.3.4, above), and at the Maraeroa Marae.

The Maraeroa Marae is an important community facility in Waitangirua, which will be affected by the Project. The Link Road that enters Waitangirua will share a boundary with the Marae, creating noise and access inconvenience during construction. Members of the Marae also have concerns over parts of their land which may be affected by the Project, for example by noise walls on the property, including an area of land of particular significance to some Marae members.

Potential benefits to the community can also arise during the construction period, arising from increased activity brought about by construction and new workers in an area. There will be a daily influx of temporary construction workers during peak construction time. This may bring significant benefits, particularly in terms of increased spending at local businesses (especially food outlets), and passive surveillance that large groups of people can provide. However, small communities may struggle to accommodate the demand that is placed on its local facilities, as a result of the influx of construction workers.

27.4 Assessment of social effects from operation

There are a number of operational consequences of the Project (including unintended consequences) outlined in the SIA, which may impact on people's wellbeing and way of life. As in the construction

effects section above, the following sections will outline the social impact, and cross reference to the relevant chapter and technical report for more specific information on the effect.

27.4.1 Noise and vibration

All properties near the Main Alignment and those which are considered to be sensitive receptors—including schools, residential properties, care centres and churches – have been assessed against the New Zealand Standard 6806:2010 Acoustics: Road Traffic Noise. At the interchanges there will be an increase in road-traffic noise levels, but these remain within the criteria set by NZ Standard 6806.

Heavy vehicles on roads can generate vibration that travels through the ground to nearby houses. Typically this is well below limits set to avoid structural damage to houses or cosmetic damage such as cracking plaster and paintwork. Vibration levels reduce as vibration travels further away from a road. A detailed assessment of road-traffic vibration has been conducted (refer to Chapter 16 and **Technical Report 12**), which includes measurements of vibration from the existing SH1 in Linden, and has been found that beyond approximately seven metres from the road any vibration noticed would be at an acceptable level. It is noted that there are no houses within seven metres of the proposed Main Alignment.

Without any management measures it is likely that there would be adverse effects to surrounding communities, facilities and schools (e.g. Linden School), arising from noise.

It should be noted that a large proportion of the Main Alignment will traverse areas in which there are no residential areas, such as the 'Rural Communities' in the vicinity of Maungakotukutuku and Paekakariki Hill Road, and therefore people's wellbeing is not expected to be impacted in these areas.

27.4.2 Air quality

Vehicle emissions and the potential adverse health impacts associated with these emissions are a potential impact relating to the operational phase of the Project, especially in relation to people's wellbeing. Air Quality effects are outlined in Chapter 17 and in **Technical Report 13**. Traffic volumes are predicted to increase at several locations, including Kenepuru Drive and SH58 east of the Main Alignment, and in areas surrounding the Porirua Link Roads, once the Project is operational.

A key benefit of the Project is the removal of traffic from local roads and the existing SH1 route, which is prone to congestion at commuter and holiday peak periods, to the alternative Project route. The result is a more efficient movement of traffic, and hence less congestion. Therefore, whilst there will be increased traffic volumes at several locations, the traffic will be generally moving un-impeded, thereby reducing the rate of vehicle emissions.

27.4.3 Amenity

The completed Project will represent a significant change in the amenity¹⁵⁸ of the area for local residents, with potential adverse noise and visual effects, particularly for those with a view of the Main Alignment and the Link Roads.

There will be an effect on amenity at Belmont Regional Park due to the introduction of the Main Alignment. There will also be an adverse effect on amenity at Battle Hill within the Horokiri Stream Valley, where at present this Valley has a remote and quiet character, which will be fundamentally changed by the proposed road. The Main Alignment will also separate the most heavily used part of the Battle Hill Farm Forest Park from the trails in the pine forest on the opposite side of Horokiri Stream. There will be an effect on amenity at Mahoe Park and Arthur Carman Park, in Linden, once the Project is operational. However these are both currently affected by the existing Wellington-Johnsonville motorway. These landscape and visual effects are further discussed in Chapter 25 and in **Technical Report 5**.

Mitigation measures, including planting for affected visual outlooks and noise barriers for increased noise effects, will need to be implemented to reduce the potential adverse effects from this change in amenity.

27.4.4 Connectivity and movement

Effects on connectivity and movement resulting from operation of the Project have been identified within the SIA as a social impact. Generally, the Project will reduce travel distances and generate accessibility and connectivity improvements in the community areas within the Project Area, which is considered to result in positive social impacts on people's patterns of daily living.

Improved accessibility along the new State highway network will benefit people's patterns of daily living by improving connectivity and reducing travel times to other areas in Wellington, including places of work, community facilities and facilities of regional importance, such as Wellington International Airport. The Project may have the potential to provide further opportunities for redevelopment of businesses in areas where they may not have previously been so viable, as a result of increased traffic flow (e.g. at Waitangirua).

While there has been some comment from residents in Paekakariki who feel they may be disadvantaged by limited access points on to the Main Alignment, there will be an overall net benefit to people's access to the State highway network. For example, Paekakariki residents will have to travel north to enter the State highway network once the Project is operational; however the reduced traffic along the existing SH1, particularly at the entry point into Paekakariki, is a positive operational effect of the Project, in terms of road safety and ease of accessibility.

158. The RMA definition of amenity values is "natural or physical qualities and characteristics of an area that contribute to people's appreciation of its pleasantness, aesthetic coherence, and cultural and recreational attributes".

Without the proposed mitigation measures there would be a loss of pedestrian connectivity, and reduced safety of regional cycle network around SH58 Interchange, and also on Warspite Avenue in Waitangirua. However, there will be reinstated or alternative cycling and walking tracks in some areas and a signalised junction with pedestrian phase at Warspite Avenue junction with the Porirua Link Road. These measures are outlined in the Urban and Landscape Design Framework (**Technical Report 23**) and the Assessment of Traffic and Transportation Effects (**Technical Report 4**).

A significant impact for the coastal communities is the overall reduction in traffic as well as reduced severance. In this instance, 'severance' is used to describe the effects of roads and traffic that physically separate a community. Roads and traffic can affect social interaction and accessibility, particularly when the roads are wide and there is a high volume of traffic. Significant roads, such as SH1 in this instance, also have few crossing points for pedestrians and cyclists, and it is also difficult for local traffic to enter the road network. Communities may feel cut-off by the physical presence of the road and there may be perceptions of danger associated with living near a busy arterial.

Currently, several of the communities along SH1, particularly at Mana and at Pukerua Bay, experience east-west severance as a result of the State Highway. The Project will provide an alternative route to the existing SH1 and, as a result, the existing SH1 is expected to have reduced traffic volumes. A less busy road, with fewer vehicles, reduces its severance effects.

The reduced severance of the existing SH1 will increase access opportunities to private residences that are accessed off SH1, as well as to community facilities including retail and medical centres, and to churches. This is especially pertinent in the Mana area, which has a number of retail stores and takeaway outlets accessed directly off SH1. Pukerua Bay will also benefit from a reduction of traffic, as residents have stated that crossing SH1 presents a number of safety and mobility issues for residents and is the major contributing factor to community severance, posing both a real and perceived barrier. Reduced severance is also expected to improve the amenity of those communities and provide opportunities for the potential enhancement of the urban environment.

27.4.5 Safety

Improvements to the overall transportation network will bring about significant improvements to road safety, particularly along the existing SH1 route, 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). Some sections of the existing SH1 between Linden and MacKays Crossing have unusually high crash rate severity. The Project is expected to significantly improve road safety performance, by providing improved modern design standards. The Project will feature safety improvements, such as a continuous median barrier separation for northbound and southbound traffic and grade separated intersections. The overall effect will be improved road safety for road users, as well as for the communities along the existing SH1.

The Porirua Link Roads will introduce increased traffic volumes into Whitby and into Waitangirua. This has the potential to decrease road safety for people within these areas. Recommendations for traffic calming have been made in the Urban Design and Landscape Framework report, which will be taken into consideration by PCC, for the design of the Link Road, where it connects into Waitangirua, to include measures for reducing driver speed on entry into the local road network. This will reduce the adverse effects of increased traffic for road users and for pedestrians in these areas.

The incidence of crime is often reduced when areas are well lit at night time and have increased traffic volumes. As such, this is a positive effect resulting from the operational phase of the Project, especially in areas that did not previously have high traffic numbers, such as in Waitangirua.

27.4.6 Route security

SH1 between Linden and MacKays Crossing is vulnerable to several threats which collectively reduce the security of the route, including large earthquakes, tsunami, and high rainfall events, which cause flooding, and road traffic crashes. The Project will improve the security of SH1 and the security of the Region's road network, by providing an alternative route to the current SH1. The modern design standards will also provide increased resilience to natural hazards.

The result of this is a reduced road closure period in the event that the Main Alignment is affected by any of these threats, providing a positive effect for people's wellbeing, as reduced road closure periods allow for more rapid response by emergency vehicles and improved access to regional hospital facilities following a major natural disaster. The Project will also provide improved access to key electricity transmission, gas and water infrastructure following such an event. The availability of alternative routes will also allow traffic to be diverted, rather than stopped, in the event of a road closure on one of the routes. These measures will positively impact on people's confidence in the transport network and general wellbeing.

27.4.7 Local character

Impacts in relation to people's expectations of local character vary between community areas, and according to people's individual expectations. For example, at MacKays Crossing and Linden (these being the connection points at each end of the Main Alignment), the operational 'reality' of the road is not expected to differ greatly from the existing environment. However, it should also be acknowledged that in other areas impacts on people's actual living environment will be permanently changed. For the rural section of the Project (i.e. in the vicinity of Paekakariki Hill) there will be a significant change to the local character and landscape caused by the new road structures and associated traffic, although given the rural nature and lack of community infrastructure in the area, significant impacts on services and facilities are not anticipated in this area.

Varying in extent between community areas, the Project will result in a permanent alteration to local character, including:

- for the MacKays segment of the Project and for the Linden community area, this change in character will generally be a minor increase to existing effects experienced by residents who are already in an environment dominated by a busy arterial State highway;
- in Eastern Porirua and Tawa / Linden, the main arterial road structures will generally be located at the extremity of communities and will form an edge effect. The Link Roads will introduce a change of character to these community areas particularly in terms of new structures and increased volumes of traffic and consequential increased sense of activity. Some residential areas will experience a change in local character because they will overlook the new road.

As previously discussed in relation to connectivity and movement, there will also be a reduction in severance on the existing SH1, which increases accessibility and safety. Reduced severance can also improve the amenity and local character of communities, providing opportunities for the potential enhancement of the urban environment.

While attention is needed with respect to specific design of intersections, pedestrian facilities, walkways and cycleway connections, in general, it is expected there will not be significant adverse impacts resulting from the Project on local communities.

27.4.8 Recreation opportunities

Overall, access to Belmont and Battle Hill Regional Parks (and pedestrian and cycle linkages through the Parks) will be maintained or improved. Whilst the route necessarily removes parts of these parks, the key points are:

- pedestrian and cycle linkages will be maintained across the Project;
- in Belmont Regional Park there are two spur trails from the main ridge to Duck Creek, from where there are two connecting trails to Cannons Creek Lake Reserve in Waitangirua. Physical access will be maintained along the existing trail alignments by making use of bridges in order to pass under the Main Alignment;
- construction of a new track as part of the Project, to be made available for recreational users, linking QE Park and BHFFP; and
- at BHFFP, the Project has been anticipated for some time and the park development appears to have taken it into account by avoiding trails and facilities in this area. The connection to the pine forest trails will be maintained by means of underpasses. From within the pine plantation the road will be screened, although users will still be aware of its presence, if only from traffic noise.

There will be opportunities for some Crown-owned blocks of land in the area to be made available to the Wellington Regional Council, under the Public Works Act 1981. This land could then be used as Regional Park, in place of any land lost as a result of the Project.

There will be other effects on recreation as a result of the operation of the Project. Water based recreation may be affected, as discussed previously. People are less likely to use waterbodies for recreational purposes (e.g. swimming, fishing etc.) if the water quality of streams and / or the Harbour is affected. There may be some disruption to this activity during construction of the Project, however, it is not anticipated that these effects on water based recreation will continue to be adversely affected once the Project is operational. The assessment of water quality effects (Chapter 20) outlines the measures that will need to be implemented to reduce the adverse effects on water quality.

There will be provision made for the relocation of the Porirua Gun Club (which is impacted by the Main Alignment) to a new location in consultation with various parties. Parts of the Pauatahanui Golf course will need to be rearranged, but will be able to continue to operate once the Project is operational.

Horse riding on Paekakariki Hill Road has been identified in the SIA as a popular recreational activity. There may be some disruption to this activity during construction of the Project, but it is not considered that this activity will be adversely affected once the Project is operational.

27.5 Measures to avoid, remedy or mitigate potential adverse social effects

From the SIA, the following potential adverse social effects were identified:

- noise and vibration (construction and operational phases);
- air quality (construction phase);
- traffic and access (construction phase);
- amenity (operational phase); and
- recreation (construction and operational phase).

For the construction phase of the Project, the Construction Environmental Management Plan (CEMP) and its subsidiary plans for noise / vibration, air quality and traffic are used and will form part of the suite of consent and designation conditions. The NZTA and PCC will require their contractors to perform to a high level in relation to managing stakeholder and community expectations. Communication will be the key tool to manage effects, allowing the NZTA, PCC and the contractors to understand how the community feels and ascertain the most appropriate way to manage community concerns.

Once the Project is operational, adverse effects will be mitigated through a variety of methods:

- To mitigate the adverse effects arising from noise and vibration, noise barriers and bunds will be installed as appropriate near private residences, as well as near schools (e.g. Linden School) and other community facilities (e.g. Maraeroa Marae);
- To mitigate the adverse effects on visual amenity, planting will be incorporated. For example, central areas and road margins will be planted with low growing species and taller trees and shrubs will be introduced as a view shaft for the existing houses and to frame views along the road corridor. Proposed planting measures are outlined in the Landscape and Visual Assessment (**Technical Report 5**). Noise barriers will also be provided to mitigate adverse effects on amenity, as outlined above. At Maraeroa Marae, the mitigation for effects on amenity (e.g. noise walls) may impact on culturally sensitive land in the Marae grounds. It is important that if this land is disturbed, provision will be made for these locations to be marked for remembrance;
- To mitigate the adverse effects on recreation:

- A short section of cycleway will be constructed parallel to the north-bound onramp near MacKays Crossing as part of a long distance cycleway that follows the coastal route from Paekakariki through Pukerua Bay and the Taupo Swamp¹⁵⁹. The landscape amenity of the coastal route is likely to improve for cyclists as a result of the substantial reduction in traffic.
- A new track will be constructed for recreational users, linking BHFFP through to QE Park.
- A cycleway and footpath underpass will be constructed adjacent to the Pauatahanui Stream. The proposed restoration of Lanes Flat involves the construction of a new wetland habitat in the Lanes Flat area. This area will be constructed for stormwater management, ecological enhancement and visual amenity reasons. This area will also incorporate walking trails and a recreational cycle track leading alongside the stream and underneath the alignment. The underpass will be constructed both to allow pedestrian and cycle access, and to allow passage of the stream underneath. This will add to recreational amenity. The design of underpasses and bridges apply CPTED principles to encourage safe and useable facilities.
- Detailed design at Kenepuru Drive tie-in to accommodate the regional cycle route.
- A Traffic Management Plan to be prepared recognising that horse riders are present on local roads such as Paekakariki Hill Road, and a focus on making linkages clear.
- Effects on water quality will be managed through methods for erosion and sediment control as outlined within Chapter 20 and **Technical Report 15**.

159. Taupo Swamp is a lowland freshwater swamp, located three kilometres north of Plimmerton, adjacent to SH1.