

PART G: ASSESSMENT OF EFFECTS ON THE ENVIRONMENT

11. Summary of environmental effects

Overview

The Project will have a number of positive and adverse effects. These will vary in significance, scale (local, regional and national), intensity and duration. The Project will have significant positive transport effects at a local, regional and national scale, including:

- improved route security and resilience for the region's State highway network
- improved safety and reduced crash risk;
- significant travel time savings;
- more efficient freight movement and associated economic benefits;
- improved connections to regional freight hubs, including the port, airport and distribution centres; and
- improved access to eastern Porirua (Porirua Link Roads) and western Porirua (Kenepuru Link Road).

Potential temporary effects during construction of the Project include:

- nuisance effects (e.g. dust, noise, traffic, amenity) from construction activities;
- increased sediment entering streams (and consequently coastal waters); and
- disruption and loss of terrestrial and freshwater habitats.

Potential long term effects from operation of the Project (in addition to transport effects) include:

- significant and noticeable changes to some natural landscapes and some streams;
- extensive landscaping of Lanes Flat;
- the retirement of land and the native revegetation of pasture (including riparian planting) predicted to result in a net gain (both in terms of quantity and quality) of terrestrial and freshwater habitat;
- a significant reduction in traffic volumes along existing SH1, leading to:
- reduced severance for coastal communities; and
- a reduction (at a regional scale) in public exposure to vehicle emissions.

11.1 Introduction

The purpose of this chapter is to provide a summary of the actual and potential effects of both the construction and the operation of the Project. This is a summary of the effects discussed in the rest of the chapters in Part G. It is intended to provide an overview of the effects associated with the Project, including whether they are positive or adverse and the scale they are likely to occur at (i.e. local, regional or national). It does not cover proposed mitigation or offsetting.

Section 3 of the RMA defines 'effect' as including:

- (a) *any positive or adverse effect; and*
- (b) *any temporary or permanent effect; and*
- (c) *any past, present, or future effect; and*
- (d) *any cumulative effect which arises over time or in combination with other effects - regardless of the scale, intensity, duration, or frequency of the effect, and also includes -*
- (e) *any potential effect of high probability; and*
- (f) *any potential effect of low probability which has a high potential impact.*

Further details about effects are described in the following chapters in Part G and in the associated technical reports in Volume 3.

11.2 Summary of effects

The actual and potential effects of the construction and operation of the Project are summarised in Table 11.1. This table only provides a summary of the positive and adverse actual and potential effects of the Project. It does not cover the mitigation and / or remediation of adverse effects.

Table 11.1: Summary of actual and potential environmental effects

Table key:

Construction effects
Operational effects

Actual or potential environmental effect	Positive	Adverse	Local, regional or national level effect(s)
Traffic and transport			
Increased construction traffic movements of both staff vehicles and heavier vehicles are likely to have adverse amenity and safety effects on local roads – including for pedestrians, horse riders and cyclists – and may cause damage to road surfaces.		✓	Local
The Project will result in significant travel time reductions and journey time reliability for travel between the Kapiti Coast, the Hutt Valley, Porirua and Wellington.	✓		Local and regional
Improved travel time reliability will result in: <ul style="list-style-type: none"> improved certainty around travel times in the corridor for all road users; more efficient freight movement and associated economic benefits; and better links to regional freight hubs, including the port, airport and distribution centres. 	✓		Local, regional and national
The Project will result in significant improvements in safety and a reduction in the frequency of crashes	✓		Local and regional
The Project will significantly enhance route security and resilience of the SH network into and out of Wellington.	✓		Local, regional and national
Traffic on existing SH1, SH58 and a number of local roads will be significantly reduced, resulting in improved amenity and accessibility for local communities, especially with significant reductions in the number of commercial vehicles	✓		Local and regional
Increase in traffic on part of Kenepuru Drive could have an adverse effect on the efficiency and safety of local traffic movements.		✓	Local

Actual or potential environmental effect	Positive	Adverse	Local, regional or national level effect(s)
There will be improved accessibility and connectivity to eastern Porirua (Porirua Link Roads) and western Porirua (Kenepuru Drive).	✓		Local, regional
There will be a small modal shift from rail to road for some travel in the corridor as a result of an improvement in road conditions.	✓	✓	Local, regional
Land use and property			
There will be some temporary occupation of private property for construction purposes, including construction site compounds. Some land will be designated, and the requiring authority will review permanent designation needs at the completion of construction.		✓	Local
By improving accessibility, the Project will provide more flexibility for businesses and households to establish in their preferred locations.	✓		Local and regional
Access to some properties will change as a result of the construction of the Project.		✓	Local
Network utilities			
Construction dust has the potential to adversely affect Transpower assets.		✓	Local, regional and potentially national
Potential for physical damage to network utility assets.		✓	Local, regional
Power lines and towers, the water supply bore in Paekakariki, gas line, regional water supply and telecommunications all need to be relocated and continuity of supply needs to be provided in the transition period.		✓	Local, regional
Noise and vibration			
Construction noise and vibration is likely to cause nuisance and disturbance to close neighbours.		✓	Localised areas of work
Construction vibration may cause damage to St Joseph's Church and the brick fuel tank near Paekakariki.		✓	Local
Reduced traffic volumes on existing state highways and local roads will result in reduced traffic noise levels, improving local amenity.	✓		Local
Localised areas will experience an increase in traffic noise levels as a result of the Project, including Flightys Road and at Linden.	✓	✓	local

Actual or potential environmental effect	Positive	Adverse	Local, regional or national level effect(s)
Air quality			
Potential for nuisance effects from construction activities (e.g. dust and vehicle fumes) at nearby sensitive receptors. Those most likely to be affected include residents near the Kenepuru and Waitangirua Link Roads, and Linden Interchange.		✓	Local
The concrete batching plant at Lanes Flat has the potential to have adverse dust effects if not adequately managed.		✓	Local
Reduced congestion will result in a regional improvement in air quality.	✓		Regional
Reduced vehicle movements on the existing State Highway and local roads in some areas will result in an overall reduction in public exposure to vehicle emissions.	✓		Regional
Contaminated land			
Presence of contaminants above human health risk-based guideline values may have adverse effects on human health; or above ecological risk-based guideline values on terrestrial / aquatic life.		✓	Local
There is potential for hazardous materials including asbestos and unexploded ordnance (at MacKays Crossing) to be discovered during construction resulting in human health risk (largely for workers).		✓	Local
In the long term, the Project will result in improved management of contamination, and the potential for human or ecological exposure to contamination will be reduced.	✓		Local, regional
Hydrology			
There will be some temporary changes to the stream environment(s) as part of construction works, including bridging and culverting.		✓	Local
There will be localised effects on the Waitangirua reticulated stormwater system which is under-sized to cope with increased flows which will arise once the Link Road has been constructed.		✓	Local
There will be some increase in flood risk potential in discrete locations.		✓	Local
Changes in stream alignment will result in changes in flow rate and channel shape.		✓	Local, regional and national
Water quality			
Discharges from open construction areas could result in increased sediment discharge to streams.		✓	Local, regional

Actual or potential environmental effect	Positive	Adverse	Local, regional or national level effect(s)
Discharges from the construction sites to streams in the catchments surrounding the Porirua Harbour will result in an increase in sediment levels in some instances.		✓	Local, regional
Overall stormwater discharges to Porirua Harbour will remain similar to the present situation. Contaminant levels in run off entering the Harbour from roads in some areas will be reduced as a result of fewer vehicle movements.	✓	✓	Local, regional
There is a significant improvement in understanding about the sediment and hydrological movements within the Porirua Harbour as a result of the collection of data to inform the technical assessments for the Project. This will benefit the wider community and inform the future management of the Porirua Harbour.	✓		Local, regional and national
Terrestrial ecology			
The construction of the Project will result in the removal of approximately 40 hectares of native and regenerating vegetation.		✓	Local
There is the potential for disturbance of the habitats of some species.		✓	Local
The loss of vegetation during construction will be compensated for through replanting, revegetation of pasture land and retirement of land of a greater quantum than what was removed. As a result there will be a net gain in the amount of vegetated area protected in the long term and a resultant long term benefit.	✓		Local, national
There is a minor chance of bats (if their presence is confirmed during further proposed ecological surveys) getting hit by vehicles – in the vicinity of Wainui Saddle.		✓	Local
Wetland construction within Upper Horokiri Stream catchment may result in rare plant species loss.		✓	Local
Freshwater ecology			
Sediment from worksite(s) could have an adverse effect on freshwater habitat and species.		✓	Local, regional
Works in streams could adversely affect fish species.		✓	Local, regional
Realigned streams could result in degradation of freshwater habitats for fish and freshwater macro invertebrates		✓	Local, regional
Over all the affected catchments there will be a net gain in freshwater habitat quality and only a minimal loss of linear length.	✓		Local, regional

Actual or potential environmental effect	Positive	Adverse	Local, regional or national level effect(s)
There is the potential to adversely affect fish passage. In all instances, fish passage can be provided where required, and the removal of three existing culverts from Duck Creek will result in improved fish passage and opening up additional stream length to fish.	✓	✓	Local, regional
Marine ecology			
Under normal weather conditions with erosion and sediment controls performing well, increased sediment entering the Porirua Harbour could have an adverse effect on marine habitat and species.		✓	Local, regional
In an extreme weather event (i.e. a one in ten year event or worse) with open earthwork areas in the same catchment, there is potential for significant deposition on the bed of the Porirua Harbour. If this happens in sensitive ecosystems within the Harbour, and natural processes (including wind and wave action) do not remove the sediment, there will be adverse effects on benthic communities if sediment remains present for longer than approximately three days.		✓	Local, regional and national
Tangata whenua			
The Project will have adverse effects on traditional mahinga kai, including terrestrial vegetation and, potentially, marine species.		✓	Local, regional
The Project has the potential to result in discovery of, or destruction of, artefacts of importance to tangata whenua.		✓	Local
Improved water quality from upstream land retirement, revegetation and planting will create corridors of riparian communities and stream habitat of increased value, which is important to tangata whenua.	✓		Local, regional
Landscape and visual			
The site construction yards, laydown areas and construction equipment will be present on the site for varying periods of time dependent upon location, having a potential adverse effect on views and outlook for residential neighbours.		✓	Local
Some people enjoy the visual outlook of (or on) construction activity.	✓		Local
Some people do not enjoy being able to see construction activity.		✓	Local

Actual or potential environmental effect	Positive	Adverse	Local, regional or national level effect(s)
The Project will noticeably change the outlook from some properties and public areas, as a result of the proposed roads, associated cuts and fills, new structures, fill sites and maintenance access tracks.		✓	Local, regional
When construction is completed, Lanes Flat will be developed as a public park for informal recreation purposes including with new wetland planting, an extension of the existing wetland areas, new public walkways and cycle tracks.	✓		Local, regional
The Tararua foothills are identified in the Kapiti Coast District Plan as an ONL, and there is potential for adverse effects on the integrity of the landscape.		✓	Local
Archaeology and built heritage			
Potential for adverse dust effects on glacier windows at St Joseph's Church.		✓	Local
Construction vibration may cause damage to St Joseph's Church and brick fuel tank.		✓	Local
Potential for discovery of artefacts during construction.		✓	Local, regional
Altering the design of the Project has meant that the brick fuel tank near the MacKays Crossing end of the Project can be retained and preserved. The NZTA could facilitate future access to the structure in partnership with another party e.g. KCDC, HPT.	✓		Regional, national
Social effects			
Disruption to recreational cyclists, horse riders and pedestrian networks during construction, including at MacKays Crossing, SH58, Warspite Ave and Kenepuru Drive; and potential adverse effects on connectivity through Battle Hill Farm Forest Park and Belmont Regional Park		✓	Local
Local village areas such as Pauatahanui and Waitangirua will experience increased activity as a result of construction workers being present.	✓	✓	Local
Potential for noise effects on surrounding communities during construction		✓	
Disruption to local communities will occur during construction, as a result of traffic, noise, and large crews of construction workers.		✓	Local
Potential for dust nuisance effects at nearby sensitive receptors – most likely to include residents near the Kenepuru and Waitangirua Link Roads, and Linden Interchange.		✓	Local
Potential for amenity effects for contact recreation (e.g. water becomes cloudy and less desirable		✓	Local, regional

Actual or potential environmental effect	Positive	Adverse	Local, regional or national level effect(s)
for swimming) in streams and / or Porirua Harbour.			
Change in amenity for the Marae, Church, schools and other facilities at the tie-in with the Whitby and Waitangirua Link Roads; and for local residents, particularly those with a view of the Main Alignment.		✓	Local, regional
Lanes Flat will become a more useable and pleasant public recreational area from the wetland restoration, public walkway and cycle path construction.	✓		Local
Loss of amenity and tranquillity in local and regional parks; including BHFFP and Belmont Regional Park, and at Mahoe Park and Arthur Carman Park.		✓	Local, regional
The access to St Josephs Church will be realigned and benefit from improved safety and visibility.	✓		Local
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 and positively impacts the communities along the existing SH1.	✓		Local